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Examining Risk Factors for HIV and Access to Services among Female Sex Workers (FSW) and Men Who Have Sex with Men (MSM) in Burkina Faso, Togo and Cameroon

EXAMINING RISK FACTORS FOR HIV AND ACCESS TO SERVICES AMONG FEMALE SEX WORKERS (FSW) AND MEN WHO HAVE SEX WITH MEN (MSM) IN BURKINA FASO, TOGO AND CAMEROON

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ACRONYMS

ACMS	Association Camerounaise pour le Marketing Social, Cameroon
ACODEDUGN	Association des Couches défavorisées et Vulnérables du Grand-Nord, Cameroon
ACODEVO	Association des Couches défavorisées et Vulnérables de l'Océan, Cameroon
ADEFHO	Association pour la Défense des Homosexuels, Cameroon
AIDS	Acquired Immune Deficiency Syndrome
AIDSETI	AIDS Empowerment and Treatment International, Burkina Faso
AIDS ACODEV	Aide Auprès des Couches Défavorisées et Vulnérables, Cameroon
ANC	Antenatal care
ART	Antiretroviral therapy
ASAD	Association d'Assistance au Développement, Cameroon
CAMFAIDS	Cameroonian Foundation For AIDS
CAMNAFAW	Cameroon National Association for Family Welfare
CBO	Community-based organization
CCP	Center for Communication Programs
CD4	Cluster of differentiation 4
CDC	Centers for Disease Control
CERS	Comité d'éthique sur la recherche dans la santé (ethics committee for health research), Burkina Faso
CFA	Communauté Financière Africaine (African Financial Community) franc
CHP	Care and Health Program, Cameroon
CI	Confidence interval
CNERSH	Comité National d'Ethique de la Recherche pour la Santé Humaine, Cameroon.
CNLS	Comité National de Lutte contre le SIDA (national committee to combat AIDS)
COFENHO	Collectif des Familles des Enfants Homosexuels, Cameroon
CPHHR	Center for Public Health and Human Rights
CSI	Centre de Santé Intégrée, Cameroon
DHS	Demographic and Health Survey
DROS	Division de la Recherche Opérationnelle en Santé, Cameroon
ESPK	Espace Sante Prévention De Kribi, Cameroon
EVT	Espoir Vie Togo
FAMME	Force en Action pour le Mieux être de la Mère et de l'Enfant (strength in action for the betterment of the mother and the child), Togo
FSW	Female sex worker
GIZ	Gesellschaft für Internationale Zusammenarbeit, Cameroon
GPS	Global Positioning System
GTC	Groupe Technique Central, Cameroon
GTR	Groupe Technique Régional, Cameroon
GV	Global Viral

GVFI	Global Viral Forecasting Initiative
HAART	Highly active antiretroviral therapy
HAPP	HIV/AIDS Prevention Program, Cameroon
HCT	HIV counseling and testing
HEVECAM	Hévéa du Cameroun, Cameroon
HIV	Human immunodeficiency virus
HRW	Human Rights Watch
HSH	Les hommes ayant des relations sexuelles avec des hommes (men who have sex with men)
IBBS	Integrated Biological and Behavioral Surveillance
INS	Institut National de la Statistique, Cameroon
IRSS	L'Institut de Recherche en Sciences de la Santé (the health sciences research institute), Burkina Faso
JHU	Johns Hopkins University
KI	Key informant
KP	Key population
LGBT	Lesbian, gay and bisexual and transgender
LMIC	Low- and middle-income countries
MEASURE	Monitoring and Evaluation to ASsess and Use REsults
MINJUSTICE	Ministère de la Justice, Cameroon
MINSANTE	Minister of Public Health, Cameroon
mm3	Cubic millimeter
MSEM	Modified social ecological model
MSM	Men who have sex with men
NGO	Nongovernmental organization
NSUM	Network scale up method
ONSP	Observatoire National de la Santé Publique, Cameroon
OR	Odds ratio
PAEMH	Projet d'Assistance et d'Encadrement des Minorités Homosexuelles, Cameroon
PAMAC	Programme d'appui au monde associative et communautaire de lute contre le VIH/SIDA, la tuberculose et le paludisme (the world associative and community support program of fight against HIV/AIDS, tuberculosis and malaria)
PEP	Post-exposure prophylaxis
PEPFAR	President's Emergency Plan for AIDS Relief
PLACE	Priorities for Local AIDS Control Efforts
PLWHIV	People living with HIV
PMI	Protection Maternelle et Infantile, Cameroon
PMTCT	Prevention of mother-to-child transmission
PWID	People who inject drugs
PWUD	People who use drugs

R2P	Research to Prevention
RDS	Respondent driven sampling
SEARCH	Supporting evaluation and research to combat HIV
SID'ADO	Adolescents contre le SIDA, Cameroon
SSA	Sub-Saharan Africa
STI	Sexually transmitted infection
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNGASS	United Nations general assembly special session on HIV/AIDS
US	United States
USA	United States of America
USAID	United States Agency for International Development
USD	United States dollar
WCA	West and central Africa

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EXECUTIVE SUMMARY

Introduction

The HIV epidemic in West and Central Africa (WCA) has distinct characteristics compared to other regions of sub-Saharan Africa (SSA). National prevalence data over time have shown moderate HIV prevalence in the general population, with no country in either region currently presenting prevalence data over five percent (UNAIDS, 2013). Concurrently, limited but emerging data among key populations (KP) at heightened risk of HIV in the WCA region indicate the burden of HIV is disproportionately higher among female sex workers (FSW) and men who have sex with men (MSM). More data are available for FSW, and sporadic prevalence studies in 13 countries in the region since the onset of the HIV epidemic show a consistently higher burden of HIV among these women compared to their female counterparts of reproductive age. A 2013 systematic review found a pooled HIV prevalence of all FSW studies since 1987 in the region to be 34.9% (95% CI 34.4-35.4) (Papworth et al., 2013). For MSM, five studies between 2005 and 2013 provided HIV prevalence data for MSM in Senegal (21.8% in 2005; 21.5% in 2010) compared to general population prevalence of 0.5%, and three studies in Nigeria between 2011 and 2013 produced a pooled prevalence of 15.1% compared to the general population prevalence of 3.2% (Papworth et al., 2013; UNAIDS, 2013). While these data imply a more concentrated nature of the epidemic in the countries where data are available, country-specific studies have either been limited or inconsistent to date for both populations. The Research to Prevention (R2P) program in WCA attempted to address this gap in existing data through comprehensive cross-sectional studies among FSW and MSM in Burkina Faso, Togo and Cameroon.

The theoretical framework applied to the R2P studies in Burkina Faso, Togo and Cameroon was based on the modified social ecological model (MSEM) (Baral et al., 2013). The MSEM posits five layers of risk for HIV infection: individual, network, community, policy, and stage/level of the HIV epidemic. It modifies the traditional social ecological model (Krieger, 2001) by tailoring the levels of risk to HIV-relevant domains. The MSEM is based on the premise that while individual-level risks are necessary for the spread of disease, they are not sufficient; higher order social and structural levels of risk (network, community, policy, level/stage of epidemic) represent risk factors outside of the control of any individual person (Wellings et al., 2006). This model therefore recognizes the important role social and structural factors can have in HIV transmission dynamics in KP, which has been demonstrated by research in African settings (Fay et al., 2011).

Concurrently, emerging HIV research indicates that investing and targeting high risk populations in the cascade or continuum of care for HIV is the best long-term solution to address the needs of KP living with HIV as well as to promote population-level HIV prevention and control. In concentrated, mixed or low-level generalized epidemics, researchers have asserted that ensuring effective engagement in the HIV continuum is essential for KP disproportionately affected by HIV (Baral et al., 2012; Gardner et al., 2011).

Therefore, this study aimed to characterize the access to health services for KP in relation to the continuum of care; and the integrated social-, individual- and policy-level risks contributing to heightened risk of HIV, with the purpose of understanding the possibility of suppressing the viral load and reducing new infections among these KP within the WCA region.

Methods

In order to characterize the burden of disease among FSW and MSM, provide epidemiological baseline data, and inform country-specific HIV prevention programs in Togo and Burkina Faso, respondent driven sampling (RDS) was employed. Study staff conducted the informed consent process with eligible. Eligible individuals based on the National Ethics guidelines of the country (verbal or written). Participants), completed a structured 45-minute survey, were counseled for HIV testing, and had their blood drawn. Participants who chose to receive the results of their HIV and other biological assessments received post-test counseling in addition to any needed health referrals. This study was completely anonymous, and de-identified participant codes were used at all stages. The survey included modules that have been used incorporated modules that have been previously used among KP in SSA, including West African countries, and included domains addressing condom use, sexual practices, relationship patterns, access to care, markers of stigma and discrimination, reproductive health, and social cohesion among the given KP group. Qualitative data collection employed key informant interviews and focus groups and in-depth interviews with MSM, FSW to obtain contextual and individual-level data in each city of implementation. Interviewees were recruited through the study staff and key informants, and trained qualitative interviewers led all interviews and focus groups.

In Cameroon, due to magnitude of the study and the specific research objectives, cities were selected based on a convenience sample. This study followed the PLACE method (Priorities for Local AIDS Control Efforts) (see Weir et al., 2012) for data collection, a technique developed to identify where prevention programs can access KP groups that can be adapted to the context of populations more hidden in nature. This method starts by identifying meeting places and services using community informants and other local experts. These places are then visited to confirm their importance and to recruit participants (USAID MEASURE Evaluation Project, 2005; Weir et al., 2002). This approach was used to identify health services accessed by the population and then evaluate the types and quality of those services in a given city. Cities were selected based on geographical distribution and the total city population (to ensure accessibility to the greatest number of FSW and MSM). The seven cities of implementation (in seven of the ten regions of Cameroon) included: Bamenda, Bafoussam, Bertoua, Douala, Kribi, Ngaoundere and Yaoundé.

Results

Burkina Faso

In Ouagadougou and Bobo-Dioulasso a total of 673 MSM were recruited through the R2P study in Burkina Faso with 343 and 330 sampled in the respective cities. The MSM participants in Burkina Faso were generally young, with 44.0% in Ouagadougou and 44.7% in Bobo-Dioulasso between 21 and 24, and 38.9% in Ouagadougou and 30.1% in Bobo-Dioulasso between 18 and 21 years of age. The vast majority were single/never married in Ouagadougou (94.6%) and Bobo-Dioulasso (96.3%). For the purposes of this study, MSM were defined as those who were born male and reported they had anal sex with another man in the past 12 months. This could include heterosexual and bisexual men and transgender women. When asked sexual orientation, 51.3% and 55.9% in Ouagadougou and Bobo-Dioulasso respectively identified as gay or homosexual with another 44.0% and 39.2% identifying as bisexual. Transgender identity was reported by 2.7% and heterosexual or straight was reported by 2.1% in Ouagadougou. Transgender identify was reported by 0.9% and heterosexual or straight was reported by 4.0% in Bobo Dioulasso.

In Burkina Faso 699 FSW participated: 349 in Ouagadougou and 350 in Bobo-Dioulasso. The FSW participants in Ouagadougou were generally younger than the participants in Bobo-Dioulasso, with 24.6% under 21 and 33.5% between 21 and 24 in Ouagadougou, compared to 10.3% under 21 and 18.6% between 21 and 24 years of age in Bobo-Dioulasso. Burkina Faso was the country of origin for the majority of participants (71.1% in Ouagadougou and 82.3% in Bobo-Dioulasso), though in Ouagadougou 13.8% were born in Cote d'Ivoire and 8.0% were of Nigerian origin. In Ouagadougou the participants had a higher level of education in contrast to Bobo-Dioulasso, with 34.5% reporting some secondary school in Ouagadougou compared to 15.7% in Bobo-Dioulasso, and 46.1% reporting no school in Bobo-Dioulasso compared to 23.8% in Ouagadougou.

HIV prevalence was 4.7% among MSM in Ouagadougou, though the RDS adjusted results showed a 2.8% (95% CI 1.4 – 5.6) prevalence. In Bobo-Dioulasso, non-RDS adjusted estimates indicated 4.9% prevalence among the sample, with RDS adjusted prevalence 3.7% (95% CI 1.9-7.0). Among individuals living with HIV, 41.8% in Ouagadougou compared to 20.0% in Bobo-Dioulasso reported they were previously diagnosed with HIV. In Ouagadougou 14.8% and in Bobo-Dioulasso 15.6% of MSM reported ever being forced to have sex; however, among participants living with HIV, 43.8% in Ouagadougou and 20.0% in Bobo-Dioulasso reported ever being forced to have sex. Regarding health services, 40.4% of MSM in Ouagadougou and 23.7% of MSM in Bobo-Dioulasso reported fear of accessing health services; interestingly, only 25.0% of individuals living with HIV in Ouagadougou and 25.0% in Bobo-Dioulasso reported the same fear. Very few participants reported having been denied healthcare (1.5% in Ouagadougou, 0.9% in Bobo-Dioulasso), though 36.0% and 20.1% reported avoiding the health system in Ouagadougou and Bobo-Dioulasso respectively.

HIV prevalence in Burkina Faso among FSW was found to be 8.9% in Ouagadougou and 32.9% in Bobo-Dioulasso. Adjusted RDS estimates indicate 14.4% prevalence (95% CI 7.9-24.6) in Ouagadougou and

32.7% (95% CI 26.6-39.4) in Bobo-Dioulasso. In Ouagadougou 4.3% of the participants tested positive for active syphilis compared to 11.4% of participants in Bobo-Dioulasso. Of individuals living with HIV 48.4% in Ouagadougou and 65.2% in Bobo-Dioulasso had been tested more than once for HIV, and 36.4% in Ouagadougou and 64.4% in Bobo-Dioulasso reported they had been previously diagnosed with HIV. The FSW participants in Burkina Faso concurrently reported substantial experiences with sexual violence, with 42.0% in Ouagadougou and 39.7% in Bobo-Dioulasso reporting being forced to have sex at least once. Fear of seeking health services was reported by 21.0% and 14.9% of participants in Ouagadougou and Bobo-Dioulasso respectively, and 15.5% and 9.2% reported avoiding health services in the respective cities.

The proportion of the population that is MSM in Burkina Faso is estimated to be 1.00% (95% CI 0.88-1.12). The population size estimate for MSM between the ages of 15 and 49 years old in urban areas in Burkina Faso is 8,806 (95% CI CI 7,761-9,851). The population size estimate for MSM between the ages of 15 and 49 years old at the national level is 34,060 (95% CI CI 30,018-38,102).

The proportion of the population that is FSW in Burkina Faso is estimated to be 1.17% (95% CI CI 0.67-1.67). The population size estimate for FSW between the ages of 15 and 49 years old in urban areas in Burkina Faso is 10,876 (95% CI CI 6,232-15,520). The population size estimate for FSW between the ages of 15 and 49 years old at the national level is 47,873 (95% CI CI 27,431-68,314).95% CI

Togo

A total of 354 MSM participated in Lomé, and 329 participated in Kara. Of these, 28.7% in Lomé and 46.8% in Kara were over 25 years old. The majority of the participants were born in Togo (90.9% in Lomé and 97.6% in Kara), with the remainder from Ghana, Benin, Burkina Faso, Ivory Coast, Niger, Nigeria, Gabon, and Liberia. Education levels were fairly high: 60.0% in Lomé and 80.0% in Kara completed high school or higher. Participants were overwhelmingly single, divorced, separated or widowed, with only 8.5% in Lomé and 3.0% in Kara currently married or cohabitating.

A total of 354 FSW participated in Lomé, and 330 participated in Kara. Of these, 65.6% in Lomé and 45.8% in Kara were over 25 years old. A large majority of the participants were born in Togo (71.8% in Lomé and 97.6% in Kara), with the remainder from Ghana, Benin, Burkina Faso, Ivory Coast, Niger, Nigeria, Gabon, and Liberia. Education levels were low; only 4.3% in Lomé and 24.2% in Kara completed high school or higher. Participants were overwhelmingly single, divorced, separated or widowed, with only 7.3% in Lomé and 6.1% in Kara currently married or cohabitating. Over half (51.2%) of FSW in Kara had at least one biological child, and over three quarters of FSW in Lomé (78.5%) had at least one biological child. Outside of sex work, many participants (46.3% in Lomé and 63.6% in Kara) were self-employed.

Overall, 18.5% of MSM in Lomé and 0.6% in Kara were living with HIV. In addition, 1.4% in Lomé had syphilis versus only 0.6% in Kara. About half of the MSM had been tested for HIV more than once (55.9% and 47.4%), while 30.8% in Lomé and 28.3% in Kara had never been tested at all. MSM in both Lomé and

Kara were subject to stigma and human rights abuses: 7.1% of MSM in Lomé and 8.2% in Kara were forced to have sex against their will at least once. In addition, about one-fifth of participants reported being verbally harassed (18.5% and 18.2%), blackmailed (15.6% and 21.9%), or physically aggressed (21.6% and 19.1%). A smaller percentage of both groups had difficulty accessing healthcare (17.0% in Lomé and 7.3% in Kara).

Among FSW, 27.1% of participants in Lomé and 10.0% in Kara were living with HIV. In addition, 2.3% in Lomé had syphilis compared to only 0.9% in Kara. More than half of FSW participants had been tested for HIV more than once (58.6% and 56.1%), while 25.7% in Lomé and 17.6% in Kara had never been tested at all. FSW in both Lomé and Kara were subject to discrimination and harassment. More FSW in Kara (36.8%) had faced discrimination by family members than in Lomé (8.5%). In Lomé, 17.2% of FSW and in Kara, 33.3% had been forced to have sex against their will at least once. Both groups were harassed or intimidated by police (29.7% in Lomé and 22.4% in Kara). In addition, a large number reported being verbally harassed (35.9% and 37.3%), blackmailed (20.6% and 36.2%), or physically aggressed (37.9% and 27.6%). About a quarter of FSW in Lomé and Kara had difficulty accessing healthcare (23.7% in Lomé and 25.8% in Kara), though a smaller percentage reported they were afraid to access healthcare (5.7% in Lomé and 10.0% in Kara).

The proportion of the population that is MSM in Togo is estimated to be 1.65% (95% CI CI 0.44-2.86). The population size estimate for MSM between the ages of 15 and 49 years old in urban areas in Togo is 11,955 (95% CI CI 3,191-20,720). The population size estimate for MSM between the ages of 15 and 49 years old at the national level is 25,019 (95% CI CI 6,677-43,361).

The proportion of the population that is FSW in Togo is estimated to be 0.82% (95% CI CI 0.57-1.07). The population size estimate for FSW between the ages of 15 and 49 years old in urban areas in Togo is 6,326 (95% CI CI 4,425-8,226). The population size estimate for FSW between the ages of 15 and 49 years old at the national level is 13,771 (95% CI CI 9,634-17,909).

95% CI95% CICameroon

A total of 1,817 FSW and 1,606 MSM participated in the R2P study in Cameroon. Ages of MSM sampled during this study varied from 18 to 65 years old across all seven cities of implementation in Cameroon. The highest proportions of MSM were in the age brackets 21 to 24 or 25 to 29 in all cities and declined in the 30 to 34 and 35 and over brackets, except in Bafoussam where 20.2% of participants were 35 and over. Of MSM participants, 10.5% indicated they did not know their HIV status either because they have never been tested (8.4%) or because they had never received their results (2.1%). Non-knowledge of status varied from 3.7% in Bertoua to 16.7% in Ngaoundere. Of those reporting not living with HIV, 82.5% reported having been tested in the past 12 months.

The ages of FSW sampled during the R2P study in Cameroon varied from 18 to 67 years old across all cities of implementation. The highest proportions occurred in the age bracket 25 to 29 in all cities, except in Bafoussam and Bertoua where the over 34 years old group was the largest, with 31.3% and

28.8% respectively. This study has covered a higher proportion of older FSW compared to a previous behavioral study among FSW in Cameroon (Tamoufe & Medang, 2009) in which the oldest age group was 50 to 54, and the highest proportion occurred in the age bracket 20 to 24 (32.9%, N=994). Employment patterns were similar across cities; 12.8% of all participants indicated they were unemployed, 37.1% students and 50.1% had some type of employment other than sex work, though the inclusion criteria for the study required all women to have obtained the majority of their income from the sale of sex within the past 12 months.

Only 7.0% of the MSM participants self-reported they were living with HIV, varying from 0.0% in both Bamenda and Bertoua to 18.0% in Douala. For Yaoundé and Douala when comparing the self-reported prevalence estimates (6.2%, 18.0%) and the biological estimates of prevalence which exist for these cities (44.4% [95% CI 35.7-53.2]; 25.5% [95% CI 19.1-31.9]) the self-reported estimates are significantly lower (Park, et al; 2013). Such differences have been noted in other studies with self-reported HIV status, as fear of stigma and discrimination can prohibit disclosure (Pedrana et al., 2012). Among the MSM sampled, 75.0% of individuals reporting they were living with HIV were on treatment, and 78.9% of those on treatment were receiving it from a hospital or pharmacy; the others were receiving treatment from traditional doctors. Of those not being treated 73.9% had received CD4 count results; however 45.5% had been informed they need treatment. Over half of MSM living with HIV never disclosed their serostatus to partners, 17.6% always revealed and 26.4% sometimes.

Among the FSW participants in Cameroon, 5.1% reported they were living with HIV, varying from 0.0% in Ngaoundere to 10.9% in Bertoua. This differs dramatically from the last seroprevalence study conducted among FSW in Cameroon which found a national-level prevalence of 37% among FSW sampled in all ten regions of the country, and specifically 53.1% prevalence among FSW in the city of Bertoua (Tamoufe & Medang, 2009). This again implies either the participants sampled in the R2P study were unaware of their status or unwilling to disclose in the study setting. Of the FSW participants in Cameroon, 64.2% who said they were living with HIV were on treatment, and 78.9% of those on treatment were receiving it from a hospital or pharmacy, while the others were receiving treatment from traditional doctors. Of those not being treated 18.5% had received CD4 count results, and 25.9% had been informed they need treatment. Over half of FSW living with HIV (65.2%) never disclosed their serostatus to partners, 8.7% always revealed and 26.1% sometimes.

In Cameroon, among the MSM participants, 25.8% had revealed their sexual orientation to a doctor or nurse; this varied from 11.3% in Bertoua to 37.1% in Douala. The cities with no specialized clinical services for MSM were the cities with the lowest levels of disclosure to medical personnel (Bafoussam 23.1%, Bamenda 25.7%, Bertoua 11.3% and Ngaoundere 23.0%). 7.5% of MSM participants were not able to list a single HIV prevention, testing or treatment service.

The mean number of clients in the past month reported by FSW across all cities was 109.5 (highest in Douala at 155.7 and lowest in Kribi at 67.2), and the mean number of non-paying partners in the past month was 1.2. 40.9% of FSW reported using condoms every time with clients, and 0.4% reported not

using condoms at all with clients in the past month. For non-paying partners this was 13.5% using every time and 33.5% not using condoms at all. Lowest levels of consistent condom use with clients in the past month were in Bertoua (9.4%), Bamenda (17.5%) and Ngaoundere (10.9%) and with non-paying partners Bertoua (3.5%), Bamenda (5.7%) and Ngaoundere (5.1%). 84.4% of participants indicated they thought it was easy to suggest using a condom with clients; this varied from 57.8% in Ngaoundere and 65.4% in Bertoua to 99.6% in Bafoussam. Almost half (47.9%) of the FSW participants indicated they had been offered more money for sex without a condom in the past week, with the highest percentages in Bertoua (58.9%) and Ngaoundere (67.3%). Only 13.5% said they had never received such an offer. Discussing condom use with non-paying partners was reported as difficult by 40.4% of participants, and was as high as 55.9% in Bamenda.

The proportion of the population that is MSM in Cameroon is estimated to be 1.38% (95% CI CI 0.51-2.25). The population size estimate for MSM between the ages of 15 and 49 years old in urban areas in Cameroon is 28,598 (95% CI CI 10,544-46,519). The population size estimate for MSM between the ages of 15 and 49 years old at the national level is 66,842 (95% CI CI 24,645-108,729).

The proportion of the population that is FSW in Cameroon is estimated to be 1.88% (95% CI CI 1.15-2.61). The population size estimate for FSW between the ages of 15 and 49 years old in urban areas in Cameroon is 38,582 (95% CI CI 23,563-53,477). The population size estimate for FSW between the ages of 15 and 49 years old at the national level is 98,102 (95% CI CI 59,914-135,978).

95% CI95% CIDiscussion

The results of the R2P study in Burkina Faso, Togo and Cameroon illustrate that FSW and MSM in these three countries also carry a heightened burden of HIV compared to other adults of reproductive age. Regional disparities were consistently reported in all three countries. In Burkina Faso, while MSM HIV prevalence was distributed evenly in Ouagadougou and Bobo-Dioulasso, FSW HIV prevalence was found to be nearly three times higher in Bobo-Dioulasso compared to Ouagadougou. The FSW participants in Burkina Faso had distinct characteristics by city such as differences in median age and marital status by city, and the distribution of HIV in the country among FSW implies Burkina Faso should develop adaptable and city- or region-specific prevention programs. This distributional disparity was also found in Togo for both populations, with MSM and FSW HIV prevalence in Lomé found to be 18.5% and 27.1% respectively and 0.6% and 10.0% in Kara. Kara is a much smaller urban center in the interior of the country compared to Lomé, the economic and political capital. This distribution implies prevention programs should be specifically tailored to the existing risk factors among both FSW and MSM in Kara, while developing clinical care specialized in KP health in Lomé is important. While HIV status was self-reported in Cameroon, regional differences were evident (0.0% self-reported living with HIV in Ngaoundere and 2.5% in Bamenda then up to 10.9% in Bertoua). This is concurrent with seroprevalence studies that showed a variance of HIV in different urban centers of Cameroon, both for MSM and FSW, though at much higher percentages than were self-reported in this study (Tamoufe & Medang, 2009). The self-reported nature of these results also implies some communities may have better access to HIV services or outreach services that are developed to meet their specific needs; therefore access to testing

is more readily available. However, other factors could also confound these results such as the reality that social stigma surrounding HIV may vary across regions of the country and predispose individuals to choose or decline to self-report their status if known (IRIN, 2014).

Researchers in the United States and elsewhere have demonstrated the importance of engaging populations in this continuum of HIV care— from people living with HIV being unaware of their status, through testing, diagnosis, followed by linkage to ongoing care and treatment (Beyrer et al., 2011; Gardner et al., 2011). In two recent studies in the United States, researchers found that due to advances in antiretroviral therapy (ART) regimes, with 70 to 80% adherence to ART by participants, durable viral suppression occurred in most individuals, lowering the possibility for onward HIV transmission (Bangsberg, 2006; Gardner, McLees, Steiner, Del Rio, & Burman, 2011; Gardner et al., 2011; Bangsberg, 2006). The findings indicate that the key to community viral suppression is early diagnosis of the infection, well-developed referral systems to clinical services, and care and support programs that encourage adherence and access to treatment (Beyrer et al., 2011). This approach has been shown to be effective in contexts with both high and low HIV prevalence, and recent research from South Africa affirms that adequate ART coverage at the community level reduces HIV incidence over time (Tanser et al., 2013). Thus, HIV prevention programs are beginning to show that distribution of prevention commodities and messages should be in concert with interventions that address the virology and biomedical aspects of care and treatment (Beyrer et al., 2011). This is even more relevant for KP who carry a significant burden of disease. Interventions must be adapted to the epidemiological distribution of HIV in each context.

The significant structural barriers to healthcare, including high levels of human rights violations across countries in this study must be addressed if appropriate and effective HIV prevention programs are to be developed in this region. The high rates of sexual violence reported by both populations across all three countries warrant further investigation, and prevention programs addressing not only the structural aspects of violence but also the medical (post-exposure prophylaxis [PEP], emergency contraception, and mental health facilities for victims) aspects are necessary. The reality that roughly half the FSW participants across all countries reported at least one experience of forced sex highlights a significant need and vulnerability amongst this population. Extortion, limited protection or exploitation by police members, and physical aggression were all highly reported in all three countries as well. The qualitative data further revealed these violations and detail aggression by clients as well as authority figures:

> Interviewer: Have you ever had a negative experience with a police officer as customer?
>
> Participant: Of course. I was on the street, he came and I ran home, he followed me and said he wanted to have sex with me. I refused, he decided to take me and handcuffed me. I told him that he did not have the right to grab me at home. He left and went away. One day they arrested me, at the police station a policeman took me to the toilet and decided to have sex with me. I told him to wear a condom, he refused, I refused saying

that I preferred to stay at the police station. I have also been beaten here in front of my door by a soldier who wanted to have sex with me, I refused and he started to beat me..

Interviewer: What did you do after facing all these brutalities?

Participant: We could not do anything and we just let it be. (Bafoussam FSW)

Conclusion

The burden of HIV among FSW and MSM found in the R2P studies in Burkina Faso, Togo and explored in more depth in Cameroon elucidates the need to develop comprehensive and integrated HIV prevention, care and treatment programs in each of these countries. Heightened prevalence and associated risk factors among this population implies regular testing for this population is needed in order to obtain early diagnosis and integration into the continuum of care and treatment programs is essential. High levels of sexual and physical violence in both populations must be addressed programmatically and politically. Regional distribution of HIV also implies cross-border migration, and sexual and social networks can be capitalized to better disseminate prevention messages as well as ensure retention in care facilities.

Structural barriers to health services for KP found in this study included stigma and discrimination, the inability to disclose sexual practices and health needs to health practitioners, and economic limitations to seeking services. Some of these barriers seem to be overcome when specific community-based organizations (CBOs) or services are developed to create safe spaces for the population to discuss health issues. While specialized CBOs exist in Cameroon, they are limited, and few exist in Burkina Faso and Togo. Where expertise exists, the clinical capacity of these groups is limited and could be scaled up to provide further HIV care and treatment services to the population. Concurrently, the population also attends general population health services, and in this context disclosure of sexual orientation or behavior is limited. Developing tailored services for KP, integrated into general population services, may avoid community-level stigma and discrimination from deterring individuals from accessing services. The regional disparities of the results also indicate local models should be developed on a city-by-city or region-by-region basis, and community structures should facilitate the relationship between the community and integrated health services.

INTRODUCTION

Despite low HIV prevalence among the general population relative to other regions of sub-Saharan Africa (SSA), West and Central Africa (WCA) contribute a significant proportion of new HIV infections to the global burden due to their large populations (combined regional population ~356 million, World Bank, 2013). While national HIV prevalence ranges from less than one percent to five percent in the region, prevalence among key populations (KP) such as female sex workers (FSW) and men who have sex with men (MSM) has been found to be significantly higher where studied (UNAIDS, 2012; Papworth et al., 2013). This is consistent with other regions of the world such as Southeast Asia and Latin America where HIV prevalence in the general population remains around or below five percent and disproportionately higher in KP such as FSW, MSM and people who inject drugs (PWID) (UNAIDS, 2012).

National HIV prevalence among MSM in SSA ranges from 8.8% in Sudan to 32.9% in Zambia (Beyrer et al., 2011). Globally, MSM have a 19.3 times higher odds of living with HIV in comparison with the general population (Baral et al., 2007) (Baral, Sifakis, Cleghorn, & Beyrer, 2007). Results from a systematic review indicated that MSM in countries with very low HIV prevalence have 58.4 times higher odds of living with HIV compared with the general population (Baral et al., 2007). In countries with low HIV prevalence the odds of living with HIV were 14.4 times higher in MSM compared to the general population, and in medium-high prevalence settings the odds were 9.6 times higher in MSM (Baral et al., 2012). The elevated HIV infection risk among MSM is in part attributed to socio-political factors such as stigma and discrimination that present significant barriers to HIV prevention (UNAIDS, 2006; Wade et al., 2010). Specific studies in West Africa have reiterated this disproportionate burden of HIV in MSM. For example, in two studies in Senegal in 2004 and 2007 conducted in four urban settings, researchers found HIV prevalence in MSM to be 21.5% (95% CI:18-25) and 21.8% (95% CI: 18-25) respectively, compared to the UNAIDS estimates of 0.7% prevalence in the adult male population (>15 years old) in 2007 (UNAIDS, 2010).

Elevated HIV prevalence among FSW is important based on the determinants of the HIV epidemic in WCA, and even more broadly across SSA. Surveillance has shown that women carry the highest burden of HIV on the continent, with national-level statistics consistently reporting that women have a higher HIV prevalence and HIV incidence than men (Baral and Phaswana-Mafuya, 2012; Ngugi et al., 2012). National HIV prevalence estimates among FSW in SSA range from 0% (Madagascar) to 70.7% in Malawi (Baral et al., 2012). While programs are designed to address the various risks associated with female HIV acquisition, results of studies in Cameroon demonstrate that HIV risks are significantly higher among FSW than other women who do not sell sex (Tamoufe & Medang, 2009). These results are consistent with a systematic review of HIV among FSW in low- and middle-income countries (LMIC), which showed FSW in SSA to have a pooled HIV prevalence of 36.9% (95% CI 36.2-37.5) with a background HIV prevalence on the continent of 7.42% in females (Baral et al., 2012). Globally, FSW were 13.5 (95% CI 10.0-18.1) times more likely to be living with HIV than other women of reproductive age (Baral et al., 2012). Thus, the epidemiology of HIV among FSW worldwide suggests the inclusion of these women, and their clients, in SSA is essential to address these populations' high acquisition and transmission risks.

Biological and behavioral risk factors for key populations

The heightened risks of HIV infection, structural barriers faced by MSM and FSW populations and their disproportionate burden of HIV intimate the need for further information on the number of MSM and FSW living in WCA and the availability and access to HIV prevention, treatment, and care services. Individual risks comprise complex features of physical, network and behavioral aspects. Risks for MSM and transgender women, such as unprotected receptive anal intercourse, high frequency of male partners and a high number of lifetime male partners may be controllable risks that can be reduced with education, prevention commodities and individual health services. However some individual risks for MSM may be outside of an individual's control, such as the high HIV viral load in the index partner and the physiology of HIV transmission during anal sex (Beyrer et al., 2012). Individual risks for MSM are most evident in relation to sexually transmitted infection (STI) acquisition and specifically in the context of the HIV pandemics in MSM communities globally. Data are emerging that suggest individual-level risks such as sexual behavior cannot fully elucidate high transmission dynamics within MSM HIV outbreaks, particularly in the era of HAART distribution and accessibility (Charlebois et al., 2011; Beyrer et al., 2012). Other factors, researchers argue, including biological, couple, network-level and community-level drivers, are essential to understanding how HIV transmission rates remain high in this sub-population (Beyrer et al., 2012). At the individual level, this means healthcare practitioners must first have a full sexual history of the patients, and second, should consider enrolling patients on ART at an early stage; promote the use of lubricants and condoms during all sex acts; and ensure preventive testing occurs at regular intervals.

For FSW, the biological risk associated with being the receptive partners in a sexual exchange, consistently low reported usage of condoms with regular or non-paying partners, heightened rates of sexual violence repeatedly reported among these communities, and the number of sex acts increase individual risk for acquiring HIV and other STIs (Baral et al., 2012). Similar to the MSM community, these risks are both preventable and non-preventable, and while tailored prevention programs such as promotion of condoms, condom-compatible lubricant during all sex acts, and early diagnosis and treatment of HIV and other STIs is imperative, access to PEP and structural factors associated with sexual violence must be taken into consideration during HIV prevention programming for women who sell sex. Simultaneously, nascent data indicate the reproductive health, the prevention of mother to child transmission of HIV (PMTCT) and the family planning needs of this population cannot be ignored as a substantial proportion of FSW can also be considered high-risk mothers.

Structural barriers and social factors

Structural barriers to care reduce the introduction of MSM and FSW populations into prevention, care and treatment facilities at an early and more effective stage of the HIV continuum of care. Many people living with HIV (PLWHIV) experience stigma regarding their HIV status; however the added social stigma associated with same sex practices or the sale of sex in many settings increases the likelihood that KP experience stigma and discrimination in a healthcare setting. Previous studies have identified stigma among PLWHIV in Cameroon, particularly in the form of verbal insults and shame of being HIV infected

(Jacobi et al., 2012). In a 2009 study in Cameroon, 32.4% of MSM in Yaoundé and Douala and 62.6% of sex workers reported being victims of stigmatization and discrimination at least one time (FISS-MST/SIDA, 2009). For MSM sampled in this study, the environments where these stigmatizations and discriminations most often occurred were family (23.5%), hospital (11.8%), religious (11.8%) and social (8.8%) environments while for FSW it was hospital (45.5%), family (39.4%), social (36.4%) and religious (21.2%) (FISS-MST/SIDA, 2009). Within health services, nurses were the most frequently cited as the originators of stigmatization and discrimination (75.0%), followed by administrative staff (50.0%) and doctors (45.8%) (FISS-MST/SIDA, 2009).

While there is limited information on structural barriers for these populations in WCA, evidence from other contexts has shown that stigma and homophobia are associated with an increased risk of HIV in MSM (Mayer, 2013) and that legal barriers can contribute to a higher risk of HIV and decreased access to healthcare (Semugoma, 2012). Access to healthcare and engagement in HIV services is the first step in a continuum of care that ultimately results in decreased HIV transmission through high coverage of ART in a community.

Inadequate legal policies have historically inhibited the delivery of best health practices for groups around the world. Public health policies provide the framework for health delivery in any given country. These policies dictate what type of health services are subsidized at the national level, what health priorities receive concentrated funding and, in principle, ensure the quality of service delivery meets standards set out by the state. From the perspective of sexual and gender minorities, these policies also either promote or decrease society's ability to provide appropriate services, such as preventive or harm reduction programs (e.g., relevant messaging; condom and lubricant provision) by passing laws that make such activity legal or illegal, or by providing or disrupting funding mechanisms supporting these programs (Beyrer, Wirtz, Baral, Peryskina, & Sifakis, 2010; Degenhardt et al., 2010; Wellings et al., 2006). National policies dictate the standardized national medical curricula for healthcare providers, and curricula often do not specifically address sexual or reproductive health matters for sexual minorities or individuals engaged in sex work, as these populations are automatically excluded by virtue of their illegality or neglected status.

This may result in two specific experiences for the lesbian, gay, bisexual and transgender (LGBT) community and individuals who sell sex when accessing health services. First, medical professionals may assume risks of STI or other communicable disease are or are not relevant to the population due to their own lack of education, and thus mistreat or overlook health concerns of patients (for example, the assumption women who sell sex do not have a regular sexual partner and may be interested in conception). Second, even if a full sexual history is disclosed in a healthcare setting, an absence of LGBT- or sex work-specific knowledge or discomfort with LGBT or sex work in general could facilitate insensitive or discriminatory behavior (Hon et al., 2005; Rondahl, Innala, & Carlsson, 2004). Where healthcare providers can recognize and challenge their own biases and assumptions about sex and gender norms, sexuality and other identities (e.g., religious, ethno-cultural) they can more effectively

support patients to explore, understand and define their own feelings, behaviors and preferences in order to better protect them from the risks associated with disease acquisition.

Service delivery models

If the services provided are currently not meeting the needs of LGBT and sex work communities throughout the world, what other types of service delivery models at the community level would be more appropriate for public policies to facilitate? Researchers have proposed different models for provision of services to MSM and sex workers that could mitigate community-level stigma and discrimination in LMIC, including fully integrated, stand-alone, and hybrid models of services. Beyrer et al. (2011) assert that since KP are specifically at risk in the HIV epidemic, full health services for KP should be integrated into general HIV programs, as a type of one-stop shop for all HIV-related programs. Stand-alone models include specific clinics or services that provide tailored, non-discriminatory services only to MSM and the LGBT community and sex worker populations within a society. This type of service model is debated, as some argue that the services may be non-voluntary and coercive, while others assert in highly homophobic environments, stand-alone services could be potential targets for anti-homosexual campaigns, political agendas, and community-level discrimination (Beyrer et al., 2011).

The hybrid model links community outreach, prevention messaging and education to MSM- and FSW-friendly clinical services that serve the entire population but have providers that are well-trained in KP health issues. This model implies that in order to reach marginalized populations, outreach and available prevention services linked to established clinics will increase patient uptake and ensure retention of KP within "safe" and de-stigmatized services and has seen success in certain contexts such as Malawi, Senegal and Lesotho (Beyrer et al., 2011). Among FSW, the reproductive health needs of the population are just emerging in the published literature and understanding the complex dynamics of fertility intentions, access to family planning services, partner relationship and contraception utilization are essential when developing comprehensive service delivery models for FSW. Further case studies are needed that are supported by policymakers worldwide, and it is likely that a mix of these models will be deemed appropriate based on each specific context in LMIC.

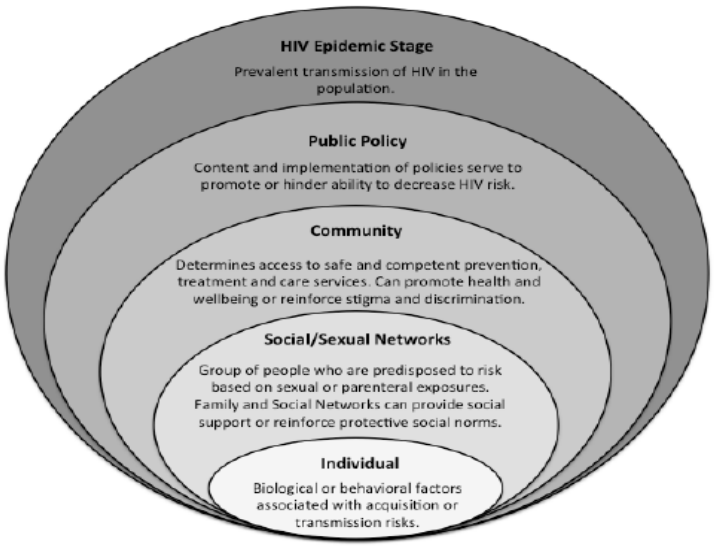
Theoretical framework: Research to Prevention WCA

The work of Research to Prevention (R2P) in WCA focused on characterizing and analyzing the burden of disease and the barriers to health service delivery among FSW and MSM in Burkina Faso, Togo and Cameroon.

The study utilized the same theoretical framework that has been implemented for USAID R2P projects in Swaziland and Malawi based on the modified social ecological model (MSEM) (see **Figure 1**) (Baral et al., 2013). The MSEM posits five layers of risk for HIV infection: individual, network, community, policy, and stage/level of the HIV epidemic. It modifies the traditional social ecological model (Krieger, 2001) by tailoring the levels of risk to HIV-relevant domains. For example, the "interpersonal" level present in the original model has been changed to "social and sexual networks," and an additional level specifying HIV/epidemic stage has been added. The MSEM is based on the premise that while individual-level risks

are necessary for the spread of disease, they are not sufficient; higher order social and structural levels of risk (network, community, policy, level/stage of epidemic) represent risk factors outside of the control of any individual person (Wellings et al., 2006). This model therefore recognizes the important role social and structural factors can have in HIV transmission dynamics in KP, which has been demonstrated by research in African settings (Fay et al., 2011).

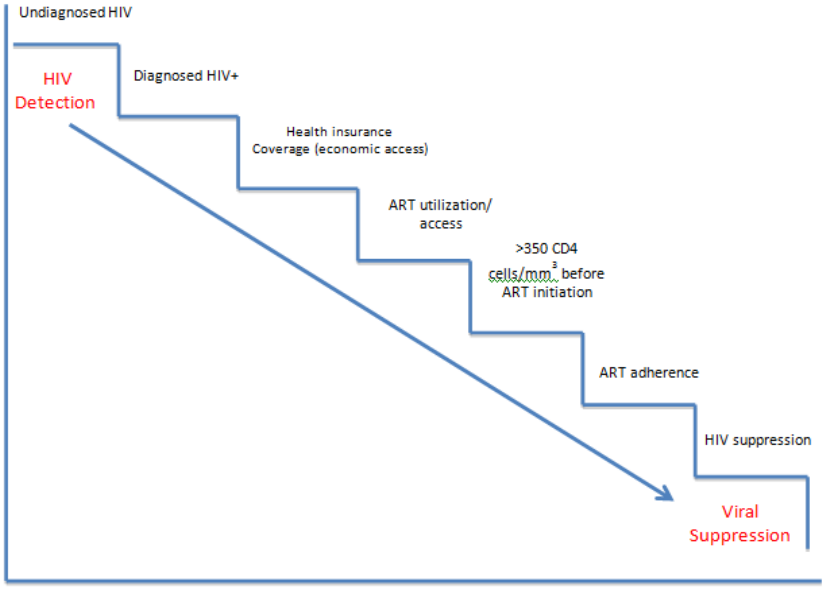
Figure 1. Modified social ecological model (MSEM) for HIV risk in vulnerable populations (Baral et al., 2013).



Emerging HIV research indicates that investing and targeting high risk populations in the cascade or continuum of care for HIV is the best long-term solution for their own HIV status as well as for population-level HIV prevention and control. In concentrated, mixed or low-level generalized epidemics, researchers have asserted that ensuring effective engagement in the HIV continuum is essential for KP disproportionately affected by HIV (Baral et al., 2012; Gardner et al., 2011).

The continuum of care itself consists of a cascade of key steps to suppress an individual patient's viral load through effective adherence to ART (**Figure 2**) (Gardner et al., 2011; Tanser et al., 2013). This implies early diagnosis and access to testing and counseling that then actively links people living with HIV cases into clinical care services. These clinical services should define the ART initiation criteria based on country or international recommendations and focus on retaining patients living with HIV in services to the point of ART intervention and to ensure adherence throughout the person's life. To achieve effective engagement in the HIV continuum, multiple individual and structural barriers must be addressed, particularly disclosure and stigma and discrimination at the health service provider level (Gardner et al., 2011; Beyrer et al., 2012; Baral et al., 2012).

Figure 2. Continuum of care (after Gardner, 2011)



Therefore, this study aimed to characterize the access to health services for KP in relation to the continuum of care and with the purpose of understanding the possibility of suppressing the viral load and reducing new infections among these populations. Upon formative assessment at the initial stages of the studies, epidemiological surveillance in the region appeared based on population-level studies of HIV prevalence, mostly led by ANC clinic serosurveillance and Demographic and Health Surveys (DHS). DHS are very expensive and technically complex, requiring country and multi-donor contributions, which many countries cannot often afford at regular intervals. Ideally, DHS are implemented once every five years. It is recognized that ANC data overestimate the HIV prevalence in the general population. Furthermore, these population-based surveys do not include information needed to understand the HIV transmission dynamics and behavior among other vulnerable populations, especially most-at-risk populations like FSW and MSM.

Thus, given the limited general population HIV prevalence in the region, studies targeting KP that were country-specific and required special methodology and approaches compatible with the country-specific socio-cultural context were developed under the USAID | Project SEARCH, Task Order No. 2: Research to Prevention (R2P) for the WCA region. Only a few countries in the WCA region were found to have appropriate technical data on HIV prevalence and HIV-related behavior among KP known to be relevant to the local epidemic, including FSW and MSM, that could be used to improve and better guide programming. The R2P WCA study responded to that specific need in Burkina Faso, Togo and Cameroon.

Framework and existing data on key populations in Burkina Faso, Togo, and Cameroon

In Burkina Faso, the HIV epidemic is generalized but stabilizing: at the end of 2008, a report on the epidemic showed a decrease in overall prevalence, reduced from 7.17% in 1997 to 2.7% in 2003 and stabilized at 1.6% in 2008 (CNLS, 2012). Data from similar African countries with generalized epidemics, however, suggest there is also high HIV prevalence concentrated among certain at-risk populations, such as MSM, FSW, and people who use drugs (PWUD). A study of FSW in Burkina Faso showed an HIV prevalence of 16.6% in 2010 while the reported prevalence in the general population was 1.0% the same year (PAMAC, 2012). Similarly, the 2010 UNGASS reports indicate a prevalence of 16.3% among MSM. In 2012, there was no information on the prevalence of HIV for PWUD in Burkina Faso, though high HIV prevalence has been reported among PWID in several countries, such as Tanzania and Kenya. Anecdotal reports indicate a potentially higher HIV prevalence among PWUD, and a qualitative component in the research framework in Burkina Faso investigated parenteral and sexual transmission risks among PWUD to identify areas of need and inform future interventions at the request of local collaborators within the Ministry of Health and in-country investigative team.

In Burkina Faso, the law does not discriminate against same sex practices, though social and cultural structures are less tolerant of LGBT communities. The sale of sex is also not specifically prohibited by law, but soliciting and facilitation are illegal (United States Department of State, 2012). The sale of specific narcotics is illegal under Burkina law (United States Department of State, 2012).

In Togo, HIV prevalence in the general population is estimated using data from regular surveys of sero-sentinel surveillance among pregnant women attending antenatal care (ANC) clinics. The 2009 HIV prevalence estimate was 3.2% for the general population. Since the first case of AIDS in Togo in 1987, the authorities considered AIDS as a public health priority. At the institutional level a national committee to fight against AIDS was established in 1987, as well as a national program against AIDS at the Ministry of Health (PNLS). In 2001, the Togolese government embarked on a multi-sectorial and multidisciplinary approach to fight against the pandemic. By Presidential Decree No. 2001-173/PR, 11 October 2001, the National Council for the Fight against AIDS and Sexually Transmitted Infections was developed (CNLS-IST).

The HIV strategic plan for 2012-2015 has several strategic objectives. The two key priorities are to strengthen the prevention of HIV infection and STIs in the general population and in groups that represent KP. The results of sentinel surveillance among pregnant women showed a decrease in HIV prevalence from 4.8% in 2003 to 3.6% in 2011. In 2011, Togo's epidemiological surveys showed an HIV prevalence of 3.6% among pregnant women, and HIV prevalence four to seven times higher among KP, estimated between 11.1% and 15.1% among FSW and between 15.9% and 23.8% among MSM (CNLS, 2011).

Same sex sexual practices among individuals and sex work are both criminalized in Togo. The penal code punishes individuals caught in the act of same sex practices with one to three years imprisonment and a fine between 100,000 – 500,000 CFA (200 – 1,000 USD) (United States Department of State, 2012).

These legal policies have limited the ability to characterize risk status among these populations as well as the possibility of providing comprehensive preventive services, though prosecution under this law is negligible. The penal law also prohibits the sale of sex in brothel conditions, with potential fines imposed allowable to one million CFA (2,000 USD), but allows the exchange of transactional sex (United States Department of State, 2012).

While MSM HIV prevalence data have not been published for Cameroon, peer-reviewed literature since 1991 shows there is elevated HIV prevalence among FSW in Cameroon, while the HIV prevalence among the adult general population most recently was reported as 4.3% (National Institute of Statistics, 2012). To date, there is limited information on MSM in Cameroon, and prior to 2011 there were no seroprevalence data on MSM at all. In contrast in the past decade, two nationwide HIV seroprevalence studies among FSW were conducted in 2004 (26.4% N=1,005) and 2009 (37% N=999) (Mosoko et al., 2004; Tamoufe & Medang, 2009). The most recent HIV prevalence estimate for FSW in Cameroon in 2009 was 37.0% and varied from 28.4% (South Region) to 48.4% (Adamaoua Region) in the various regions of the country (Tamoufe & Medang, 2009). Almost 400 sites where sex work takes place were surveyed and mapped in 2009, and the number of FSW was estimated to be between 8,000 and 18,000 based on the utilization of the wisdom of the masses method (GVFI, 2008). MSM HIV prevalence in 2011 in two main cites of Cameroon was assessed through RDS and crude HIV prevalence was found to be 47.3% and RDS adjusted 44.4% (95% CI 35.7-53.2) in Yaoundé, and 28.6% and RDS adjusted 25.5% (95% CI 19.1-31.9) in Douala (Park et al., 2013).

Cameroon law prohibits the sale of sex under Article 343 of the Penal Code and provides for punishment of six months to five years and fines of 20,000 CFA to 500,000 CFA. Same sex relations are also prohibited under Article 347 of the same code and are punishable by imprisonment for six months to five years and fines of 20,000 CFA to 200,000 CFA (United States Department of State, 2012).

Across all studies, the theoretical approach used validated models among KP in SSA, including West African countries, which facilitated the characterization of the HIV burden in relation to domains such as condom use, sexual practices, relationship patterns, access to care, markers of stigma and discrimination, reproductive health, and community dynamics among the given KP.

R2P WCA study objectives

1. To estimate the population size of female sex workers and men who have sex with men (Key Populations or KP) in Togo, Burkina Faso and Cameroon;
2. To estimate the HIV prevalence and HIV risk behaviors among KP in Togo and Burkina Faso;
3. To conduct a mapping of HIV prevention services and programs for KP in Cameroon;
4. To triangulate HIV data in Cameroon for effective HIV prevention planning.

METHODS

Burkina Faso and Togo

Quantitative Methods

Respondent driven sampling (RDS). RDS was used to recruit both MSM and FSW in Burkina Faso and Togo. RDS is a peer-recruitment sampling method designed to collect rigorous, representative data from hard-to-reach populations (Heckathorn, 1997). A small convenience sample of MSM and FSW was first identified and recruited. These initial participants, referred to as "seeds," were then asked to recruit other MSM and FSW, beginning a series of chain-referral sampling. Each participant was given a set number of recruitment coupons to distribute to prospective participants in their network. This limited the number of people accrued by any one participant. With each additional wave, recruitment should have become more representative and a closer approximation of a random sample. In this way, unbiased prevalence estimates could be calculated from a non-probability sample with RDS analysis.

Seed selection. Each seed could recruit a maximum of three participants. In Ouagadougou, Burkina Faso seven FSW seeds and six MSM seeds were selected. In Bobo-Dioulasso, Burkina Faso three FSW seeds and five MSM seeds were selected. The study team chose seeds who met the same eligibility criteria as the other participants (described below), represented diverse demographics (age, education, marital status, language, and HIV status), and who were willing to promote the study. Each seed was given no more than three coupons to recruit other participants.

In Lomé, Togo five FSW seeds and four MSM seeds were selected. In Kara, Togo five FSW seeds and four MSM seeds were selected. The study team chose seeds who met the same eligibility criteria as the other participants (described below), represented diverse demographics (age, education, marital status, language, and HIV status) and who were willing to promote the study. Each seed was given no more than three coupons to recruit other participants.

Sample size calculation. In both countries, the sample size was determined by powering on the assumption that populations that always wear condoms have 75% lower HIV prevalence than populations that do not always wear condoms. While the effectiveness of condoms is estimated to be approximately 80% (Weller and Davis, 2002), 73% is considered conservative. Overall HIV prevalence was estimated to be 15% among this population, with HIV prevalence estimated to be 19% among those who do not always wear condoms (~70% of people) and approximately 5% among those who do always wear condoms (~30% of people). With a power set at 80% and a significance level of 95%, 230 participants would be needed. However, with a design effect associated with RDS of 1.5, an estimated 345 participants were needed, rounded up to 350 per city.

Inclusion criteria and ethical considerations. In Burkina Faso, to be eligible to participate in the quantitative component of the study, potential participants had to be at least 18 years old and able to provide informed consent in French, Mòoré, or Dioula, have a valid coupon, and have lived in either

Ouagadougou or Bobo-Dioulasso for at least the past three months. In Togo, potential quantitative participants had to be at least 18 years old and able to provide informed consent in French, Ewe, or Kabiye, have a valid coupon, and have lived in Togo for at least the past three months. In both countries, FSW were eligible if they were born female and reported selling sex within the past 12 months as a principal source of revenue. MSM were eligible if they were born male and reported anal sex with another man at least once in the past 12 months. To be eligible, participants had to agree to complete a survey and HIV and syphilis testing.

In Togo, participants gave oral informed consent at the study sites. In Burkina Faso, participants gave written informed consent at the study sites. If participants were not willing to sign their names, they could leave their mark instead. Signed consent forms were stored in locked cabinets in locked offices separate from other study materials. No names were linked with survey responses or test results. Participants could choose whether or not to receive their HIV and syphilis test results. In Burkina Faso, each participant was given 2,000 CFA (about 4 USD), male condoms, and HIV information materials. Those who recruited others into the study also received 1,500 CFA (about 3 USD) per eligible recruited participant. In Togo, each participant was given 5,000 CFA (about 10 USD), male condoms, and HIV information materials. Those who recruited others into the study also received 3,000 CFA (about 6 USD) per eligible recruited participant.

The study received ethical approval from the Johns Hopkins Bloomberg School of Public Health Institutional Review Board for both studies independently and in each country approval was obtained from relevant authorities including the Ethics Committee for Health Research (CERS) of Burkina Faso and the National Ethics Committee of Togo. Procedures were put in place to protect participants against risks. Surveys were conducted in a private setting. To minimize physical risks, collection of blood samples were performed by trained staff. Psychological risks were minimized by providing research ethics training and sensitivity training for all staff on the specific needs of MSM and FSW. Confidentiality was maintained by using a unique study identifier rather than real names on surveys, protecting all electronic data with passwords, and storing hard copies of data in locked cabinets.

Data collection. Following informed consent, FSW and MSM participants completed interviewer-administered face-to-face surveys in a private room. Topics included in the surveys were designed to explore the multiple dimensions of the MSEM theoretical framework described above. Participants were first asked about their socio-demographics, followed by questions related to stigma and human rights violations, behavioral HIV risk factors, mental health, social cohesion, and gender- and population-specific questions (such as reproductive health questions for FSW).

Laboratory procedures. HIV and syphilis counseling and testing were then conducted according to official Burkina Faso and Togolese guidelines. In both countries, voluntary counseling and testing methods for HIV were used, which includes screening and confirmatory tests with rapid test kits. Blood samples were collected by a trained technician. Participant unique, non-identifiable codes were used to link results of the surveys with test results as well as facilitate the provision of test results and

appropriate treatment or referrals. Participants who chose to receive their results could do so on-site shortly after testing. Participants who tested positive for syphilis were offered free treatment at the study site. Participants who tested positive for HIV were referred to a healthcare center.

Population size estimates. This study estimated the number of MSM (defined as those born male over age 18 who had anal sex with another man in the past year) and FSW (defined as those born female over age 18 who made most of their income in the past 12 months from selling sex) in each country. Population size estimations for MSM and FSW were calculated using multiple methods: wisdom of the masses, unique object method, capture recapture and social event.

Wisdom of the masses. To calculate population size using wisdom of the masses method, MSM and FSW participants recruited through RDS were asked in the survey "How many MSM/FSW would you guess live in (name of study city)?" The resulting estimate is the median response to that question. The median was used to reduce the possibility of skewing from outlier responses. Data were excluded from participants whose "guesses" were lower than the number of MSM or FSW the study was able to accrue through RDS in each city.

Unique object method. In each city a local community peer educator or community group representative distributed up to 350 unique objects per population approximately two weeks before the study start date. During the survey each participant recruited through RDS was shown the unique object and asked if he or she had received the unique object. The estimation of population size using unique object method is done by using the following formula:

$$p = \frac{1}{(\frac{m}{n_2})} * n_1$$

Where p is the population estimate, n1 is the number of objects distributed; n2 is the total number of participants in the study and m is the number of participants who received the object (1).

Capture recapture. The capture-recapture method was used for FSW population size estimation. Five venues were visited in each city. Venue selection criteria required the venue to have from 50 to 100 people present at the site. The number (n_1) of FSW present on site, known as the "capture", at the first visit was recorded. The same study staff returned to the same site one to three weeks later and recorded the number (n_2) of FSW present at the second visit, and those encountered on the first visit(r); known as the "recapture". The FSW population size was then computed using the formula: N= 〖(n〗_1*n_2)/r.

Social event. A social event as a multiplier method was organized in Burkina Faso, and specifically for MSM, by AIDSETI in collaboration with representatives of the target populations. Each study city held an event two to three weeks before the start of the study. The number of participants was recorded. Participants recruited through RDS were asked in the survey "Did you participate in the event organized

by (NAME) on (DATE) in (PLACE)". The multiplier method for the social event was calculated in the same way as with the unique object, with the reception of the object being replaced by participation in the event.

Analysis. Separate population weights were computed for each variable (Schonlau & Liebau, 2012), with each variable's proportion based on the number of participants who answered each question. RDS adjusted proportion estimates were then calculated from these weights (Heckathorn, 1997). RDS adjusted estimates attempt to address two potential biases of RDS methods: homophily (the tendency for participants to recruit others like them) and the variation in network sizes of different participants. Standard errors were estimated using a bootstrap method with 1,000 repetitions. In the results tables, a hyphen in a cell means that percentage could not be calculated due to sample size or skip patterns in the survey.

Population size estimation analytical methods. The MSM and FSW estimations for each method were evaluated, and the valid responses were included in the analysis. The number of MSM (defined as having anal sex with another man in the past year) or FSW (defined as making most of their income from selling sex in the past year) in each study city was estimated by calculating the average population size estimate from all the methods used for each population in each city. The resulting number of MSM/FSW was compared to the total number of people in the city who match the sample population by gender and age according to national census documents. The resulting proportion represents the percent of the population in a specific city that is MSM or FSW. The average of these proportions was taken to estimate nationwide proportions of MSM and FSW. These proportions can be used to estimate the number of MSM or FSW in any geographic area of the country, e.g., city, region. In this report, the proportions were applied to the 2013 projected male or female population aged 15 to 49 years old (reproductive age) to estimate the number of MSM and FSW at a national level and in urban areas of the country.

Qualitative Methods

Key informant interviews. Semi-structured interviews were conducted with a variety of key informants who had important knowledge regarding the FSW, MSM and PWUD communities and related services in Ouagadougou and Bobo-Dioulasso, Burkina Faso, including individuals who serve FSW, MSM or PWUD through HIV prevention programs; work for other service organizations that affect FSW, MSM or PWUD; and those who interact socially with FSW, MSM or PWUD. In Togo, the same approach was utilized for FSW and MSM populations in Lomé and Kara. Key informants were identified through community partner organizations. The team of investigators made contact with the identified key informants and presented the purpose of the study to them. If key informants were interested in participating in the study, the investigators set up an interview appointment.

Semi-structured interviews were conducted at a location agreed upon by the interviewer and the interviewee, taking into account the privacy and security of both. Before the start of the interview, the

interviewer explained the objectives of the study and obtained the participant's written informed consent. Each participant was interviewed once. All interviews were conducted in the language spoken by the participant (Burkina Faso: French, Mòoré, or Dioula; Togo: French, Ewe, or Kabiye) and lasted approximately one hour.

Interview guides directed research question-inspired discussion and stimulated conversation. Key informants were asked to describe the situation for the relevant KP in their communities, their knowledge of existing HIV care services available as well as services specifically targeting MSM, FSW, and PWUD (in Burkina Faso), and their views on how these services could be improved to better meet the needs of these populations.

In-depth interviews with female sex workers, men who have sex with men, and people who use drugs. In addition to key informant interviews, individuals from the KP were interviewed (FSW, MSM in Togo and Burkina Faso; PWUD in Burkina Faso only). These participants were recruited through word-of-mouth or were identified as potential qualitative participants at the time they participated in the quantitative component of the study.

Eligible individuals were invited to participate in a semi-structured interview at the study site. Before the start of the interview, the interviewer explained the objectives of the study and obtained written informed consent. Each participant was interviewed up to two times, and no personally identifying information was stored with the audio file or transcript. All interviews were conducted in the language spoken by the participant (Burkina Faso: French, Mòoré, or Dioula; Togo: French, Ewe, or Kabiye) and lasted approximately 90 minutes.

Interview guides directed the discussion and stimulated conversation on topics of interest. The guides covered the general experiences and practices of FSW, MSM, and PWUD in Burkina Faso, the organization and networks of these populations, their knowledge and practices regarding HIV and STI prevention and treatment, and their experiences with stigmatization and discrimination. Life history qualitative guides were also developed for alternative use with MSM. These guides were designed to enable investigators to assess the health risks and social experiences during the major life events of MSM.

Focus groups with female sex workers, men who have sex with men, and people who use drugs. Focus groups in Togo and Burkina Faso were conducted separately with FSW, MSM, and PWUD in Burkina Faso. These participants were identified in the same manner as the participants in the in-depth interviews. However, individuals who participated in an in-depth interview were not eligible to participate in a focus group, and those who participated in a focus group were not eligible to participate in an in-depth interview.

Eligible individuals were invited to participate in a focus group at the study site. Before the start of the focus group, a staff member explained the objectives of the study and obtained written informed consent from each participant individually. Focus groups were conducted in the language spoken by the

participants in that group (Burkina Faso: French, Mòoré, or Dioula; Togo: French, Ewe, or Kabiye) and lasted approximately 90 minutes.

Discussion guides directed the focus group and stimulated conversation on topics of interest. The guides covered similar topics as the in-depth interview guides. Additionally, focus group participants were asked to give feedback on preliminary results of the study.

Inclusion criteria and ethical considerations. In Burkina Faso, to be eligible to participate in the qualitative component of the study, potential participants had to be at least 18 years old and able to provide informed consent in French, Mòoré, or Dioula, and have lived in either Ouagadougou or Bobo-Dioulasso for at least the past three months. FSW were eligible if they were born female and reported practicing sex work within the past 12 months as a principal source of revenue. MSM were eligible if they were born male and reported anal sex with another man at least once in the past 12 months. PWUD were eligible if they reported using illegal drugs within the past 12 months. (Illegal drugs include injecting or non-injecting drugs which are considered illegal by national law; this excludes culturally accepted drugs such as marijuana.) Key informants were eligible if they had privileged and in-depth knowledge of the FSW, MSM, or PWUD communities.

In Togo, to be eligible to participate in the qualitative component of the study, potential participants had to be at least 18 years old and able to provide informed consent in French, Ewe, or Kabiye, and have lived in either Lomé or Kara for at least the past three months. FSW were eligible if they were born female and reported practicing sex work within the past 12 months as a principal source of revenue. MSM were eligible if they were born male and reported anal sex with another man at least once in the past 12 months. Key informants were eligible if they had privileged and in-depth knowledge of the FSW or MSM communities.

In Burkina Faso, participants gave written informed consent per National Ethics Committee procedures at the study sites administered by a trained study staff. If participants were not willing to sign their names, they could leave a personal mark (e.g., a cross) instead. Signed consent forms were stored in locked cabinets in locked offices separate from other study materials. No names were linked with audio files or transcripts. In Togo, participants gave verbal informed consent at the study sites administered by a trained study staff.

For scheduling purposes only, the study team members requested first name and telephone numbers from potentially eligible and interested interview and focus group participants (key informants, FSW, MSM, or PWUD in Burkina Faso). This identifying information was only used to schedule interviews or focus groups, was retained in a separate database, was accessible only to the scheduler, and was not be linked to any of the audio files or transcripts. All participants had the option to decline to provide their name and telephone number. All identifiers that were collected for scheduling were destroyed upon the participant's completion of his/her interview or focus group discussion. To ensure confidentiality when calling participants, study team members were trained not to leave any messages or voicemails when calling the participant's telephone number and call back at a later time if the participant was

unavailable. The study team member confirmed that the call respondent was in fact the participant prior to discussing the scheduled appointment, and was trained not to mention anything that indicated the individual's participation in the study nor his or her identity as an FSW, MSM, or PWUD. Interviewers and participants also created secret questions to verify their identity over the phone. No other study information was provided over the phone, other than the date or time, unless the participant had general questions about the qualitative activity. In Burkina Faso, each FSW, MSM, or PWUD interview or focus group participant was given 2,000 CFA (approximately 4 USD), male condoms, and HIV information materials. In Togo, each FSW or MSM interview or focus group participant was given 5,000 CFA (approximately 10 USD), male condoms, and HIV information materials. Key informants were not compensated.

Procedures were put in place to protect participants against risks. Interviews and focus groups were conducted in a private setting. Psychological risks were minimized by providing research ethics training and sensitivity training for all staff on the specific needs of MSM, FSW, and PWUD in Burkina Faso. Confidentiality was maintained by using a unique study identifier rather than real names on audio files and transcripts, protecting all electronic data with passwords, and storing hard copies of data in locked cabinets.

Analysis. With the consent of the participants, interviews and focus groups were audio recorded. If an individual interview participant declined the recording, the interviewer took notes and reconstructed the conversation afterwards. Recordings were transcribed into French from local languages. Data categorization and coding for analysis was done by hand. Within each population, individual themes emerged from the transcription texts and were summarized into narrative text as well as highlighted using exemplar quotes per theme.

Cameroon

Quantitative Methods

Sampling and data collection. While national estimates would be ideally based on a stratified, random selection of cities from across the country, due to budget and time constraints cities were selected based on a convenience sample. Cities more likely to have a greater number of FSW and MSM were chosen, and these will be somewhat representative of major cities at the national level. Seven cities were retained: Bamenda, Bafoussam, Bertoua, Douala, Kribi, Ngaoundere and Yaoundé. **Table 1** (p. 113) shows the characteristics of some of the major cities used to prioritize city selection.

To identify venues used by MSM and FSW, visits were made to nongovernmental organizations (NGOs) community based organizations (CBOs) and government service providers. Individuals who had knowledge of FSW, MSM, and HIV-related services, specifically, HIV program planners, policy makers, clinicians, and community leaders from both the FSW and MSM communities were identified and immediate or follow-up surveys scheduled to gather information on the location and types of venues

frequented by MSM and FSW. Surveys lasted up to 15 minutes. Up to 25 key informants were surveyed per city.

Sites identified through data reviews and key informants were verified through site visits by study staff. During these visits management staff was surveyed regarding individuals using the venue, its operating hours and any prevention activities. Up to 50 FSW venues and MSM venues were assessed in each city.

FSW and MSM present in these venues were approached by members of a team consisting of project staff and local community staff familiar with the population and administered a rapid survey. MSM were also given a project business card and asked to distribute to individuals within the MSM community to permit snowball sampling. For those who received the card and called the study number the study was explained and an appointment arranged at a local NGO office. Individuals at venues or recruited through snowball sampling who were eligible, agreed to participate, and gave informed written consent were administered the survey. The survey lasted up to 30 minutes and included questions on age, known FSW/MSM venues and HIV services, sexual behaviors, social experience as a FSW or MSM, access to HIV services (prevention, testing and treatment), HIV status, knowledge of and experiences at services and their perception of the FSW or MSM population size in their city and in the country. A maximum of 300 FSW and 250 MSM were surveyed per city.

Information was also gathered from key informants and from MSM and FSW participants on places where HIV prevention services are available. The HIV services that are most frequented by the target populations were identified. These included places where HIV-related activities occur, including HIV diagnosis, care and treatment as well as prevention activities. The most reported sites were visited by the study team who conducted surveys with managers or staff on: the name, ownership category (public/private/Catholic/etc.), types of care provided, fees charged for services, number of personnel, estimated number of patients, and general demographics of patients. Survey questions also included a description of existing HIV prevention, care and treatment services, including perceived achievements and challenges to implementation and impact. Up to 60 services were visited per city.

During the literature review, site verification, and qualitative research (key informant interviews, in-depth interviews and focus groups), information on the location (address and latitude/longitude) of HIV prevention, testing and care services, FSW activities and MSM activities were gathered to permit mapping of these locations. Data collected and maps produced were used to determine the coverage of services for FSW and MSM and the potential gaps where additional services could be provided.

Data collection took two to three weeks in each city. In Kribi and Bafoussam, recruitment was done also in satellite towns to achieve the sample size targets. Hence, Bafoussam also included Mbouda (FSW and MSM), Dschang (FSW and MSM), Bandjoun (MSM only), Koutaba (FSW only) and Foumbot (FSW only) and Kribi also included HEVECAM (FSW). Data on where the participant was recruited was retained and was available for inclusion/exclusion in later analyses.

Sample size calculations. **Table 2** (p. 114) shows the estimated number of sex workers in target cities (Tamoufe & Medang, 2009) along with the number of individual FSW targeted for quantitative sampling and the percentage of the population that this represents.

A minimum sample size of 150 individuals was selected to ensure reasonable recapture of the up to 400 unique objects that would be attempted to be distributed in the communities, and a sample size of 300 was selected as a goal in the larger cities. This sample size per city represents an important proportion of the estimated local FSW populations (≥8% of local FSW population in each city and 17.5% over the seven cities).

Inclusion criteria and ethical considerations. To be eligible to participate in the quantitative component of the study, potential participants had to be at least 18 years old and able to provide informed consent in English or French. FSW were eligible if they were born female and reported selling sex within the past 12 months as more than half their income. MSM were eligible if they were born male and reported having had insertive and/or receptive anal sex with another man in the past 12 months. Key informants were eligible if they worked at organizations, establishments, clinics, and programs that serve the study populations (MSM or FSW), that are related to sex work, that may be an MSM venue, or that address health issues related to FSW, MSM, or HIV.

Participants gave written informed consent as per the Cameroonian National Ethics Committee procedures. Signed consent forms were stored in locked cabinets in locked offices separate from study materials. No personal identifying information was associated with survey data. All surveys took place in a language (French or English) of the participant's choice. Surveys were undertaken in places where security and privacy of participants and interviewers was ensured. Staff underwent special training in working with KP. All electronic copies of data were kept on password-protected computers.

All field teams worked in close collaboration with local CBOs with experience in working with target populations and with familiarity with local environment and security issues to reduce the possibility of security risks. Field staff always worked in groups of at least two individuals, and all had mobile phones with credit. When working at night field staff was accompanied by a vehicle and driver to ensure they had a possibility of a safe departure/retreat in case of problems.

A technical review was undertaken by the Cameroon National AIDS Control Committee Monitoring and Evaluation group during one of their regular meetings, comments and suggestions were integrated, and a letter supporting the study was obtained and copied to each region where the study was to be undertaken (0218/2013/L/MINSANTE/CAB/STBP/CNLS/GTC/SP/SPSE/mla du 8 fev 2013).

The study protocol, data collection tools and consent forms were reviewed and approved by the Comité National d'Ethique de la Recherché pour la Santé Humaine (2013/03/065/L/CNERSH/SP du 21 mars 2013) and the Johns Hopkins University Institutional Review Board (IRB no. 00004257, 2 Jan 2013 and amended 18 April 2013).

The Directorate of Operational Research at the Ministry of Public Health reviewed the protocol, provided comments which were integrated and provided administrative approval (Authorisation Administrative de Recherche No 631-05.13, correspondence No D30-405AAR/MINSANTE/SG/DROS/CRC/CEA1 du 23 mai 2013).

The Comité National d'Ethique de la Recherché pour la Santé Humaine and the Ministry of Public Health approved the inclusion of participants aged 18 to 21 for the purpose of this study. As this age group was important for both populations in previous studies their inclusion was necessary to provide a better representation of the population at risk of HIV infection in Cameroon.

The Regional Delegates of Public Health in each region where the project undertook activities provided a letter authorizing activities in those regions and requesting support from HIV service staff in the region to the study.

Population size estimates. Population size estimations for MSM and FSW were calculated using three primary methods, wisdom of the masses, unique object method, and the service multiplier method.

Wisdom of the masses. To calculate the wisdom of the masses each MSM and FSW survey participant was asked "how many MSM/FSW do you think live in this city?" The resulting estimate is the median response to that question. The median is used to reduce the possibility of skewing from outlier responses. The method was excluded from final estimates if the median response was lower than the sample size of the population surveyed in that city.

Unique object method. In each city a local CBO distributed up to 400 unique objects per population in the two weeks preceding the study. During the survey each participant was asked if they had received the unique object. For size estimation using the unique object technique, the inverse of the proportion of survey participants who received a unique object is multiplied by the number of objects that were distributed:

$$p = \frac{1}{m/n2} * n1$$

Where *p* is the population estimate, n1 is the number of objects distributed; n2 is the total number of participants in the study and m is the number of participants who received the object. The unique object method was excluded for MSM in Kribi where 98% of the unique objects were received by the study sample. The same CBOs both distributed the unique objects and recruited the study participants, which violated the assumption for the unique object method that the two samples (those who receive the objects and those who participate in the survey) are independent.

Service multiplier method. The service multiplier method uses the same mathematical formula as the unique object method, but instead of objects participants are asked about membership in a specific MSM or FSW CBO. In the method p is the population estimate, n1 is the number of people who used the

service, n2 is the total number of participants in the study, and m is number of study participants who used the service. The registration records for local CBOs in each city were used to determine the number of users of the service. When a local MSM or FSW organization did not exist in the city, the service multiplier method was not used for that population. Additionally, service multiplier method estimations were excluded when the assumptions of the method were violated or the implementation impacted the participant responses. Estimates were excluded if more than one organization's registration records were used, as for MSM in Douala, or if study participants did not understand the question, as for FSW in Bamenda.

The population size estimation methods for each city were evaluated, and methods were excluded based on the criteria discussed above. The remaining methods were then averaged, providing an estimate of the number of MSM and FSW in each city. The city-specific estimates were then used to calculate the proportion of MSM/FSW in the population of the same gender and age. For example, the estimated number of MSM in Kribi was divided by the number of men in Kribi of the same age range and multiplied by 100 to get the proportion. The number of males and females in these age ranges was calculated using data from the Cameroonian National Institute of Statistics. The resulting proportion represents the percent of the population in a specific city that is MSM or FSW. The average of these proportions was taken to estimate nationwide proportions of MSM and FSW. These proportions can be used to estimate the number of MSM or FSW in any geographic area of the country, e.g., city, region. In this report, the proportions were applied to the 2013 projected male or female population aged 15 to 49 years old (reproductive age) to estimate the number of MSM and FSW at a national level and in urban areas of the country.

Analysis. Quantitative data analysis was performed using Stata 12.1.

Study limitations. This study does not permit national extrapolations outside of major cities; no rural sites were included in the study, limiting our ability to understand KP and access to services in those areas. However, as many of the individuals in those areas will likely be moving to larger cities to seek testing and treatment care, the coverage described in this report is probably representative of the services they are accessing. Additionally, as the majority of the target populations probably live or work in urban centers, a large proportion of the population was captured and assessed in this study.

Multiple techniques were used for population size estimation as each method has limitations and assumptions. For example, estimations by the unique object method are reduced by the closed nature of the communities and the limited methods of access. The objects distributed by CBOs were recuperated in part by working with the same CBOs in areas where they operate. This certainly reduces the population size estimates using this technique.

Qualitative Methods

Key informant interviews. Key informants who completed quantitative surveys were also invited to participate in an in-depth qualitative interview. Interviews lasted up to 90 minutes each. Participants

were asked to describe the social and structural context surrounding sex work and same sex practices, FSW and MSM knowledge of existing HIV-related services as well as services specifically targeted towards MSM and FSW, challenges in accessing HIV care and preventive services, and their thoughts for how services could be improved to better meet the needs of these populations.

In-depth interviews with female sex workers and men who have sex with men. In-depth interviews, lasting up to 90 minutes each, were conducted with FSW and MSM participants to understand the social contexts for MSM and FSW in Cameroon and to describe existing HIV prevention services and missing HIV prevention needs of the communities. The study targeted up to 40 in-depth interviews with each of the study populations (MSM and FSW).

Eligible participants were referred by staff undertaking the surveys and by CBO/service staff. Scheduling of interviews occurred in three ways: (1) the participant's name and phone number were collected and a reminder call given the day before the interview date, (2) an interview was scheduled directly or (3) the study business card was provided so that participants could contact the study team to organize an interview. Individuals were invited to participate in the interview in a local study site office, partner organization office or other private and secure location.

Interviews were semi-structured. Participants were asked about the experiences of MSM and FSW generally in their communities, the organization and networks of MSM and FSW, their personal and community experiences with HIV prevention, care, and treatment services, their experiences with stigma and discrimination, and their thoughts for how services, interventions, and messages could be better tailored to meet the needs of their population.

Focus groups with female sex workers and men who have sex with men. Separate focus groups with FSW and MSM, lasting up to 90 minutes each, were organized to understand the social and structural context experienced by FSW and MSM, to determine HIV prevention access and needs of the two communities and to identify ways in which interventions and services can be tailored to meet the specific needs of FSW and MSM. Focus group participants were also asked to discuss some of the themes brought out in the in-depth interviews. Up to three focus groups per population per city with up to 10 individuals per group were undertaken. Focus groups took place in a local study site office, partner organization office, or other private and secure location.

Inclusion criteria and ethical considerations. Participants in the qualitative research had to meet the same eligibility criteria listed above for participants in the quantitative research. Participants were compensated for their time based on the cost of return transportation and a meal (2,500 CFA/5 USD), and some were offered condoms and condom compatible lubricant if they were not already available at that venue. All interviews and focus groups took place in a language (French or English) of the participant's choice. Interviews and focus groups were conducted by staff fluent in English or French, or bilingual, who were trained in working with FSW and MSM. Interviews and focus groups were audio recorded, transcribed, and translated for analysis. Before the start of each interview or focus group, interviewers explained the study and obtained written informed consent. No personal identifying

information was associated with qualitative data. Job titles of key informants were not recorded in such a way that individuals could be identified. Interviews were audio recorded (with the consent of participants), transcribed and translated into English. Participants were requested not to provide their real names, their partners' names, or names of any other individuals during the course of any interview or focus group discussion. Venue names were assigned a code, and this code was used rather than the venue name in transcripts. After transcription, a study team member performed a second review to ensure that any mistakenly transcribed individual or venue name was redacted before sharing the transcripts with other study staff members and partners.

Analysis. The study team developed a codebook working together until they reached agreement on a set of codes. Codes were based on topics of interest and additional themes that emerged from the transcripts. Codes were then applied to a sample of the transcripts by using a semi-automated process aided by Word Macros. This process allowed coded text to be extracted for further analysis. The study team read these texts to identify themes. The key themes were developed into the findings presented here.

RESULTS

Burkina Faso

Men who have sex with men results: Quantitative

Population size estimate.

Burkina Faso 2013 MSM Population Size Estimates:

Population	Burkina Population Proportion % [95%CI]	Burkina National Population Size Aged 15-49 [95%CI]	Burkina Urban Areas Population Size Aged 15-49 [95%CI]
MSM	1.00 [0.88-1.12]	34,060 [30,018-38,102]	8,806 [7,761-9,851]
Burkina 2013 total population projection			
Male aged 15-49		3,404,161	880,144

95% CI95% CI

Socio-demographic profile. In Ouagadougou and Bobo-Dioulasso a total of 673 were recruited through the R2P study in Burkina Faso with 340 and 329 sampled in the respective cities. The MSM participants in Burkina Faso were generally young, with 44.0% in Ouagadougou and 44.7% in Bobo-Dioulasso between 21 and 24 years of age, and 38.9% (132/339) in Ouagadougou and 30.1% (99/329) in Bobo-Dioulasso between 18 and 21 years (**Table 3**, p. 115). The majority were born in Burkina Faso (82.6% in Ouagadougou and 83.6% in Bobo-Dioulasso), with the second largest country of origin being Cote d'Ivoire (13.6% and 12.2%). Most individuals had some secondary school (71.1% Ouagadougou, 61.4% Bobo-Dioulasso), with another 21.3% in Ouagadougou and 24.3% in Bobo-Dioulasso reporting completing secondary school or higher. The populations sampled were mainly students in Ouagadougou (71.4%), with a slightly lower percentage of students in Bobo-Dioulasso (54.4%). Others reported being self-employed, employed by public or private sector, unemployed, working in the informal sector and other. The vast majority was single/never married in Ouagadougou (94.6%) and Bobo-Dioulasso (96.3%). When asked sexual orientation, 51.3% and 55.9% in Ouagadougou and Bobo-Dioulasso, respectively, identified as gay or homosexual with another 44.0% and 39.2% identifying as bisexual. Transgender identity was reported by 2.7% in Ouagadougou and 0.9% in Bobo-Dioulasso.

Human rights violations. In Ouagadougou 14.8% and in Bobo-Dioulasso 15.6% of participants reported ever being forced to have sex; however, of individuals living with HIV, 43.8% in Ouagadougou and 20.0% in Bobo-Dioulasso reported ever being forced to have sex (**Table 4,** p. 118). Regarding health services, 40.4% in Ouagadougou and 23.7% in Bobo-Dioulasso reported fear of accessing health services; however, interestingly, only 25.0% of individuals living with HIV in Ouagadougou and 25.0% in Bobo-Dioulasso reported the fear. Very few participants reported having been denied healthcare (1.5% in Ouagadougou, 0.9% in Bobo-Dioulasso), though 36.0% and 20.1% reported avoiding the health system in Ouagadougou and Bobo-Dioulasso respectively. Verbal harassment was highly reported (34.8% in

Ouagadougou and 44.8% in Bobo—Dioulasso) with about a quarter and a half of participants in Ouagadougou and Bobo-Dioulasso reporting being physically aggressed (24.2% and 42.3%, respectively).

Condom negotiation. **Table 5** (p. 120) provides details of the condom negotiation results for MSM in Burkina Faso. MSM in Burkina Faso did not report condom negotiation with male partners to be difficult, with only 16.9% in Ouagadougou and 7.8% in Bobo-Dioulasso indicating it was somewhat or very difficult to insist on condom use with their main male partner; though this percentage went up with casual male partners (26.6% in Ouagadougou and 8.4% in Bobo-Dioulasso). Participants in Ouagadougou reported more difficulty with condom negotiation with a male partner when the receptive partner (18.1%) compared to participants in Bobo-Dioulasso (6.3%), and 18.9% in Ouagadougou with a male partner when the insertive partner compared to 4.8% in Bobo-Dioulasso. In regards to condom negotiation with female sexual partners, 10.6% reported difficulty in negotiating condoms with their main female partner and 11.2% with casual female sexual partners in Ouagadougou compared to 5.7% for main female sexual partners and 3.0% among casual female sexual partners in Bobo-Dioulasso.

HIV and STI outcomes. HIV prevalence was found to be 4.7% (16/339) in Ouagadougou, though adjusted RDS proportion showed a 2.8% (95% CI: 1.4-5.6) prevalence (**Table 6**, p. 121). In Bobo-Dioulasso, non-RDS adjusted estimates indicated 4.9% prevalence among the sample, with RDS adjusted prevalence 3.7% (95% CI: 1.9-7.0). **Table 6** provides a summary of HIV and STI outcomes in Burkina for MSM. In Ouagadougou, a substantial portion of the population had never been tested (24.8%) or only tested once for HIV (23.3%), which was similar in Bobo-Dioulasso (23.5% never been tested, 21.4% tested only once). Of the individuals living with HIV, 41.8% in Ouagadougou compared to 20.0% in Bobo-Dioulasso had previously been diagnosed with HIV. About one-fifth of individuals living with HIV also reported experiencing symptoms of STIs in the past 12 months in Ouagadougou (18.8%) compared to 6.3% of those living with HIV in Bobo-Dioulasso, and more often than those living without HIV (6.5% in Ouagadougou and 7.0% in Bobo-Dioulasso).

Sexual behaviors and drug use. Roughly half of the MSM participants in Ouagadougou and Bobo-Dioulasso reported having both a male and female sexual partner in the past 12 months (45.6% and 46.3%, respectively; **Table 7**, p. 122). In Ouagadougou, 68.9% of participants reported two or more sexual male partners and 33.2% reported two or more female sexual partners. In Bobo-Dioulasso, 60.4% reported two or more male sexual partners and 20.6% reported two or more female sexual partners. Condom use at last sex was highly reported in Ouagadougou with 81.3% with main male partners, 87.3% with casual male partners, 76.7% with main female partners, and 90.9% with casual female partners. In Bobo-Dioulasso, 71.3% of participants indicated condom use at last sex with a main male sexual partner and 85.3% at last sex with a casual male sexual partner. Consistent condom use with main partners was reported less than with casual partners, with 51.3% of participants reporting always using condoms with main male partners and 50.0% with their main female partners in Ouagadougou, compared to 70.1% and 75.5% with casual male and female partners, respectively. In Bobo-Dioulasso, 51.6% of participants reported always using condoms with main male partners compared to 61.1% consistent condom use with casual male partners. Drug use was limited, with 98.2% in Ouagadougou and 99.1% in Bobo-

Dioulasso reporting no injection drug use in the past 12 months, though 21.8% in Ouagadougou and 19.8% in Bobo-Dioulasso reported non-injectable drug use in the past 12 months.

Knowledge of HIV risks. The populations sampled in both Ouagadougou and Bobo-Dioulasso showed limited knowledge of HIV-related knowledge and prevention methods (**Table 8**, p. 124). Only 11.6% of Ouagadougou participants knew anal sex carried the highest risk of HIV acquisition compared to 22.8% of participants in Bobo-Dioulasso. Concurrently, of the individuals living with HIV, only 20.0% answered this question correctly in Ouagadougou, and no participants knew anal sex was the riskiest type of sex in Bobo-Dioulasso. The participants were more knowledgeable regarding lubricant and condom use: 52.0% of participants in Ouagadougou and 53.8% in Bobo-Dioulasso knew water-based lubricant was the safest type of lubricant with latex condoms. More participants reported receiving information regarding prevention of HIV among men and women (85.8% in Ouagadougou and 62.0% in Bobo-Dioulasso) compared to HIV prevention information for men (48.8% in Ouagadougou and 44.1% in Bobo-Dioulasso).

Social networks. Social support among MSM in Burkina Faso was high, with 54.1% and 67.6% in Ouagadougou and Bobo-Dioulasso reporting the ability to count on other MSM to borrow money, 57.9% and 75.7% can count on another MSM to accompany them to a doctor or hospital, and 77.0% and 83.4% reported being able to talk to another MSM about problems (**Table 9**, p. 126). Of the participants, 51.7% and 48.6% reported being able to trust the majority of MSM they knew in Ouagadougou and Bobo-Dioulasso, respectively.

Men who have sex with men results: Qualitative

Characteristics of participants. A total of 20 men (13 in Ouagadougou and 7 in Bobo-Dioulasso) participated in in-depth individual interviews. On average, participants were 26 years old (range: 19 to 38 years old). Three of the participants were currently residing with their female partner and children. Nine of the participants had a college-level education, and nine others had a high school level education. For those who prematurely stopped their education, the main reason for stopping was entry into a job that did not allow for time to study. Eighteen of the participants were living with at least one of their family members. Fourteen of these men reported being attracted to only men compared to six who reported being attracted to both men and women. A majority of participants cited feelings of attraction toward other males that started in adolescent years. However, many of them repressed those feelings until they met another MSM. Two participants identified as bisexual, and others identified as homosexual, gay, gay versatile, MSM, or passive MSM.

Local concepts. Different labels are used in the MSM community to identify themselves. Study participants listed the following Ouagadougou terms: "plugged in", "gay", "CP" (meaning girlfriend), "fish", "chica", "onion", "zaa", " bee" and "GORDJIGUÊ". The term "crazy" is used to designate those who like to be open/public, and "yoshi " is used to designate those who do not like to be open/public

(i.e., those who identify as active and male). The term "woobi" is used to describe feminine MSM (i.e., those who identify as passive or female). Some Bobo-Dioulasso terms included "vampires", "sorcerer", "telecel", "djaba" (meaning onion), "fish", and "CP" (meaning girlfriend).

Participant perceptions regarding homosexuality in Burkina Faso. Participants find that MSM exist in all cities of Burkina Faso, but the majority of them are living in Ouagadougou and Bobo-Dioulasso. Most of them live in precarious situations, hiding their MSM identity due to stigma; homosexuality is considered "taboo, "against nature", "a deviation", "an abomination" or "a curse". Despite this, some MSM have disclosed their identity to their families.

According to the participants, there are three main categories of MSM based on roles and/or practices: the traditional male role only ("active"), the traditional female roleonly ("passive"), and the role of both man and woman (bi, bisexual, versatile, etc.). Participants believe that there are more passive MSM than active in Burkina Faso.

MSM Meeting Places in Burkina Faso. The stigmatized and hidden nature of MSM identity limits where MSM meet. MSM cited that they feel safe meeting on the internet, at underground nightclubs, or at support groups for MSM. Beyond these public meeting places, MSM often meet at parties organized in private homes of MSM.

Family situation/relationships. Four participants reported that their families are aware of their sexual practices, which has changed the nature of their relationships. One participant remarked,

> There are some people who do not speak to you anymore….sometimes we eat together using the same plate. There are others who take their own dish and say that one shouldn't eat together because if you eat with these people… it's not good. It's not good to live under the same roof. Well, I've heard it all! Actually I found out that it was going to be really complicated (MSM, Bobo-Dioulasso).

Other MSM speak little of their homosexuality, especially with their heterosexual friends. In terms of male-female relationships, bisexual men may be involved with women and get married to women. However, for those who are not bisexual, many MSM are forced into marriage with women due to societal and familial pressure.

Psychological experience

MSM reported feelings of poor self-acceptance:

> One MSM told me yes, when he began to feel, he felt bad, bad, bad and also felt lonely because he didn't know who to talk to since he didn't know if there were other people like this, like him… but still he has two girlfriends… he said he did everything and even those who attempted suicide in these cases… there's society… religion… all these things that say that you are a contradiction and that you are bad (MSM, Ouagadougou).

Social experience. MSM experience difficulties both within their families and in society in general. A general fear of rejection is prevalent, and both physical and verbal attacks are frequent. MSM experience feelings of isolation and social exclusion. They spoke about the feeling of not being treated like a human being and of always feeling left out. One participant opined,

> They (MSM) are not accepted because there are places where people realize that you are MSM, and so you are not let in there. You are not let in and then also there is the issue that you are always sidelined. In many activities, you're always left out: it happens in family situations, it happens in society (MSM, Ouagadougou).

In the community, they experience discrimination in the work place as well as verbal and physical attacks. One MSM shared the derogatory terms like "fag" and "queer" that are often targeted towards him on the streets. Consequences of social/familial discrimination included depression, suicide, and self-exile.

Prevention and treatment of HIV. In Bobo-Dioulasso, the primary service providers most often cited by the MSM are the community-based organizations including: REVS +, the YEELEN project, EV and Alternative Burkina. Services include peer educator community education, distribution of lubricants and condoms, free HIV testing, support groups, and medical treatment of HIV, and other related services such as counseling. In Ouagadougou, primary service providers are ASA AIDSETI, SOS ALAVI, and Positive Life. Services include support groups, distribution of condoms and lubricants, mental health services, medical treatment of STIs, HIV, and hepatitis, and recreational activities. Although the MSM appreciate the services, some opt not to receive them due to confidentiality issues.

Barriers to services. Main barriers to services cited by participants included confidentiality concerns, discrimination by service providers, an inadequate number of medical staff, and geographic distance to services. One participant noted, "… there are some behavior in those centers that are not good… an MSM can come and he can have a normal appearance, but if he is effeminate, then there will be a reaction [from the staff]" (MSM, Bobo-Dioulasso). Another participant echoed this point,

> … you go the hospital and it is complicated because some people know certain conditions are ones that only MSM develop. So when you come in and you're in front of a doctor who is close-minded and he sees that you have an MSM-related disease, he may treat you however he wants to (MSM, Ouagadougou).

Needs expressed by MSM. MSM expressed a need for more affordable, confidential and MSM-specific services as well as more mental health services. The desire for MSM-specific services was tied to the concern for greater privacy.

Perceptions regarding Burkina laws on homosexuality. Participants agreed that there is no law that either prohibits or protects homosexuality in Burkina Faso and used the term "legal vacuum" to describe the legal context of MSM. The consequences of this legal vacuum are both positive and negative. In

terms of negative consequences, MSM feel they have no recourse when they are mistreated because of their sexual orientation. In addition, they are not taken seriously when there is conflict (e.g., theft) within the MSM community; police often discredit their concerns by saying that these are "MSM problems". Heterosexual MSM, in contrast, are treated with more fairness in legal matters; according to participants, heterosexual MSM have been arrested for committing illegal acts, not due to their sexual orientation.

Participants were aware that Burkina Faso law does not authorize marriage between members of the same sex, but many said that gay marriage law was not their primary concern. Participants seemed to have concerns around more fundamental issues such as the general acceptance of homosexuality (e.g. that homosexuality is not a choice and that two men can love each other). They are pessimistic about the adoption of a law in Burkina Faso due to the established traditions and religion.

Female sex worker results: Quantitative

Population size estimate.

Burkina Faso 2013 FSW Population Size Estimates:

Population	Burkina Population Proportion % [95%CI]	Burkina National Population Size Aged 15-49 [95%CI]	Burkina Urban Areas Population Size Aged 15-49 [95%CI]
FSW	1.17 [0.67-1.67]	47,873 [27,431-68,314]	10,876 [6,232-15,520]
Burkina 2013 total population projection			
Female aged 15-49		4,089,191	928,993

95% CI95% CI

Socio-demographic profile. The socio-demographics of FSW in Burkina Faso are detailed in **Table 10** (p. 127). The participants in Ouagadougou were generally younger than the participants in Bobo-Dioulasso, with 24.6% under 21 years and 33.5% between 21 and 24 years of age in Ouagadougou, compared to 10.3% under 21 and 18.6% between 21 and 24 years in Bobo-Dioulasso. Burkina Faso was the country of origin for the majority of participants (71.1% in Ouagadougou and 82.3% in Bobo-Dioulasso), though in Ouagadougou 13.8% were born in Cote d'Ivoire and 8.0% were of Nigerian origin. In Ouagadougou the participants had a higher level of education compared to Bobo-Dioulasso, with 34.5% reporting some secondary school compared to 15.7% in Bobo-Dioulasso, and 46.1% reporting no school in Bobo-Dioulasso compared to 23.8% in Ouagadougou. FSW in Burkina Faso reported secondary employment other than sex work, with 20.2% of participants in Ouagadougou indicating secondary work in the informal sector compared to 3.7% in Bobo-Dioulasso. Women in Ouagadougou were less likely to be married, with 62.8% never married/single, 8.3% cohabitating, 1.1% married, 25.2% divorced/separate, and 2.3% widowed compared to 44.6% never married/single, 8.0% cohabitating, 4.3% married, 34.8%

divorced/separated and 9.1% widowed in Bobo-Dioulasso. Only 16.3% in Ouagadougou and 22.3% in Bobo-Dioulasso of participants had disclosed their occupation to their family.

Human rights violations. The FSW participants in Burkina Faso reported substantial experiences with sexual violence, with 42.0% in Ouagadougou and 39.7% in Bobo-Dioulasso reporting being forced to have sex at least once (**Table 11**, p.130). Discrimination by family members was reported by roughly one-third of the population (33.5% in Ouagadougou and 30.4% in Bobo-Dioulasso). Fear of seeking health services was reported by 21.0% and 14.9% of participants in Ouagadougou and Bobo-Dioulasso, respectively, and 15.5% and 9.2% reported avoiding health services in the respective cities. The majority of participants did not experience being denied police protection (18.4% in Ouagadougou and 16.4% in Bobo-Dioulasso), however 28.9% in Ouagadougou and 48.4% in Bobo-Dioulasso reported being harassed or intimidated by the police. In Ouagadougou 63.6% and 55.4% in Bobo-Dioulasso reported bring verbally harassed, and 72.4% in Ouagadougou and 51.4% in Bobo-Dioulasso reported being physically aggressed. A high number of participants reported ever being tortured in each city, with more than half of the participants in Bobo-Dioulasso reporting this experience (30.6% in Ouagadougou and 58.3% in Bobo-Dioulasso).

Condom negotiation. Condom negotiation was reported to be somewhat or very difficult with new clients by 10.6% and 13.8% of the participants in Ouagadougou, and 10.4% and 16.2% of participants in Bobo-Dioulasso (**Table 12**, p.132). Condom negotiation with regular clients was reported at similar difficulty (very difficult and somewhat difficult in Ouagadougou 7.5% and 14.7%, and 5.8% and 19.0% in Bobo-Dioulasso). However, 19.5% and 24.1% participants in Ouagadougou and Bobo-Dioulasso, respectively, reported condom negotiation with non-paying partners to be very difficult, and another 19.2% and 30.3% in Ouagadougou and Bobo-Dioulasso reported condom negotiation somewhat difficult.

HIV, STI and reproductive health outcomes. HIV prevalence in Burkina Faso among FSW was found to be 8.9% in Ouagadougou and 32.9% in Bobo-Dioulasso (**Table 13**, p. 133). Adjusted RDS estimates indicate 14.4% prevalence (95% CI: 7.9-24.6) in Ouagadougou and 32.7% (95% CI: 26.6-39.4) in Bobo-Dioulasso. In Ouagadougou 4.3% of the participants tested positive for active syphilis compared to 11.4% of participants in Bobo-Dioulasso. Of the participants in Ouagadougou 18.7% had never been tested for HIV compared to 10.9% in Bobo-Dioulasso. Of individuals living with HIV 48.4% in Ouagadougou and 65.2% in Bobo-Dioulasso had been tested more than once for HIV, and 36.4% in Ouagadougou and 64.4% in Bobo-Dioulasso had been previously diagnosed with HIV. Half of the participants in Burkina Faso reported symptoms of an STI in the past 12 months (49.4% in Ouagadougou and 52.2% in Bobo-Dioulasso).

The majority of both populations had biological children (69.3% in Ouagadougou and 85.0% in Bobo-Dioulasso). Half of the participants in Ouagadougou (50.4%) and a third of the participants in Bobo-Dioulasso (34.0%) reported having had an unwanted/unplanned pregnancy. Abortion was reported by 36.7% of participants in Ouagadougou and 26.0% in Bobo-Dioulasso. A substantial number of

participants in both cities indicated it was important for them to avoid pregnancy (75.1% in Ouagadougou and 84.5% in Bobo-Dioulasso).

Sexual behaviors and drug use. Condom use with regular and new clients was high in both cities (89.1% in Ouagadougou and 91.4% in Bobo-Dioulasso used a condom at last sexual act with a new client), however condom use during the last vaginal or anal sex with non-paying partners in the past 30 days was reported only by 36.5% and 33.5% of participants in Ouagadougou and Bobo-Dioulasso, respectively (**Table 14**, p. 134). About one-fifth of each population reported it was very difficult or somewhat difficult to access condoms (16.8% in Ouagadougou and 17.8% in Bobo-Dioulasso), and another 52.4% in Ouagadougou and 42.1% in Bobo-Dioulasso reported never using lubricants during sex. Very few individuals had used injectable drugs (1.7% in Ouagadougou and 0.0% in Bobo-Dioulasso).

Knowledge of HIV risks. FSW participants in Burkina Faso were aware of HIV acquisition risks, though only 24.1% in Ouagadougou and 32.9% in Bobo-Dioulasso were aware that the safest lubricant to use during vaginal sex with a condom was a water-based lubricant (**Table 15**, p. 136). HIV prevention messaging had been disseminated among the population in Burkina Faso, with 56.0% in Ouagadougou and 79.9% in Bobo-Dioulasso reporting participating in meetings related to prevention of HIV in sex work in the past 12 months.

Social networks. Social cohesion among FSW in Burkina Faso was reported, with 79.1% and 67.2% of participants in Ouagadougou and Bobo-Dioulasso, respectively, reporting being able to count on other sex workers to accompany them to the doctor; 71.8% and 58.7% reporting the ability to talk to other sex workers about problems; 79.6% and 62.3% reporting being able to count on other sex workers to find a place to stay (**Table 16**, p. 138). Interestingly, only 22.7% in Ouagadougou and 42.4% in Bobo-Dioulasso reported being able to trust other sex workers in their area.

Female sex worker results: Qualitative

General situation of FSW in Burkina Faso. FSW cited that the larger community perceives sex work as immoral. In contrast, FSW perceived sex work as a job like any other. Sex work occurs mostly underground, resulting in FSW often living in hiding and seclusion. FSW also experience discrimination and/or harassment in the form of verbal insults and difficulty obtaining formal employment.

Knowledge of laws and self-perception. FSW are aware that sex work is not illegal in Burkina Faso. However, arrests are common, so FSW operate as if sex work is prohibited. Nonetheless, they recognize that they, too, have rights in society: the right to live as other women do, freedom of speech, and the right to be respected. They understand that they face stigma as a result of their profession: “When they try to speak up, they are told to get out. You’re nothing but a whore” (FSW, Ouagadougou).

FSW financial situation. Income from sex work has declined because of increased competition, especially with the influx of foreign sex workers. The majority of their income is derived from sex work

but is often supplemented by work as a hairdresser, waitress, modeling and operating small businesses. Some receive help from boyfriends or family members, while others do not. Despite all these difficulties, many FSW are financially responsible for their children and other family members.

Disclosure of sex work. Based on the FSW-specific transcripts, many FSW who disclosed their identity or whose identity was disclosed to their families experienced rejection from the family. Sometimes this rejection led to intrafamilial conflict and forced the individual to quit the household. In other cases, the family's rejection was temporary and the individual rejoined the family household.

Organization of sex work. Participants cited the primary sites of work as brothels, the street, hotels, night clubs and private homes. The majority of participants are not involved with any organized form of sex work. However, they mentioned that foreigners such as Nigerian and Ghanaian women are often under the control of a house manager.

Entry into sex work. Many of the FSW were introduced to sex work through a friend. Procuring is common and profitable (profits range from 25% to 50% per transaction); procurers are often referred to as "managers." One participant described how Nigerian women are forced into sex work (i.e. sex trafficking):

> The [Nigerians] come work for someone and then the person pays you. If you want your freedom you have to pay the person what they paid for you over there [Nigeria] because you were sold. They told you that you came here for work, but it's not true. You didn't come for work. It was for a dirty job, but you don't have a choice. They brought you into their homes so you can go out, but you come back to pay [your income] to your manager (FSW, Ouagadougou).

Condom use. The general rule is to use male and female condoms with clients; clients are generally accepting of condom use. Lubricants are often used to prevent condom breakage. The preference was to use male condoms; FSW mentioned that female condoms are difficult to use, that they are not 100% reliable and that some clients do not like to use them. The main reasons for condom use were the fear of disease and prevention of pregnancy. Women obtain condoms by buying them at subsidized prices or getting them free through NGOs. Condoms are less consistently used with non-client partners, however. FSW are especially open to non-condom use with partners who have been tested for HIV. Forced sex is cited as another reason for non-use of condoms.

Other contraceptive methods. FSW cited the use of pills and implants for prevention of pregnancy, although these methods are less preferable compared to the condom. Reasons for condom preference included concern for the pills' expiration dates and discomfort with "anything you swallow."

Challenges with police. FSW are often arrested by the police, and once arrested they pay a fine ranging from 10,000 to 25,000 CFA and/or are imprisoned for several days. Many of them are forced to do chores for policemen while in prison or agree to have sex in exchange for release. Some participants

cited positive interaction with police, mentioning that some police advise FSW to use condoms and leave their jobs as sex workers.

Sexual violence. Some FSW cited being threatened or forced to have sex with clients against their will. Several cited experiences of sexual abuse, which happens more often with strangers rather than people they already know. They are often lured into this by people posing as clients, especially when they are returning home at late hours. Those FSW who have experienced sexual violence have not sought any assistance because they are hesitant to disclose their occupation.

HIV testing. Participants mentioned several sites where they can go for HIV testing. They have usually gone at least once to get testing. Testing fees can range from no cost/free to 3,000 CFA, depending on the site. The main obstacles to testing are travel distance, transportation costs and a fear of the results.

Prevention and treatment of HIV. FSW are generally knowledgeable about transmission and prevention of HIV. Main sources of information for FSW are support groups, health centers, and television programming. One participant talked about the importance of prevention knowledge:

> There are certain girls who don't have school and are illiterate. There are also girls who are there but don't even know that there are ways to prevent AIDS, who don't know how to use a condom, so it's really strange. There are others who don't even know that a condom exists. So [information] really helps these girls (FSW, Bobo-Dioulasso).

FSW are aware of HIV treatment services and spoke about friends who were living with HIV and receiving such services at clinics.

Relationship with health professionals. Some FSW disclosed their occupation to providers, and some did not. Those who disclosed their occupation received a wide range of responses: some providers became more engaged and offered additional services in order to address risks specific to FSW, but many others also became hostile after client disclosure.

Recommendations from FSW

- Increased counseling and educational messages:

> It's true that often it's not easy. I am sick. I prefer to only share [my status] with two or three people before dying. I don't want to die alone, but if there is advice all the time, all the time, I understand. At least, anyway, that will change them (FSW, Ouagadougou).

- Health services specifically geared towards FSW.
- Increased employment or funds that would help augment FSW income.
- Increased access to medication (e.g. with subsidies), contraceptive methods, and condoms.
- Increased access to testing and gynecological exams.

Togo

Men who have sex with men results: Quantitative

Population size estimate.

Togo 2013 MSM Population Size Estimates:

Population	Togo Population Proportion % [95%CI]	Togo National Population Size Aged 15-49 [95%CI]	Togo Urban Areas Population Size Aged 15-49 [95%CI]
MSM	1.65 [0.44-2.86]	25,019[6,677-43,361]	11,955 [3,191-20,720]
Togo 2013 total population projection			
Male aged 15-49		1,517,717	725,241

95% CI

***Socio-demographic profile*. Table 17** (p. 139) summarizes selected demographic characteristics of MSM participants. A total of 354 MSM participated in Lomé, and 329 participated in Kara (including seeds). Of these, 28.7% in Lomé and 46.8% in Kara were over 25 years old. A large majority of the participants were born in Togo (90.9% in Lomé and 97.6% in Kara), with the remainder from Ghana, Benin, Burkina Faso, Ivory Coast, Niger, Nigeria, Gabon, and Liberia. Education levels were fairly high: 60.0% in Lomé and 80.0% % in Kara completed high school or higher. Participants were overwhelmingly single, divorced, separated or widowed, with only 8.5% in Lomé and 3.0% in Kara currently married or cohabitating. When asked sexual orientation, 61.1% and 68.7 in Lomé and Kara respectively identified as gay or homosexual with another 34.9% and 31.3% identifying as bisexual. In Lomé 0.9% and in Kara 0.0% identified as heterosexual or straight. Transgender identity was reported by 1.1% in Lomé and 0.0% in Kara

Human rights violations. MSM in both Lomé and Kara were subject to stigma and human rights abuses (**Table 18**, p.142) 7.1% of MSM in Lomé and 8.2% in Kara were forced to have sex against their will at least once. In addition, a large number reported being verbally harassed (18.5% and 18.2%), blackmailed (15.6% and 21.9%), or physically aggressed (21.6% and 19.1%). Both groups had difficulty accessing healthcare (17.0% in Lomé and 7.3% in Kara).

Condom negotiation. In general, most MSM did not find it difficult to suggest using condoms (**Table 19,** p. 142). A lower percentage of MSM in Lomé reported it was difficult to suggest using condoms compared with MSM in Kara. In Lomé, the greatest proportion of MSM reported it was difficult to suggest using condoms with main male sexual partners, and the smallest proportion of MSM reported it was difficult to suggest using condoms with casual female sexual partners. In Kara, it was the reverse.

HIV and STI outcomes. As shown in **Table 20** (p. 143), 18.5% of MSM in Lomé and 0.6% in Kara were living with HIV. In addition, 1.4% in Lomé had syphilis versus only 0.6% in Kara. About half of the MSM had been tested for HIV more than once (55.9% and 47.4%) while 30.8% in Lomé and 28.3% in Kara had

never been tested at all. Fewer MSM reported symptoms of an STI in the past 12 months in Kara (6.4%) than in Lomé (9.9%). Since HIV prevalence was low in Kara, it was not possible to report the descriptive characteristics of participants living with HIV.

Sexual behaviors and drug use. As **Table 21** (p. 144) shows, 15.6% reported having both a male and female sexual partner in the past 12 months in Lomé, and 13.7% in Kara. In Lomé and Kara, respectively, 53.3% and 14.9% reported two or more sexual male partners and 10.2% and 0.9% reported two or more female sexual partners. Condom use at last sex in Lomé was reported as 73.9% with main male partners, 88.1% with casual male partners, 63.7% with main female partners, and 75.0% with casual female partners. Condom use at last sex in Kara was reported as 72.0% with main male partners, 86.2% with casual male partners, 71.4% with main female partners, and 83.8% with casual female partners. Drug use was very limited, with 98.9% in Lomé and 99.1% in Kara reporting no injection drug use in the past 12 months, though 25.1% in Lomé and 6.5% in Kara reported non-injection drug use in the past 12 months.

Knowledge of HIV risks. Most MSM knew that water-based lubricants were safest to use during anal sex (82.6% in Lomé and 52.9% in Kara, see **Table 22**, p. 146). Nearly all MSM knew that HIV was transmittable from sharing needles (96.3% in Lomé and 98.2% in Kara), while very few knew that anal sex had the highest risk of transmitting HIV (6.3% in Lomé and 8.5% in Kara) and that receptive anal sex put them at highest risk for acquiring HIV (10.6% in Lomé and 5.5% in Kara). Over 80% of MSM reported they had received HIV prevention information about sex between men (84.2% in Kara and 92.3% in Lomé), and over 90% of MSM said they received HIV prevention information about sex between men and women in the past year (97.2% in Lomé and 98.5% in Kara).

Social networks. Social support among MSM in Togo was high (**Table 23**, p. 147), with a majority in Lomé and Kara reporting they could count on other MSM to borrow money (67.8% and 78.2%), accompany them to the doctor or hospital (76.5% and 88.7%), and to talk to about problems (84.7% and 90.3%). In Lomé 32.1% said they could trust the majority of MSM they knew, and in Kara 78.7% reported this.

Men who have sex with men results: Qualitative

Characteristics of participants. Most MSM participants self-identified as gay while a few identified as bisexual. A majority of participants cited feelings of attraction toward other males that started in adolescent years. However, many repressed those feelings until they met another MSM.

Local concepts. MSM described different terms used locally to describe MSM, including both derogatory terms used by the wider community as well as terms used within the MSM community to identify themselves. These terms included: HSH, MSM, gay, and homo in both the wider and MSM communities; pédé (faggot in English) mostly in the wider community; and the terms *zangboin* and les branches within

the MSM community. One participant said, "MSM accept the term 'gay' but refuse the others" (MSM, Kara); others said the terms HSH and MSM were also acceptable within the community, but all agreed the term pédé was derogatory.

Participant perceptions regarding homosexuality in Togo. Homosexuality is heavily stigmatized in Togo, so MSM generally said they lived clandestine lives to avoid stigma, discrimination, and violence. "MSM stay hidden because the community doesn't accept them," said one participant from Kara. "They are discriminated against and violated because their behavior goes against nature." MSM were aware that homosexuality is prohibited by law, and many cited amending the laws as the first essential step to mitigating discrimination. As one participant from Lomé noted, "we must go beyond the health domain and speak about human rights."

As MSM are stigmatized and hidden, sites to meet other MSM are limited. In spite of this, participants reported they meet "most anywhere", including schools, streets, beaches, restaurants, nightclubs, bars, and on the internet, as well as at private parties in the homes of other MSM. MSM in Lomé said there were particular gay nightclubs, but MSM in Kara said there were no official gay meeting places. Many participants said that there was no perfect way of identifying other MSM, but that MSM could often identify each other by "their clothing, their mannerisms, and their speech. Clothing, it's a little different, a little tighter, a little more extravagant. And speaking, you can tell it's a little more effeminate" (MSM, Lomé). Another said, "those who are effeminate are easy to identify, while those who are not effeminate are difficult to identify" (MSM, Kara).

Participants described different categories of MSM based on sexual roles: active, passive, or both. Others described MSM as "gay, homosexual, bisexual, or heterosexual" (MSM, Lomé). Some participants from Kara felt that the MSM community in Kara was relatively small – perhaps 30 to 40 people. In Lomé, participants guessed there were between 300 and 1,000 MSM, although all estimates of community size were quite general.

MSM relationships. The context of relationships between MSM can have many forms: men described long-term partnerships, occasional, serial partners, or both. One participant described the nature of monogamous relationships this way:

> Those who are faithful do [have other partners] in the end because the commitment to the relationship is not 100%. When you are with a partner, he has thoughts of going out with other men, which means that there is no faithfulness in the relationship (MSM, Kara).

Some participants reported that many MSM live with or marry women, too, because of "societal pressures" or to avoid stigma. However, among participants there was disagreement on whether or not MSM actually do commonly marry women.

Most participants said that their attraction towards men started in their adolescent years. Of these participants, some reported that their first sexual experience was with another man. Other participants began sexual relationships with women and later switched to men.

Many participants described a financial element in relationships. Some MSM said they or other MSM entered relationships for financial support or engaged in sex work. One said, "it's true that …due to the money… I started this sexual practice, but over time, I did it because I liked it and it gave me pleasure and [was] not for the money" (MSM, Kara). Another individual described the first time he had had sex with a man was with his boss, and he then stayed in a long-term relationship with him, receiving both financial and job security. Other participants said they had partners who gave them gifts. However, many participants also said they were not in relationships for financial gain.

Family and social experience. MSM experience stigma, discrimination, and fear both within their families and in society in general. "People think of us as demons, as freaks, as sick people who have no place in society," said one participant in Lomé. In spite of this fear of discrimination and violence, MSM said they did go out in public with their sexual partners, but always masqueraded as friends, never showing any overt sexual behavior. "Men can never go out with their partners due to fear of being massacred" (MSM, Lomé).

Most MSM reported that they conceal their sexual identity from their families. One MSM from Kara captured the feelings of many when he said, "I hide my sexual identity from my family and friends out of fear of rejection, out of fear of shame from my family." MSM recalled stories of friends who were kicked out of their homes for being gay. They said verbal abuse was most common, but they feared rejection and other forms of violence from families and friends who were not gay. However, some MSM did remark they had come out to carefully selected family members, such as siblings and cousins, and these generally reported supportive reactions. Some MSM observed seeing an "evolution" over time, as slowly more MSM are becoming more open with their identity.

Several participants described intimidation and crackdowns from police. Several said they currently had MSM friends who were imprisoned due to the authorities perceiving their sexual orientation as MSM.

Prevention and treatment of HIV. Participants generally expressed good HIV knowledge, including knowledge about modes of transmission and prevention. Although all MSM were aware that condoms prevent HIV, there was significant variation in reported condom use. Most participants said that they used condoms sometimes, but many said they stopped using condoms in long-term or trusted relationships. Participants said that reasons for not using condoms included trust in partners, sex while under the influence of alcohol, the price of condoms (100 CFA), and that condoms reduce sensations during sex. Participants complained that free condoms more frequently broke or were too thick; they preferred to buy lubricated condoms. Many participants reported using lubricants during sex, either with or without condoms. Lubricants included those purchased from pharmacies or received from CBOs, as well as cocoa butter.

Participants mentioned receiving condoms and messages about HIV prevention from peer educators, the media, school, information at MSM-themed events, and community festivals.

Most participants reported having tested for HIV, often with the encouragement of a partner; one participant from Kara mentioned testing for HIV in the context of donating blood. Among the three key HIV services (prevention, testing, and treatment), one participant opined that testing was the easiest because MSM do not need to disclose their sexual orientation:

> The three services are available to MSM, but they use HIV testing the most because everyone should know his status and it's easy. The least accessible is care and treatment because one must automatically know his sexual orientation (MSM, Kara).

In Kara, one participant noted that service uptake was still limited because MSM associated an organization known as AED with HIV such that going there for services would make people wonder if they were perhaps living with HIV.

Barriers to services. Participants said that the main barriers to service use were confidentiality concerns, discrimination by service providers, an inadequate number of medical staff, and the geographic distance to services. Fear of discovering an HIV-positive status was cited as a common barrier to HIV testing.

While some MSM commented that there were MSM-friendly providers with whom MSM feel comfortable talking openly about their sexual orientation (for example, at AED in Kara), others reported hiding their sexual identity from providers due to fear of discrimination. One participant described stigma from healthcare providers in this way:

> I have never revealed my sexual identity to my healthcare providers. But if [the visit] is for an STI, they often know it, and when they know it they say, "a nice guy like this has become an MSM." They neglect MSM. They become very cold, less attentive with them (MSM, Kara).

Needs expressed by MSM. MSM expressed a need for more accessible, affordable, confidential and MSM-specific services. Participants also said medical centers generally needed more equipment and finances to provide better quality care. The desire for MSM-specific services was also tied to the concern for greater privacy.

> To improve prevention services you need more confidentiality and trustworthiness [with providers]. For MSM to use these services requires more awareness of MSM, improved quality of care and nurses. [You should] educate healthcare providers to better accommodate MSM (MSM, Kara).

Many MSM expressed a preference for MSM-specific services. Participants declared they had positive experiences with such services to date and requested more of them.

Female sex worker results: Quantitative

Population size estimate.

Togo 2013 FSW Population Size Estimates:

Population	Togo Population Proportion % [95%CI]	Togo National Population Size Aged 15-49 [95%CI]	Togo Urban Areas Population Size Aged 15-49 [95%CI]
FSW	0.82 [0.57-1.07]	13,771 [9,634-17,909]	6,326 [4,425-8,226]
Togo 2013 total population projection			
Female aged 15-49		1,677,175	770,416

95% CI

***Socio-demographic profile*. Table 24** (p. 148) summarizes selected demographic characteristics of FSW participants in Togo. A total of 354 FSW participated in Lomé and 330 participated in Kara (including seeds). Of these, 65.6% in Lomé and 45.8% in Kara were over 25 years old. A large majority of the participants were born in Togo (71.8% in Lomé and 97.6% in Kara), with the remainder from Ghana, Benin, Burkina Faso, Ivory Coast, Niger, Nigeria, Gabon, and Liberia. Education levels were low; only 4.3% in Lomé and 24.2 % in Kara completed high school or higher. Participants were overwhelmingly single, divorced, separated or widowed, with only 7.3% in Lomé and 6.1% in Kara currently married or cohabitating. Over half (51.2%) of FSW in Kara had at least one biological child, and over three quarters of FSW in Lomé (78.5%) had at least one biological child. Outside of sex work, many participants (46.3% in Lomé and 63.6% in Kara) were self-employed.

Human rights violations. As shown in **Table 25** (p. 150), FSW in both Lomé and Kara were subject to discrimination and harassment. More FSW in Kara (36.8%) had faced discrimination by family members than in Lomé (8.5%). 17.2% of FSW in Lomé and 33.3% in Kara were forced to have sex against their will at least once. Both groups were harassed or intimidated by police (29.7% in Lomé and 22.4% in Kara). In addition, a large number reported being verbally harassed (35.9% and 37.3%), blackmailed (20.6% and 36.2%), or physically aggressed (37.9% and 27.6%). About a quarter of FSW in Lomé and Kara had difficulty accessing healthcare (23.7% in Lomé and 25.8% in Kara), though a smaller percentage reported they were afraid to access healthcare (5.7% in Lomé and 10.0% in Kara).

Condom negotiation. With non-paying partners, FSW in both Lomé and Kara were more likely to report it was very difficult (21.2% and 15.4%) to insist on condom use compared to regular clients (1.1% and 8.5%) and new clients (1.4% and 12.2%) (**Table 26**, p.152).

HIV, STI, and reproductive health outcomes. As shown in **Table 27** (p. 153), 27.1% of FSW in Lomé and 10.0% in Kara were living with HIV. In addition, 2.3% in Lomé had syphilis versus only 0.9% in Kara. More than half of the FSW had been tested for HIV more than once (58.6% and 56.1%) while 25.7% in Lomé

and 17.6% in Kara had never been tested at all. About a quarter of FSW in Lomé reported symptoms of an STI in the past 12 months (27.1%), while about a third reported this in Kara (33.9%).

About half of FSW in both cities reported having an unwanted or unplanned pregnancy (52.1% and 45.9%) and 33.6% in Lomé and 42.4% in Kara had had an abortion. A majority in both cities reported it was important to avoid getting pregnant at that time (68.4% in Lomé and 74.8% in Kara).

Sexual behaviors and drug use. **Table 28** (p. 154) illustrates selected sexual behaviors and drug use among FSW in Togo. In Lomé, more than 90% of FSW reported using a condom at the last vaginal or anal sex with new (95.5%) or regular clients (93.7%), while this percentage was dramatically reduced with non-paying partners (26.4%). A similar trend was seen in Kara with more than 80% of FSW using condoms with regular (82.6%) or new clients (86.3%), and significantly less with non-paying partners (57.8%). Only 48.2% of FSW in Lomé had been tested for an STI in the past 12 months and 20.9% in Kara. If lubricants were used during sexual intercourse, water-based lubricants (76.8% in Lomé and 65.7% in Kara) were used most often with condoms (63.3% in Lomé and 21.0% in Kara). Less than 2% of FSW reported injecting drugs for recreational use (1.1% in Lomé and 1.2% in Kara).

Knowledge of HIV risks. Most FSW knew that water-based lubricants were safest to use during vaginal sex (61.1% in Lomé and 44.1% in Kara) or anal sex (71.1% in Lomé and 30.4% in Kara) (**Table 29**, p. 156). Nearly all FSW knew that HIV was transmittable from sharing needles (98.6% in Lomé and 97.9% in Kara), while very few knew that anal sex had the highest risk of transmitting HIV (2.3% in Lomé and 1.2% in Kara).

Social networks. As **Table 30** (p. 157) shows, while more than 50% of FSW in both Lomé and Kara reported being able to rely on other FSW to accompany them to the doctor (68.0% and 76.9%), talk about their problems (65.5% and 79.4%), or help them find other clients (54.8% and 75.8%), few reported that they could trust the other sex workers in their areas (22.0% in Lomé and 40.6% in Kara).

Female sex worker results: Qualitative

Context of sex work. In the interviews analyzed, participants ranged from age 19 to 44 years, yet indicated there were plenty of older women (50+ years) and minors (13 to 15 years) working in the industry as well. FSW reported working in “maisons closes” (brothels in English), bars, hotels, nightclubs, informal parties, gatherings or community celebrations.

FSW were locally based or mobile, sometimes migrating in and out of their small country’s borders. Women in Kara said they had an average of three to five clients per night, whereas women in a Lomé brothel reported approximately eight clients per night. The actual volume of sex work, the women observed, would also vary weekly and seasonally. Professional clients are more abundant at the end or beginning of a month when they typically get paid. Holiday periods and local celebrations (such as the

Evala festival in Kara) were cited as the busiest seasons. Clients include local regular customers, foreign regular customers, students, travellers, tradesmen and local officials.

Participants reported the context of sex work ranging from highly organized to highly informal. Some FSW claim that no one else manages their work, while others mention "pimps," "mamans," or a "house leader" that help to direct sex work in hotels and hostels.

> We have a house leader ("une responsible de la maison") who styles all the ladies and an office with three members to resolve conflicts and make decisions. In the brothel no one manages sex work […] we (SW) work in rotation; each one of us can take up to six clients. If a lady doesn't find any clients, we give her some money. There's no rivalry between us. We have confidence in our work plan (FSW, Lomé).

Other FSW bond via an informal group of work friends, or FSW who work together with mutual respect. To this extent, they refer clients who have certain preferences to other colleagues and offer financial help to each other in times of need. Rivalry does exist in certain groups of FSW and is reportedly more common during times when clients are scarce. To a lesser degree, bar and hotel owners are implicated in sex work through their venues, sometimes providing FSW's photos and phone numbers to guests in hotels.

Identity, perceptions and relationships among FSW. In terms of professional identity, participants indicated that the term "professionelle du sexe" ("sex professional") was acceptable to a majority of FSW, as it reflects "a profession, not a crime." "Une Femme libre" ("a free woman") was another cited, acceptable term.

FSW typically cited periodic financial need as the main reason for entering the profession. Often it was a friend or relative who introduced them to the woman's first client. Although many FSW were hesitant about the trade and still find it to be "shameful work," several affirmed that they had to put aside these reservations in order to meet their basic financial needs.

> Previously, I found this work evil because it is not a good thing to engage [in sex with] men at any price, it is a lack of self-respect, as you sleep with the elderly and minors for money…I know it is not good, but I keep doing it […] for lack of money and having to cover my huge expenses (FSW, Kara).

Financial and legal challenges. Participants were strongly aware that sex work is illegal in Togo, and several reported being arrested on multiple occasions. Bail was reported as between 5,000 and 10,000 CFA. Those who had not been arrested for sex work could almost always cite a friend or an acquaintance who had been. Police also confiscate condoms found in FSW's possession and use them as evidence for making an arrest. Related to their desire for a professional identity, participants also expressed how legal reform would not only prevent them from getting arrested, but also would allow them to file charges against clients who sexually assaulted them.

In all of the transcripts analyzed, participants reported engaging in sex work as a response to economic hardship. Some had tried to support themselves through other forms of petty commerce without success. FSW described being financially responsible for other family members, including parents, siblings, their own children or other children in their care. Others, typically students, said that another family member financially supported them. However, this support was not enough to cover the women's basic needs. Participants called for expanded economic opportunities for women, especially young women, as a welcome alternative to sex work.

Stigma and violence. FSW claimed they are "not received well in the general population" and are subject to insults from their communities. As one described, "People throw stones at our roofs. They discriminate against us. They don't like us being in their neighborhood. They say that we will train our children in the trade" (FSW, Lomé). Another FSW said it is married women that offer the most insults and hatred, as "it is because of us that their husbands do not stay home!" FSW also feel stigmatized through the media, especially religiously-affiliated ones, and that many community members perceive that all FSW must be living with HIV.

FSW participants also offered stories about being mistreated by clients. Certain clients refuse to pay when they are not satisfied, or take their money back by force when finished. Others will pay for one sexual encounter, but then rape in a second or third act. Others refuse to use condoms by means of force. Clients' mistreatment of FSW not only results in devastating physical and economic effects, but also psychological ones as well:

> This life is not easy because the guy comes, you give him everything, your dignity, your access to everything, to satisfy his whims. But he does not even give you what you asked for (FSW, Kara).

HIV prevention. Knowledge and use regarding condoms was high among the FSW interviewed in Togo. FSW in both Lomé and Kara reported increased awareness of male and female condoms as a means of HIV prevention through radio, television, community sensitizations, and voluntary counseling and testing. Many participants declared a strict condom policy for their work: "The condom is not negotiable. It's the condom or nothing." However, some of these women admitted to not using condoms with boyfriends/non-paying partners.

Further, participants also cite breakage or lack of condom access as barriers to consistent condom use. Though some NGOs give free condoms, the supply is often inconsistent, and the condoms are rarely lubricated. Cost of lubricated condoms was often cited as a burden, and increased access to lubricated condoms was FSW's major request in Togo.

HIV testing and treatment. Participants' satisfaction with access to services varied. Some participants recounted good treatment with trusted providers to whom they had previously disclosed their profession. On the other hand, others reported being reprimanded by health workers as a result of their profession. Even in sites where quality healthcare is available, barriers to access still exist, including fear of testing, inability to pay clinic fees, and transportation. In sum, FSW's suggested recommendations

include increase in comprehensive services, preferring one location where they can access psychological, reproductive health, HIV prevention, testing and treatment services.

Cameroon

Tables 31, 32 and **33** (p. 158-159) summarize the data collected by target population and by city and the numbers of unique objects distributed.

Triangulation

Numerous studies and data sources covering KP were obtained from government partners, NGOs and associations. One study provided estimates of SW populations in cities in Cameroon based on mapping and key informants. For MSM two studies presented HIV serology among MSM in Cameroon (Tamoufe & Medang, 2009; CARE, 2012). A number of other studies (for which datasets were not obtained) collected statistics on clinic or outreach-based HIV testing by NGO and associations. Among FSW a series of studies and data were available (**Table 34**, p. 160) showing a growing understanding of prevalence from localized studies to two national seroprevalence studies (Mosoko et al., 2004; Tamoufe & Medang, 2009). Behavioral data also exists, in combination with serological data (FSW: Tamoufe & Medang, 2009; CARE, 2012) and standalone behavioral data (e.g., for FSW a study by WOPA and JHU in Kribi and ACMS and CAMNAFAW studies and among MSM studies and datasets collected by ACMS and CAMNAFAW). A specific study on stigmatization of vulnerable groups (including MSM and FSW) was also undertaken in Yaoundé and Douala (FISS-MST/SIDA, 2009). **Table 34** presents a list of these datasets and reports which were used to contextualize the results obtained in the present study. Where interesting similarities or differences were obtained they are referred to in the text of this document.

Men who have sex with men results: Quantitative

Population size estimate.

Cameroon 2013 MSM Population Size Estimates:

Population	Cameroon Population Proportion % [95%CI]	Cameroon National Population Size Aged 15-49 [95%CI]	Cameroon Urban Areas Population Size Aged 15-49 [95%CI]
MSM	1.38 [0.51-2.25]	66,842 [24,645-108,729]	28,598 [10,544-46,519]
Cameroon 2013 total population INS projection aged 15-49			
Male 15-49		4,832,380	2,067,520

95% CI

Socio-demographic profile. Ages of MSM sampled during this study varied from 18 to 65 (**Table 35**, p. 162). The highest proportions occurred in the age brackets 21 to 24 or 25 to 29 in all cities and declined in the 30 to 34 and 35 and older brackets except in Bafoussam where 20.2% of participants were 35 and

over. Compared to other cities, the community partner in Bafoussam that assisted with identification and recruitment of MSM participants places additional emphasis in working with this older, more hidden part of the MSM community, which may explain this higher proportion. Additionally, compared to previous studies on MSM, higher proportions of individuals were detected in older age groups (e.g., among MSM over 30 years old in Yaoundé 14.28% in this study versus 11.2% in CARE (2012) and Douala 21.2% versus 11.8%).

92.3% of participants reported living in the city where they were sampled for more than three months. This ranged from 82.8% in Bertoua to 98.5% in Yaoundé.

The population was well educated with 35.9% of participants reporting university or professional training; this ranged from 20.4% in Kribi to 42.5% in both Yaoundé and Bafoussam. Employment patterns were similar across cities; 12.8% of all participants indicated they were unemployed, 37.1% students and 50.1% in some kind of employment. A significant proportion of the population (87.2%) indicated they were employed or students.

While most MSM participants (90.8%) were not married, 56.9% of participants had at least one regular female sexual partner. Similarly, 62.5% identified as bisexual and 36.9% of participants identified as being gay or homosexual. Just 13.8% (n=217) of participants reported no regular male partners, and 37.7% (n=590) reported multiple concurrent male partners. Also of relevance, 21.1% (116/551) of MSM identifying as gay or homosexual also reported one or more regular female sexual partners. No participants reported they identify as transgender except in Douala where 2.0% reported this identity. Reported heterosexual or straight sexual orientation ranged from 0.0% in Douala, Bafoussam, Bamenda, Bertoua, and Kribi to 1.1% in Yaoundé. The lowest percentage of MSM participants reporting they were bisexual was in Kribi (49.5%), while the highest percentage was in Bertoua (75.0%). In Bertoua, the lowest percentage of MSM participants reported they were gay or homosexual (25.0%), while in Ngaoundere the highest percentage reported this sexual orientation (44.6%). These high levels of bisexual practices reinforce the importance of this community to prevention and treatment efforts to decrease transmission both within this population and transmission to the general population.

32.8% of participants reported that at least one family member knows that they have sex with other men. This varied by city with the lowest percentage in Bafoussam (19.4%) and the highest in Douala (48.2%). 25.8% of participants had revealed their sexual orientation to a doctor or nurse; this varied from 11.3% in Bertoua to 37.1% in Douala. The cities with no specialized clinical services for MSM were the cities with the lowest levels of disclosure to medical personnel (Bafoussam 23.1%, Bamenda 25.7%, Bertoua 11.3% and Ngaoundere 23.0%).

11.3% (180/1588) of MSM reported exchanging or receiving money for sex in an exchange within the past 4 weeks, and 11.8% (187/1588) in the past 12 months. Douala, Ngaoundere and Kribi all had high levels of sex work reporting with 37.8%, 36.5% and 34.8% of participants, respectively, reporting sex work in the past 12 months. While these data do not indicate if this exchange was between men or women, further research into the specific vulnerability of male sex workers in Cameroon is warranted as

the disproportionate burden of disease in this sub-population has been cited in other countries (Vuylsteke et al., 2012).

Condom and lubricant use. As **Table 36** (p. 165) shows, 33.1% of participants who had engaged in vaginal sex in the past month and 53.3% of those who had engaged in anal sex in the past month had consistently used male condoms. 65.6% of participants indicated they received condoms for free (40% reported receiving from peer educators and 19.6% from drop-in centers), and 69.9% reported purchasing condoms (58.3% from shops and 31.7% from pharmacies and only 5.5% from street sellers).

Use of lubricant was reported by 83% of participants, though this varied from 69.4% in Ngaoundere, where no MSM CBO was operating up to 2013, to 94.8% in Douala where a number of well-established MSM CBOs operate. Of those who had used lubricants, 79.2% (1,048/1,324) indicated using some kind of commercial sexual lubricant (as opposed to using an alternative product not specifically designed to be used as a sexual lubricant such as body lotions, oils etc.). This varied from 60.9% in Kribi to 95.5% in Bamenda. 38.2% of participants felt that lubricants were easy to find; however, the lowest levels were recorded in Bamenda with only 4.5% reported them easy to find.

HIV-related history. As shown in **Table 37** (p. 166), 10.5% of participants indicated they did not know their HIV status either because they have never been tested (8.4%) or because they had never received their results (2.1%). Non-knowledge of status varied from 3.7% in Bertoua to 16.7% in Ngaoundere. Of those reporting they were not living with HIV 82.5% reported having been tested in the past 12 months.

7.0% of participants reported they were living with HIV, varying from 0.0% in both Bamenda and Bertoua to 18.0% in Douala. For Yaoundé and Douala when comparing the self-reported prevalence estimates (6.2%, 18.0%) and the biological estimates of prevalence which exist for these cities (44.3%, 24.2%) the self-reported estimates are significantly lower. Such differences have been noted in other studies with MSM (Pedrana et al., 2012).

75.0% of individuals reporting they were living with HIV were on treatment, and 78.9% of those on treatment were receiving it from a hospital or pharmacy; the others were receiving treatment from traditional doctors. Of those not being treated 73.9% had received CD4 count results, however 45.5% had been informed they need treatment.

Over half of MSM living with HIV never disclosed their serostatus to partners, 17.6% always revealed and 26.4% sometimes.

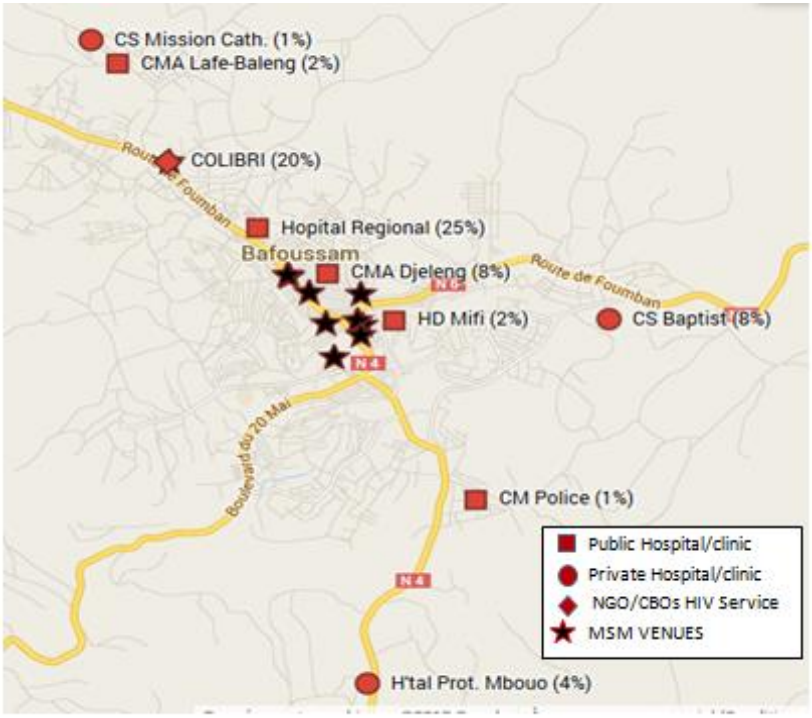
Health service access MSM. This section has attempted to detail which services were the most used by MSM in each of the study cities. Characteristics of the services most reported are presented as a guide to where to invest in improvements to service provision for this population. Outside of Yaoundé and Douala the services that were most reported are not services that have invested in staff training or specialized services for these populations. These services are well placed to provide services that can assist in decreasing HIV transmission in this high prevalence group.

25.8% of MSM participants had revealed their sexual orientation to a doctor or nurse; this varied from 11.3% in Bertoua to 37.1% in Douala. The cities with no specialized clinical services for MSM were the cities with the lowest levels of disclosure to medical personnel (Bafoussam 23.1%, Bamenda 25.7%, Bertoua 11.3% and Ngaoundere 23.0%). 7.5% (121/1606) of MSM participants were not able to list a single HIV prevention, testing or treatment service.

As **Table 38** (p. 167) shows, 88.3% of MSM participants indicated they had received HIV prevention information in the past 12 months; of these 78.9% had received information from media, 69.5% from trained peer educators, 68.4% from other MSM, 62.6% from family or friends and 56.9% from doctors/health providers. This shows that while the information obtained from the media by a large proportion of the population would be targeted at the general population, peer educators were an important source of information who were probably providing more targeted messages appropriate to this community. Similarly, 18.5% of MSM learned to use male condoms from outreach workers, 17.1% from sexual partners, 13.8% from AIDS education programs, 13.6% from friends, and only 2.4% learned from medical personnel. Again this reinforces the importance of outreach peer education networks, both in terms of ensuring the quality of information provided and providing specialized, targeted information.

MSM listed 25 services in the Bafoussam area, with three mentioned by more than 10% of participants (see **Table 39**, p. 168). The Bafoussam Regional Hospital was the most commonly mentioned, followed by Colibri and the Hopital de District de Dschang. The locations of the services are given in **Figure 3** on the following page.

Figure 3. HIV-related clinical services mentioned by MSM and visited by study staff in the Bafoussam area and MSM meeting places.



MSM mentioned 17 services in Bamenda (**Table 40**, p. 168), four of which were mentioned by more than 10% of MSM participants: Bamenda Regional Hospital, PMI Nkwen, the Baptist Health Center and Mezam Poly Clinic (**Figure 4** on the following page).

Figure 4. HIV-related clinical services and CBOs mentioned by MSM and visited by study staff in the Bamenda area and MSM meeting places.

MSM mentioned 13 services in Bertoua (**Table 41**, p. 168), three of which were mentioned by more than 10% of participants, Bertoua Regional Hospital, Bertoua Military Hospital, and CSI Catholic Nkolbikon (**Figure 5**).

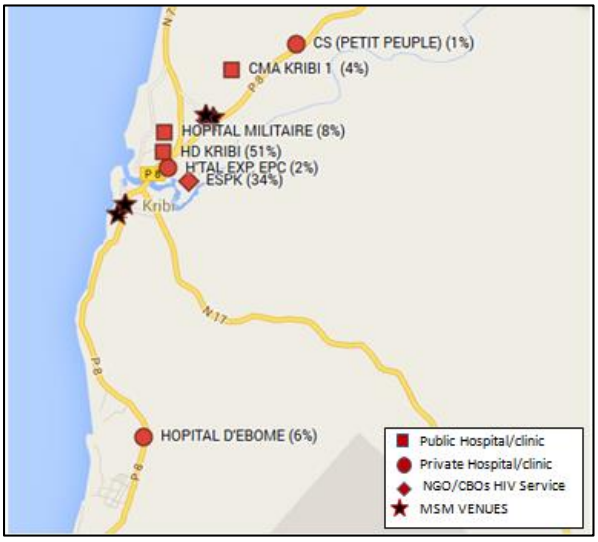
Figure 5. HIV-related services mentioned by MSM and visited by study staff in the Bertoua area and MSM meeting places.

MSM mentioned 40 services in Douala (**Table 42**, p.169), three of which were mentioned by more than 10% of the participants: Alternatives Cameroun, AIDS ACODEV, Hopital Laquintinie (**Figure 6**).

Figure 6. HIV-related clinical services and CBOs mentioned by MSM and visited by study staff in the Douala area and MSM meeting places.

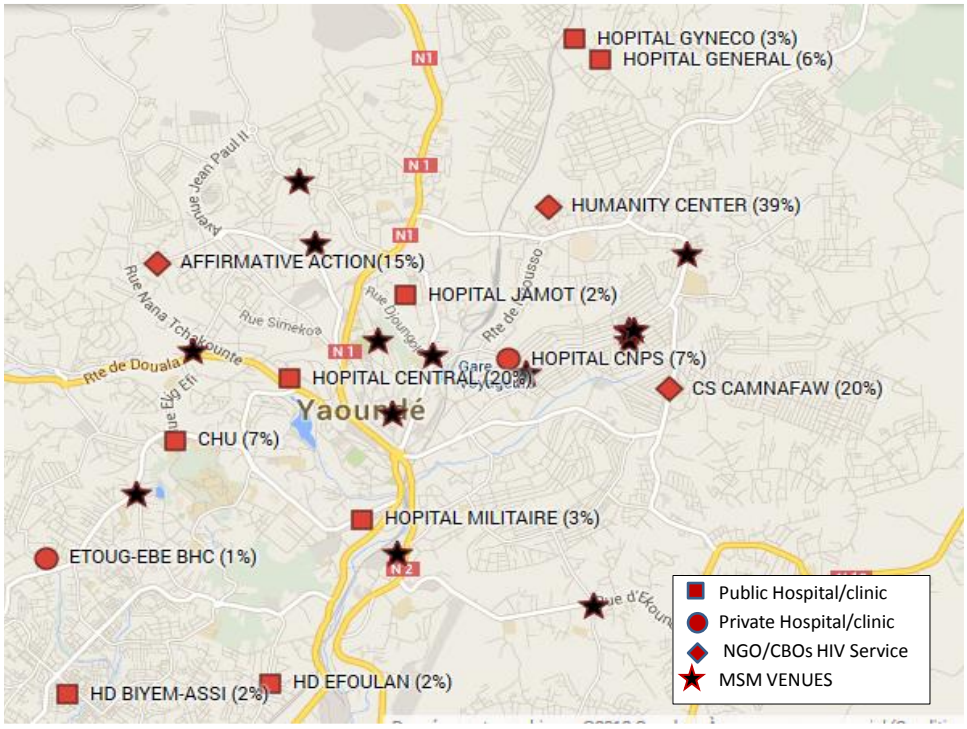
MSM mentioned 11 services in Kribi (**Table 43**, p. 169), two of which were mentioned by more than 10% of participants: Hopital de District de Kribi and ESPK (**Figure 7**).

Figure 7. HIV-related clinical services and CBOs mentioned by MSM and visited by study staff in the Kribi area and MSM meeting places.



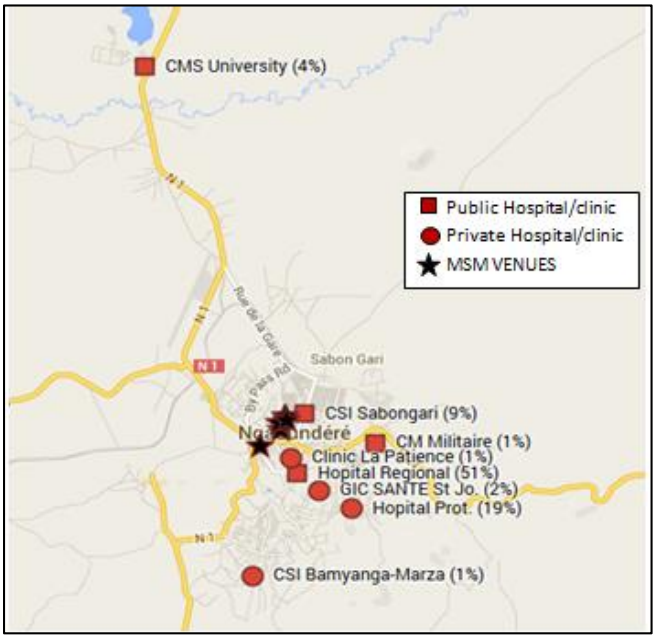
MSM mentioned 49 services in Yaoundé (**Table 44**, p. 170), four of which were mentioned by more than 10% of participants: Humanity First Cameroon, Hopital Central de Yaoundé and CAMNAFAW and Affirmative Action (**Figure 8**).

Figure 8. HIV-related clinical services and CBOs mentioned by MSM and visited by study staff in the Yaoundé area and MSM meeting places.



MSM mentioned 10 services in Ngaoundere (**Table 45**, p. 170), two of which were mentioned more by more than 10% of participants: Hopital Regional de Ngaoundere and Hopital Protestant de Ngaoundere (**Figure 9** on following page).

Figure 9. HIV-related clinical services and CBOs mentioned by MSM and visited by study staff in the Ngaoundere area and MSM meeting places.



Stigma and discrimination. The prevalence of rape among MSM was important with 27.3% indicating they had been forced to have sex on at least one occasion. This varied from 16.7% in Bertoua to 41.1% in Kribi (see **Table 46**, p. 171).

Self-reported denial of healthcare services because of sexual orientation was 5.7% and 1.6% in Bertoua to 10.5% in Kribi. Bad treatment because of sexual orientation was reported by 8.3% of participants, varying from 2.0% in Bamenda to 17.5% in Bafoussam.

Having been blackmailed was commonly reported by participants with 39.8% reporting across all cities and 68.0% reporting this in Bamenda. Bertoua had the lowest rate with 18.8% of individuals reporting having been blackmailed. Having been beaten or physically hurt was reported by 14.5% of participants with 4.4% reporting in Bertoua up to 27.5% in Bamenda. Self-reported levels of denial of police protection because of sexual orientation was 8.1% across all cities and varied from 0.0% in Bamenda to 15.1% in Yaoundé and 15.3% in Kribi.

Arrest[1] because of sexual orientation was reported at 7.7% (123/1,601) across cities, varying from 0.81% in Bamenda to 15.8% in Kribi. Having spent time in jail cells or prison[2] because of sexual orientation was

[1] Question: "Avez-vous déjà été arrêté parce que vous êtes un <utiliser la terminologie locale HSH appropriée>?" / "Have you ever been arrested because you are a <USE APPROPRIATE LOCAL MSM TERM>?"

reported at 5.3% (85/1599) and varied from 0.0% in Bamenda to two cities recording double digit percentages, 13.7% (Kribi) and 12.1% (Douala).

Figures from the Cameroon Ministry of Justice 2010 and the 2011 Human Rights Reports (United States Department of State, 2011) indicate there were 27 investigations, 20 prosecutions, 9 hearings/determinations, 8 convictions and 1 dismissal/acquittal related to homosexuality in 2010 (Ministry of Justice, 2011) and 36 reports received, 37 prosecutions initiated, 16 cases decided, 14 convictions and 2 dismissals/acquittals in 2011 (Ministry of Justice, 2012).

Given that there were 57 prosecutions in the two-year period from 2010 to 2011, the 85 individuals who reported having ever been jailed/in prison is plausible especially when considering a higher number of individuals may have been detained without charge. Some of the individuals reporting being detained here may also have been charged under different laws (e.g., public indecency) and hence not included in the Ministry of Justice statistics.

In terms of arrests for homosexuality, in the same two-year period 64 investigations were reported to the Ministry of Justice while a higher number of individuals were likely arrested and released without charge (see HRW, 2013). The 123 individuals reporting having been arrested is also plausible especially when considering 51 individuals were arrested for homosexuality in a single event in a nightclub in Yaoundé on 21 May 2005 (HRW, 2010).

Men who have sex with men results: Qualitative

Characteristics of Participants. MSM participants reported a mean age of 28 years old (among those who reported age) and had diverse educational backgrounds from "lower sixth" to university-level. None, however, reported graduating from college. Some participants attributed incomplete education or barriers to higher education to the high cost of post-secondary education, low family income, as well as social stigma. Some reported financial hardships, and some addressed these challenges through transactional sex for money and, in some cases, shelter. As one participant reported, "The majority of MSM make love in exchange for money. So when you meet someone and they offer goods in exchange for sleeping with you, it's really difficult to refuse" (MSM, Douala).

With respect to sexual identity, MSM participants indicated that the numbers who identify themselves as gay are relatively few, while those that have a "masculine build" do not identify as gay. In general, the majority of MSM identify as bisexual. One participant suggested these variations and low number who identity as homosexual is the result of a denial of their identities. As another commented, this may be related to the negative societal generalization of homosexuality, as "they put all in one single category:

[2] Question: " Avez-vous déjà été en cellule ou en prison parce que vous êtes un <*utiliser la terminologie locale HSH appropriée*>?" / "Have you ever been to jail or prison or because you are a <USE APPROPRIATE LOCAL MSM TERM>?"

'faggot,' a negative word to categorize all, it is usually the problem of other" (MSM, Yaoundé). Related to this context of hidden identity, "special codes" were also described as a way to quietly identify other MSM. These codes included behaviors such as wearing clothing a certain way, wearing specific jewelry, holding beer bottles a certain way when in a bar, or using code phrases such as "if someone asked whether you might know such a place, or a certain person, and that you answered 'yes'… that meant I know what you mean" (MSM, Yaoundé).

Despite the negative stereotypes, participants reported meeting in a variety of venues, including MSM-organized parties, nightclubs, snack bars at night, and organizations. In addition to physical venues, participants also reported meeting other men online.

Context and perceptions of homosexuality in Cameroon. Participants reported that Cameroonian law expressly prohibits homosexuality, according to Article 347, which "punishes the practice of homosexuality." Participants note heavy legal ramifications that have implications for irregularity in enforcement, exploitation, and corruption. Several participants reported having friends and acquaintances who had experienced arrest and imprisonment of MSM friends and acquaintances, though no participant of this analysis reported such an experience themselves. One participant noted that in most cases, MSM were arrested in bars or on the road when a "police patrol will just stop you on the road because you look effeminate" (MSM, Yaoundé). Participants felt the need to hide their sexual identity in public for fear of being "seen unfavorably in front of the law" (MSM, Douala). Blackmail by other individuals on the basis of sexual orientation, as well, was purportedly a result of criminalization. Criminalization also had implications for health service provision as one physician mentioned, "We can't tell ourselves that we will put structures in place to support them [MSM] because these structures will be the target of police which will be within its purview" (KI, Kribi). Another stated,

> People are thrown in prison because the legal reference is exploited, so just the fact that that law exists, people are thrown in prison, and when this is not the case, it reinforces homophobia in the society (MSM, Yaoundé).

The high level of stigma related to homosexuality is related to the criminalization of homosexuality. Participants reported being treated like or feeling like abominations in society, "the children of the devil" (MSM, Kribi), and that homosexuality is seen as a form of witchcraft and an unnatural phenomenon. In this context, stigma had several reported manifestations, ranging from the use of derogatory names and insults in social settings to other, more violent manifestations.

> Generally, homosexuals are considered an abomination and people don't really want to approach us. They don't know when men want to get involved with us, it's because they feel pleasure or that there is mutual attraction. It's difficult to reveal your sexuality in front of everyone since we live in quite a hostile context" (MSM, Ngaoundere).

Aside from the general context of stigma in public, stigma and discrimination was also noted to occur in specific settings, including service settings, education, as well as within the family. One participant spoke

about being denied services based on his sexual orientation, giving an example of moto-taxi drivers who refused to serve MSM clients. Likewise, social stigma from peers within educational settings also had an impact on education attainment for some:

> It was an ordeal…it was a trial to go to school, it was trying, because you had to start all over, you had to face the opinion of others. I wasn't whole amongst my friends, there was no relationship, there were superficial relationships, and consequently I wasn't happy when I was in school (MSM, Yaoundé).

One participant also cited an example of entire tribes turning against MSM when one's sexual orientation was disclosed (intentionally or unintentionally) and suggested that tribes would go as far as to poison the individual. Most salient among these comments, however, was the suggestion that stigma experienced by MSM begins at a young age from familial, and other, sources: "It is because of homophobia, because of homophobia which comes from the family, from the surroundings, from stigmatization, that is what 'nkwadengué,' homosexuals, suffer from" (MSM, Yaoundé). These diverse sources of stigma form a confluence of experiences and perceptions that impact the lives of MSM:

> …so many young people in secondary schools that are set apart, when you do not play football and you are a young boy, most often, the other put you aside, you are set apart, so many in secondary schools are isolated, alone and there're also cases of stigma in the family, some are pointed out in their families, others are completely isolated. There're cases of stigma in society, social groups, when you are determined, in fact categorized as being one of such people, people usually avoid dealing directly with you, even to undertake some social relationship with you, so there're cases of stigma (MSM, Yaoundé).

Family situation/relationships. Within the family, participants reported having to hide their identities from their family or disclosing to a select few members due to stigma and fear. For those participants who had disclosed their identities to their family members, they reported feeling severely strained relationships and rejection from some family members. Recounting his disclosure to his mother, one participant stated,

> …there was my mom who cried and said that it was sorcery. She said that it was mysticism, that it was an evil spell…. That I should ask for forgiveness and that I should renounce [homosexuality] to be at peace with my family (MSM, Douala).

Others indicated family discontent that was related to unmet expectations that a son would marry and have children.

> My elder sister said to me, "You should have a woman and you also have children, a man without children is not a man, if our parents have already put us in the world, it means that it is necessary that we put also some people in the world" (MSM, Ngaoundere).

Among others who do not identify as MSM, participants noted feelings of isolation.

> I had friends with whom I had to cut links, so you find yourself living in a community or simply isolated, you cannot go and visit a heterosexual friend because you will feel ill at ease with him; it all handicaps your social life (MSM, Yaoundé).

Interestingly, one participant described the supportive relationships between MSM and FSW, attributable to shared experiences of stigmatization and non-intimate interactions:

> …being two [MSM and FSW] they can build up solidarity among stigmatized persons … It is easier for a girl to talk to a man she knows cannot chat or court her, and will not disturb her work, because when it is an heterosexual, tomorrow they can have some intimate relationship that will disturb her work (KI, Kribi).

Finally, female-male marital relationships were also reported among MSM participants. Some MSM commented that MSM generally marry women to have children and to hide their sexual orientation. Another participant attributed marriage among MSM to family expectations: "Well for me, honestly I'm not ready to marry but maybe to honor my parents. Since I'm in a large family, everyone waits for the boys to get married, so I'm obligated…" (MSM, Ngaoundere).

Sexual healthcare and prevention of HIV. Participants demonstrated a range of knowledge related to STI and HIV risk and prevention. For prevention methods, condoms were the most commonly referenced form of prevention and, in several cases, men reported using male and female condoms for protection. One participant reported that female condoms were more comfortable for themselves or some partners than male condoms. Other participants commented on the additional use of lubricants with condoms, though lubricants used ranged from condom-compatible lubricant to petroleum-based products. Other non-efficacious methods of STI prevention included urinating after sex and traditional methods that include a form of douching using prickly pear and water.

Despite some knowledge of HIV transmission, condom use was heterogeneous and often based on the sexual partner. Some reported condom use based on "sight" or the perceived health status of their sex partner. One participant reported mixed condom usage, citing usage with men but not women.

> I know that it is an error, but I often judge with the behavior…it is like that in my head, when I have a sexual relation with a man, I am conscious and I always think of protecting myself, but with a girl, I like to take this risk, as I said it to you, I size up [the situation] initially. For example a girl whom I do not know too much, I will protect myself, whereas if I know her for a while, I will not do so (MSM, Kribi).

Most MSM reported receiving sexual health services from NGOs which provide specific services for MSM. As homosexuality is prohibited by law, participants reported that there are not enough health services available for MSM. In these organizations, participants received condoms, lubricants, and HIV testing as part of available services. Participants noted that those who are not part of organizations that

serve MSM have limited access to lubricants and condoms: “Indeed there are not enough lubricants at good price on the spot, I don’t even know if they are willing and courageous enough to go and buy them” (MSM, Yaoundé). Another stated,

> They cannot easily go to the pharmacy because people would say that, this is really [an STI] and they would know that they are gay and look at him differently. They can guess that they are gay, so this makes it difficult for them [to go there] (MSM, Yaoundé).

Participants, however, mentioned provider-related stigma as a common barrier to accessing services for MSM. In some cases, the perception of stigma, even without any previous experience, prevented MSM from utilizing health services, as shown in the following quotes:

> I am not yet under care services so, I do not know! I know the process, but I think I'll have troubles due to stigmatisation, I cannot queue up at the Day Hospital or at the central hospital (MSM, Yaoundé).

> … [I]t is not easy in Cameroon, but, we have already understanding that they will really accept people in the hospital, because if you go to the hospital [saying] that you are a NKOUADENGUI (MSM), if you go and tell the doctor that you are a NKOUADENGUI, immediately, some doctors, if he is not from that milieu, he may call a police station, he may call your parents,, he can reveal your secret to others, so it is not easy in Cameroon to get treatment as NKOUADENGUI (MSM, Ngaoundere).

In some cases, limited experience working with MSM populations and stigma from providers formed barriers to disclosure of sexual behaviors or orientation, “many staff have not yet had to meet homosexuals face to face” (KI, Kribi). Possibly as a result of the barriers to accessing health services, participants reported that HIV awareness for MSM comes from information provided in secondary schools, media, television, and NGOs.

These barriers in healthcare were not universal, however, as some MSM indicated they were able to find providers who they trusted and sought for various HIV prevention services. “I have a doctor I trust with my partner, too…there are exams, products he gives me to cleanse the body, to protect me” (MSM, Ngaoundere).

One participant who was living with HIV remarked on the varying levels of healthcare quality available across different areas of Cameroon, which in this case, appeared to be related to stigmatization of PLWHIV:

> On the Francophone side [of Cameroon], there are only private places where you can find console and give advice. So on the Anglophone side everything is well organized and you advise well and they pull up your morale. For example, around the Francophone area, there are doctors when they read your card and realize that you are seropositive they won’t even take care of you (MSM, Bafoussam).

Additional barriers to services for this individual living with HIV included costs of exams, CD4 tests, and transport to facilities; as well as lack of facilities where services can be obtained; and lack of resources in facilities:

> For example, the CD4 exam costs 2,500 CFA at a public place and 10,000 CFA at a private place. For example, it has been two years since my last exam as there is only one [health] center in Bafoussam where you have to pay transportation costs each time and sometimes you go anyway but find out that there are no HIV reagents. And speaking of financial problems, I must say to you that I never succeeded in finding work because of my [HIV] status … it's my wife who often helps us… but in general, it's hard (MSM, Bafoussam).

Finally, other health services, specifically mental health services, appeared to be particularly important but lacking for MSM. As noted by one participant, those mental health services that do exist may not be appropriate for MSM or address their needs: "the specialists in the domain do not always have the appropriate knowledge on MSM" (MSM, Yaoundé).

Participant recommendations for future programs. For the purposes of having a community-informed set of recommendations, participants were asked what they would recommend for future HIV prevention programs to respond to the overall epidemic among MSM. Recommendations overwhelmingly focused on broader aspects, such as recognition and inclusion of MSM in HIV prevention programming and research. As one participant suggested, "I would start by changing the prevention messages that are really heterocentric. I would opt for something more generalized for all sexual orientation categories" (MSM, Douala). Ongoing attention and research was perceived as gradually raising awareness in the population about sexuality while allowing MSM to have better access to HIV interventions, education, and fewer violations of their rights:

> You may notice it over the years, with time we can observe a change in the community's way of life, a change of behavior, people are more aware, more alert to the behavior to adopt or the measures to take if they find themselves in situations such as those I mentioned, so they know how they have to act, how they have to behave, how they can demand for intervention, how to take measures. They know more and because of that, they feel less vulnerable as far as the violation of human rights are concerned (MSM, Yaoundé).

Throughout the interviews, the impact of structural factors on the health of MSM was salient. Direct statements and inferences from reported experiences suggest that recognition of MSM's human rights and dignity in Cameroon may be a first step to initiate other opportunities that will have an indirect, positive impact on health.

> For me, they should first give [MSM] freedom, and then they should also give them the possibility of having a little bit of money, not discriminate against them in society. If there was even an NGO who supported us that would be good, since sometime at the hospital they give us

> a food regimen for treatment [for people living with HIV] that is very expensive, so our principal problem is that of means (MSM, Bafoussam).

Female sex worker result: Quantitative

Population size estimate.

Cameroon 2013 FSW Population Size Estimates:

Population	Cameroon Population Proportion % [95%CI]	Cameroon National Population Size Aged 15-49 [95%CI]	Cameroon Urban Areas Population Size Aged 15-49 [95%CI]
FSW	1.88 [1.15-2.61]	98,102 [59,914-135,978]	38,582 [23,563-53,477]
Cameroon 2013 total population INS projection aged 15-49			
Female aged 15-49		5,209,885	2,048,946

95% CI

Socio-demographic profile. Ages of FSW sampled during this study varied from 18 to 67 years (**Table 47**, p. 172). The highest proportions occurred in the age bracket 25 to 29 in all cities except in Bafoussam and Bertoua where the over 34 years old group was the largest with 31.3% and 28.8%, respectively. This study has covered a higher proportion of aged FSW compared to previous behavioral study among FSW in Cameroon (Tamoufe & Medang, 2009) in which the oldest age group was 50 to 54 and the highest proportion occurred in the age bracket 20 to 24 (32.9%, N=994). 84.9% of participants reported living in the city where they were sampled for more than three months. This ranged from 72.7% in Bafoussam to 96.8% in Yaoundé.

Employment patterns were similar across cities, 12.8% of all participants indicated they were unemployed, 37.1% students and 50.1% in some kind of employment other than sex work. This varied from 10.6% in Ngaoundere to 44.4% in Bertoua. 58.2% of the sample population had finished primary school, 20% had completed secondary school, and 2% reporting university or professional training.

81.3% of FSW participants reported having children, varying from 56.9% in Bamenda to 87.6% in Bafoussam. Most FSW participants (94.9%) were not officially married. This ranged from 89.8% in Bafoussam to 98.2% in Kribi. 1.6% of participants reported polygamous marriage compared to 3.5% being in monogamous marriages.

While 1.5% of participants reported using injectable drugs, it was not possible to confirm or exclude all these instances so the level was probably somewhat lower; in fact only 0.4% actually reported a type of drug that might conceivably be injectable (cocaine, heroin, marijuana).

Condom negotiation. As shown in **Table 48** (p. 174), the mean number of clients in the past month reported by FSW across all cities was 109.5 (highest in Douala at 155.7 and lowest in Kribi at 67.2) and

the mean number of non-paying partners in the past month was 1.2. 40.9% of FSW reported using condoms every time with clients and 0.4% (8/1,800) reported not using condoms at all with clients in the past month. For non-paying partners this was 13.5% using every time and 33.5% (461/1,375) not using condoms at all. Lowest levels of consistent condom use with clients in the past month were in Bertoua (9.4%), Bamenda (17.5%) and Ngaoundere (10.9%). The lowest levels of consistent condom use with non-paying partners were also in Bertoua (3.5%), Bamenda (5.7%) and Ngaoundere (5.1%). 84.4% of participants indicated they thought it was easy to suggest using a condom with clients, and this varied from 57.8% in Ngaoundere and 65.4% in Bertoua to 99.6% in Bafoussam. Almost half (47.9%) of the FSW participants indicated they had been offered more money for sex without a condom in the past week, with the highest percentages in Bertoua (58.9%) and Ngaoundere (67.3%). Only 13.5% said they had never received such an offer. Discussing condom use with non-paying partners was reported by 40.4% of participants as difficult, and was as high as 55.9% in Bamenda.

As shown in **Table 49** (p. 176), 46.5% of participants reported male condom breakage or slipping off in the past month and 3.9% of participants reported this for female condoms. As the relative frequency of use was not recorded it isn't possible to compare these figures.

36.5% of participants indicated they received condoms for free (56.7% from peer educators, and 18.2% from drop in centers) and 95.3% reported purchasing condoms (54.9% from shops, 24.2% from street sellers, 12.8% from specialized condom sellers and 6.6% from pharmacies).

68.0% of FSW participants indicated male condoms were easy to find across the cities, however this figure dropped to 56.1% in Bertoua. Female condoms were considered easy to find by 34.2% of FSW participants, though only 7.4% of participants reported them easy to find in Ngaoundere.

Use of lubricant was reported by 55.1% of participants, though this varied from 16.3% in Ngaoundere to 71.7% in Douala. 70.1% of participants who indicated they used lubricant indicated using some kind of commercial sexual lubricant, this varied from 43.6% in Bafoussam to 85.2% in Yaoundé. 42.4% of participants felt that lubricants were easy to find across all cities, however in the lowest levels were recorded in Ngaoundere with only 8.9% reporting them as easy to find.

HIV-related history. As **Table 50** (p. 180) shows, 10.2% of participants indicated they did not know their HIV status either because they have never been tested (7.6%) or because they had never received their results (2.6%). Non-knowledge of status varied from 1.9% in Bertoua to 25.8% in Ngaoundere. Of those reporting they were not living with HIV 73.8% reported having been tested in the past 12 months.

5.1% of participants reported that they were living with HIV, varying from 0% in Ngaoundere to 10.9% in Bertoua. While the highest prevalence recorded in the 2009 national HIV prevalence study (Tamoufe & Medang, 2009) was also in Bertoua, the self-reported prevalence estimate was significantly lower than the measured prevalence estimate of 53.1%.

64.2% of individuals reporting they were living with HIV were on treatment and 78.9% of those on treatment were receiving it from a hospital or pharmacy, with the remainder receiving treatment from traditional doctors. Of those not being treated, 18.5% had received CD4 count results and 25.9% had been informed they need treatment.

Over half of FSW living with HIV (65.2%) never disclosed their serostatus to partners, 8.7% always revealed their status and 26.1% sometimes revealed their status.

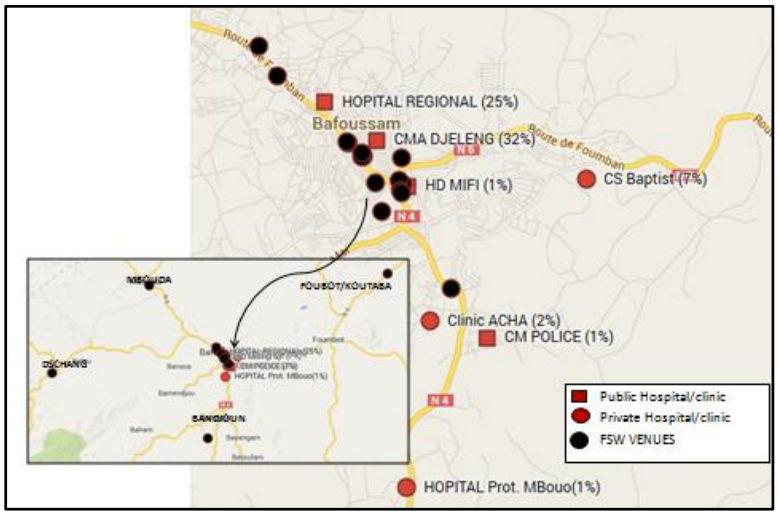
Health service access FSW. This section has attempted to detail which services were the most used by FSW in each of the study cities. Characteristics of the services most reported are presented as a guide to where to invest in improvements to service provision for this population. Frequently the service the most reported in each city is not a service that has invested in staff training or specialized services for these populations. These services are well placed to provide services that can assist in decreasing HIV transmission in this high prevalence group.

32.7% of FSW participants had disclosed their occupation to a doctor or nurse. This varied from 17.3% in Ngaoundere to 49.4% in Bertoua. 9.6% (174/1815) of FSW participants were not able to list a single HIV prevention, testing or treatment service.

As shown in **Table 51** (p. 181), 68.0% of FSWs indicated they had received HIV prevention information in the past 12 months, of these 66.3% had received information from trained peer educators, 49.5% from media, and 48.0 % from doctors/health providers. This shows that peer educators were an important source of information and they likely probably provide targeted messages appropriate to the FSW community. Additionally, 27.2% of FSW learned to use male condoms from sexual partners, 20.5% from friends, and 19.4% from outreach workers. This demonstrates the importance of outreach/peer education networks for FSW, both in terms of ensuring the quality of information provided and providing specialized, targeted information.

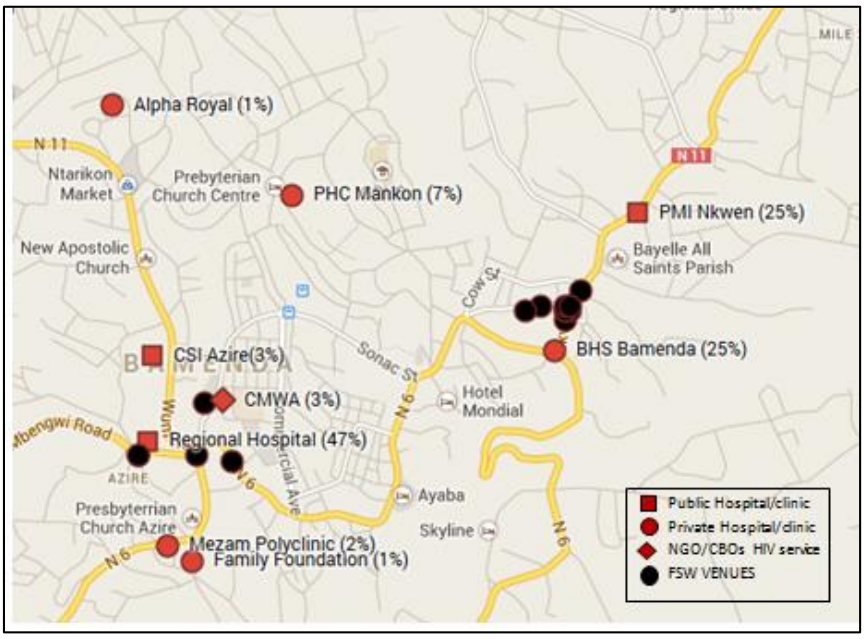
As shown in **Table 52** (p. 182), FSW mentioned 29 services in the Bafoussam area with two mentioned by more than 10% of participants: the CMA de Djeleng and the Bafoussam Regional Hospital (**Figure 10**).

Figure 10. HIV-related clinical services mentioned by FSW and visited by study staff in the Bafoussam area including sex worker venues.



FSW mentioned 17 services in Bamenda (**Table 53**, p. 182), three of which were mentioned by more than 10% of participants: Bamenda Regional Hospital, PMI Nkwen and the Baptist Health Center (**Figure 11**).

Figure 11. HIV-related services mentioned by FSW and visited by study staff in the Bamenda area.

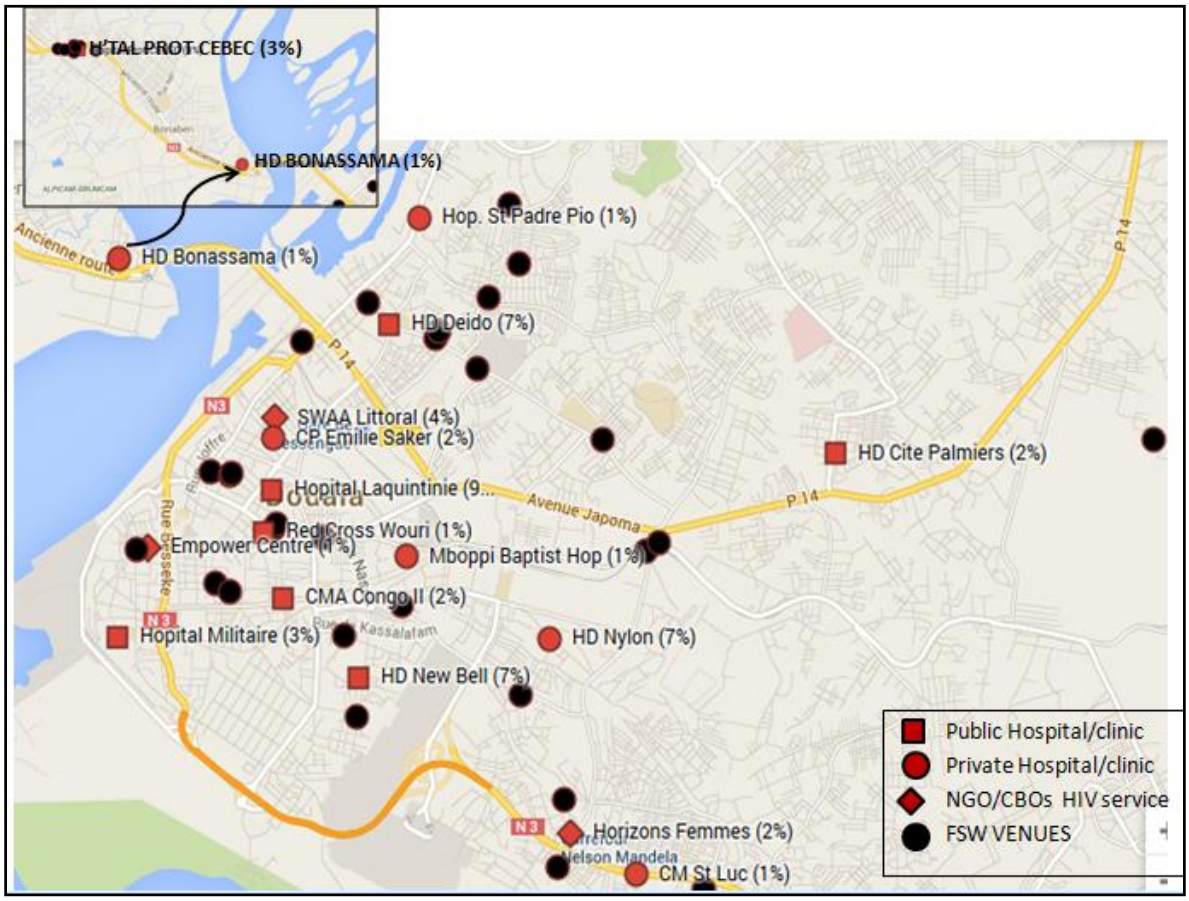


FSW mentioned 15 services in Bertoua (**Table 54**, p. 183), five of which were mentioned by more than 10% of the population: Bertoua Regional Hospital, ASAD, CSI Mokolo 1, CSI Catholic Nkolbikon, and Bertoua Military Hospital (**Figure 12**).

Figure 12. HIV-related clinical services mentioned by FSW and visited by study staff in the Bertoua area including FSW venues.

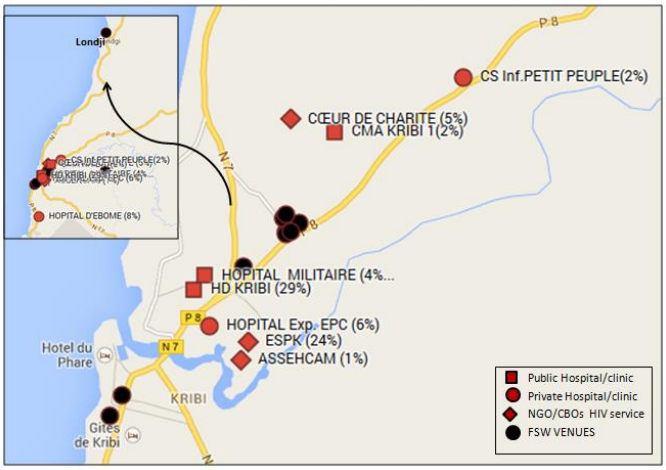
FSW mentioned 61 services in Douala (**Table 55**, p. 183), only one of which was mentioned by more than 10% of participants: Baptist Health Center, Douala (**Figure 13**). While only one service was mentioned by more than 10% of FSW in Douala, only 6.3% of participants did not list any services at all, indicating that FSW are using a variety of services across the city, and there is no single service that is used by a large proportion of the population. In Douala, any investments to improve quality or accessibility of services used by sex workers would have to ensure improvements across a range of services or would need to have extensive outreach to achieve good coverage.

Figure 13. HIV-related clinical services and CBOs mentioned by FSW and visited by study staff in the Douala area including sex worker venues.



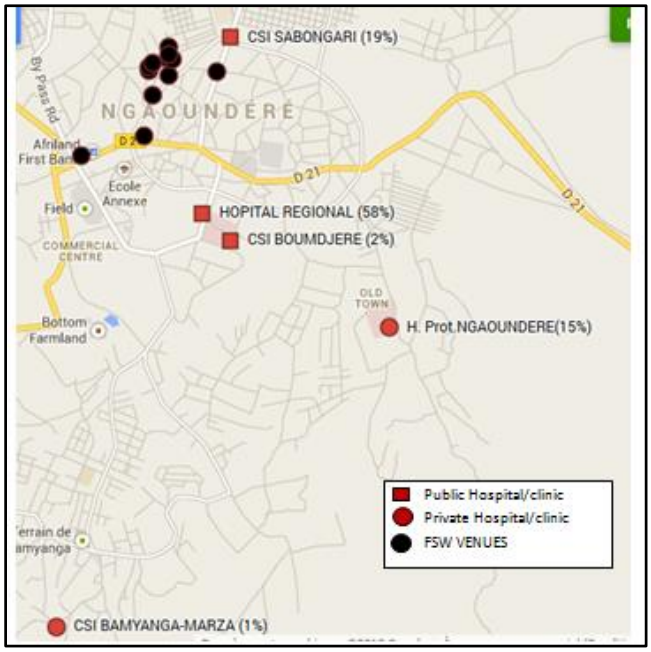
FSW mentioned 15 services in Kribi (**Table 56**, p. 184), two of which were mentioned by more than 10% of participants, Hopital de District de Kribi and ESPK (**Figure 14**).

Figure 14. HIV-related clinical services and CBOs mentioned by FSW and visited by study staff in the Kribi area including sex worker venues.



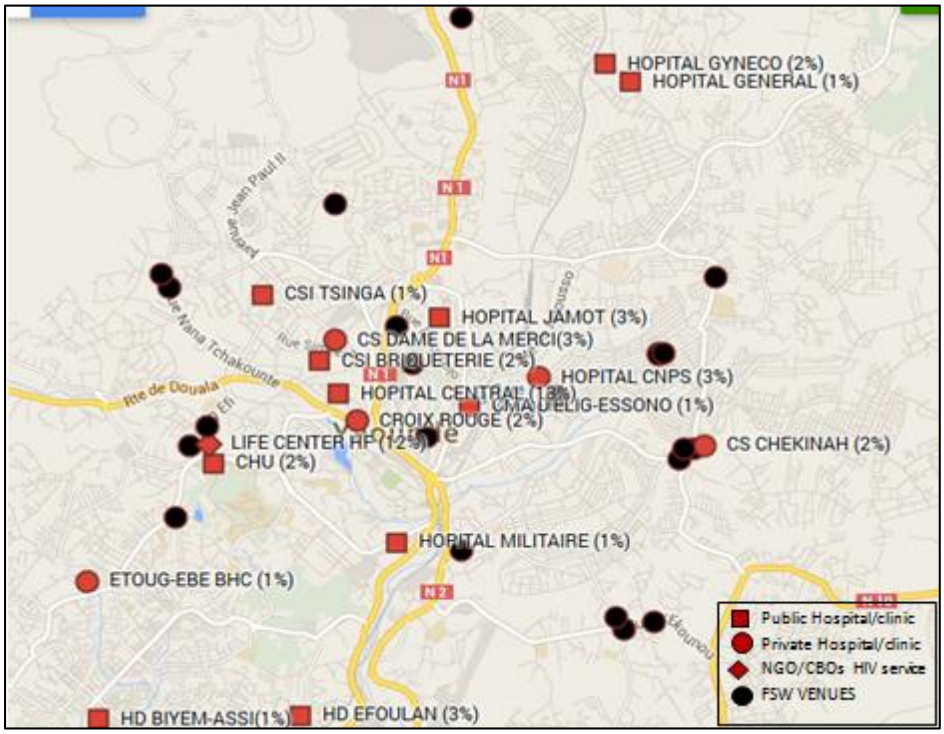
FSW mentioned 6 services in Ngaoundere (**Table 57**, p. 184), three of which were mentioned by more than 10% of participants: the Hopital Regional de Ngaoundere, the CSI de Sabongari and the Hopital Protestant de Ngaoundere (**Figure 15**).

Figure 15. HIV-related clinical services mentioned by FSW and visited by study staff in the Ngaoundere area including sex worker venues



FSW mentioned 66 services in Yaoundé (**Table 58**, p. 185), two of which were mentioned by more than 10% of individuals: Hopital Central de Yaoundé and Horizons Femmes (Yaoundé) (**Figure 16**).

Figure 16. HIV-related clinical services and CBOs mentioned by FSW and visited by study staff in the Yaoundé area including sex worker venues.



Social discrimination. The prevalence of rape among FSW was high with 45.9% indicating they had been forced to have sex on at least one occasion. This varied from 31.4% in Bafoussam to 60.0% in Kribi (see **Table 59**, p. 186). The Cameroon Ministry of Justice reported 68 adult victims of rape in 2010 (Ministry of Justice, 2011) and 89 in 2011 (Ministry of Justice, 2012).

Self-reported denial of healthcare services because of occupation as a sex worker was 3.2% and varied from 1.0% in Yaoundé to 11.8% in Kribi. Bad treatment because of occupation was reported by 5.4% of participants, varying from 1.6% in Yaoundé and Bafoussam to 17.2% in Kribi.

Self-reported levels of denial of police protection because of sex work among FSW was 33.4% across all cities and varied from 9.0% in Bamenda to 66.4% in Bertoua. Arrest because of sex work were reported at 55.6% across cities, varying from 42.6% in Kribi to 67.9% in Douala. Having spent time in jail or prison because of sexual orientation was 4.7% across all cities and varied from 1.3% in Yaoundé to 12.5% in Bertoua. Official figures for sex work in Cameroon in 2010 were 25 investigations, 25 prosecutions, 14 cases heard and determined, nine convictions and five discharges/acquittals (Ministry of Justice, 2011)

and in 2011 were 16 reports received, 23 prosecutions initiated, 13 cases decided, 11 convictions and 2 acquittals/releases (Ministry of Justice, 2012).

Over half of FSW participants reported having been blackmailed because of sex work, with 55.1% reporting across all cities and 69.5% reporting the experience in Kribi. Bafoussam had the lowest rate of blackmail, with 38.8% of individuals reporting having been blackmailed. Having been beaten or physically hurt was reported by 40.0% of participants with 31.6% reporting in Yaoundé up to 45.7% in Bertoua.

Female sex worker results: Qualitative

Characteristics of participants. FSW participants ranged in age from approximately 22 to 48 years, though they reported FSW range in age from 13 to 60 years, and had diverse educational backgrounds from "lower sixth" to university-level. Similarly, customers were reported to range in age from 20 to 50 years old. FSW in these sites work independently or at times within a group structure, in bars, or houses:

> Sometimes you can work in proximate nightclubs, in this case you work in somebody's house and you are paid, a room is offered to you, but there you are the loser. We prefer to walk on the pavement, sometimes there are girls who are owned by certain men, in this case they work and these men give them just what will allow them to survive –they are generally young girls of approximately 15 years old (FSW, Douala).

Context and perceptions of sex work in Cameroon. Sex work initiation was commonly attributed to the loss of a male partner/husband through death or the end of a relationship and, subsequently, loss of financial protection and assistance while raising children. For most of the participants, sex work was their only source of income, though a few reported having a second source of income, such as being a vendor. In order to support themselves and their children, women began sex work in response to lack of alternative, available options, referring to this with the phrase "I am fighting" as in "I fight like this in order to survive." For some, they were also obligated to support an extended family with their work. Despite the family support this work offers, such as children's school fees and other needs, most FSW participants reported that their families were unaware of their involvement in sex work. One participant noted that her sex work income allowed her to "feed my children, to send my children to school. Let me tell you something: my children attend private schools!" (FSW, Bertoua). Another stated,

> I had a husband at a young age, but it did not work; I am [hesitating] a street girl and that is how I manage to take care of my children and myself. I am a mother of ten children and six grandchildren (FSW, Ngaoundere).

Several women reported initiating sex work at the suggestion of a friend or family member who was already involved in this line of work or introduced to it by male figures in their lives:

> There are some who are introduced by their friends. There are also certain perverts. Certain men who introduce women to this environment. In reality, they use the girls like sexual merchandise (KI, Bafoussam).

One participant entered sex work and learned about how to practice through advice of her family member:

> One of my sisters took me into it because she saw how miserable I was. It was not easy for me [hesitating] I lost my two kids and [my] mother… explained to me how things work in this job, she taught me how to use a condom so that I cannot get infected if it gets burst (FSW, Bertoua).

In many cases, participants indicated that they had attempted to work in other occupations prior to sex work but were met with failed attempts or were generally met with limited economic opportunities.

> I have tried trade, I have sold palm oil, spiced stew, but it did not work! I have to put things together with my children, it is better when both a woman and a man struggle to put things together in their home. It is not easy when done alone so I have to take up my activity in the street!...We don't do this job out [of] our will, I am not happy to practice this activity, but I have no choice (FSW, Bertoua).

Despite these challenges, one key informant noted that FSW often form support groups for one another, particularly when one member is sick or in need of assistance.

> Since they are much more into meetings, in meetings they have contributions (djangi) for assistance and the rest, and very often when someone is sick, so they struggle, they do what they can... they contribute money in order to take the patient to the hospital (KI, Ngaoundere).

Psychosocial health – experiences and outcomes. FSW reported general levels of stigma and harassment in the community, which often led to a need to conceal individual identity as a sex worker. Key informants also agreed with this, describing the social stigma that FSW are faced with: "…It's [sex work] not accepted by the large majority. You often hear phrases like 'that girl there, she's a prostitute'"(KI, Bafoussam).

> One time a guy who worked at the market recognized me. When I passed by with my friend he yelled from a distance that we are from the brothels. I replied from a distance that he, too, is from the brothels. That if not, what was he doing at the motel/inn to be able to recognize us. We started arguing and it drew a crowd around us. A "papa" saw our respectable clothing, since that's how we dress during the day, and he said that there was nothing to suggest we were prostitutes. And that's how this affair ended (FSW, Bafoussam).

Stigma and violence did not stop at harassment but also manifested as rape and blackmail. Participants mentioned being harassed, brutalized, robbed, and raped by clients, while two participants attributed this type of violence to clients' drug consumption.

> I was raped one time in Ngaoundere! In the bedroom with someone. [Hesitation] … while I was inside, I didn't know that he wasn't alone. He was with someone else. The second person stayed outside. So when I finished with this one guy, he opened the door for the other guy and another person came in with a dagger. Yes! He placed the dagger on me [hesitation]… it was only afterwards that we found out that they were together… I told myself that it was because I was new; it's because of that that this happened to me… He forced me to sleep with him. He raped me… (FSW, Bertoua).

Several participants reported having been raped at least once, either by a client and/or police officer. Participants also reported constantly being harassed for money by police or being robbed while working.

> There are police men who often come by at 10 p.m. to ask for my identity card. One day I forgot it on my way to buy some fish. A police man stopped and took me. After going around in their vehicle, he asked me to give him money so that he could let me go. I proposed 2,000 CFA to him, which was at the house. We arrived at the house. He wanted to have sex with me and I refused. I gave him 2,000 CFA and I presented him with my identity card and then he went away (FSW, Bafoussam).

> They don't protect us. They're all swindlers. A police finds you outside he will rape you. When he finds you he asks for your [identity] card. When you answer that it's in your room, he follows you to look for it and there he'll force you to sleep with him without a condom and take our money. There you are obligated to do it because he'll threaten to take you away if you don't do it. If he takes you away you'll have to spend at least 5,000 CFA. The police don't care. They are the primary aggressor (FSW, Bertoua).

Violence perpetrated by police, also had implications for HIV prevention, as condoms were described as a source of evidence for police and basis for blackmail. One FSW in Bertoua reported, "… policemen break our doors, they count the number of condoms we have used and ask us to share the money with them, other even take it by force and rape us without condom above all" (FSW, Bertoua).

According to participants, prostitution is not considered legal in Cameroon. Related to this, it was perceived that rape of a prostitute is not considered rape due to their involvement in sex work and lack of legal status. Several individuals described victim blaming and a lack of justice or social assistance for sex workers who were raped or experienced other types of intimate violence.

> The problem is that… the girls explain to us that they were raped. They're ashamed to go complain because when they get there, [as] the first question they're going to ask them, "what did you do to get raped?" Prostitution is not good. So, they cannot disclose it. They go on like this, keeping it to themselves (KI, Bertoua).

Prevention of HIV and sexual healthcare. Most FSW were aware of the risk for HIV transmission and acquisition associated with sex work. As a result, most women reported using condoms, including the

use of both male and female condoms. One participant did, however, indicate that she had been informed that HIV could be transmitted only through blood; this participant indicated the use of condoms, though apparently for other STI prevention. Several women who reported the use of lubricants had learned about the importance of condom-compatible lubricants instead of saliva or Vaseline from a local NGO.

The ability to negotiate condom use with clients was heterogeneous across the participants. Many women reported turning clients away who refused to use condoms and reported no difficulty with such a refusal, highlighting the importance of maintaining their individual health.

> For the three years I am in this activity here in Bertoua I have never gone without a condom, it is jeopardizing my own life; it is better for me to go for a thousand CFA with a condom than to go for 10,000 CFA without, my children still need me beside them (FSW, Bertoua).

Others acknowledged their vulnerability and lack of self-efficacy to demand condom use by clients when there was financial incentive to have unprotected sex.

> I believe they are vulnerable because… someone will propose a lot of money for unprotected sex. Other FSW will go and accept, a lot accept unprotected sex for a large sum of money (FSW, Bertoua).

Condom use also varied by partner or client status and whether sex was forced or voluntary.

> [Un-protected sex happens when] there is first of all the marriage with "servant boy": the servant boy is a guy who you meet in the street when you arrive. He decides to be your husband and with him you must have unprotected sexual relations and in exchange he protects you. These servant boys have many girlfriends by and by; this is what makes it easy for us to catch the disease. There are also customers who pay well and who do not want to use a condom, there are also cases of rapes because gangsters often attack us and rape us (FSW, Douala).

With respect to HIV testing, many participants stated they had been tested for HIV in the past, some multiple times. One participant reported using condoms with clients but not her intimate partners, indicating that she and partner are tested together for HIV infection. FSW were able to test at a local hospital or at NGOs such as ASAIDE, which also provides condoms and counseling. According to one key informant, however, approximately only half of FSW who are tested return to receive their results. The key informant attributed this to lack of belief in the test result, saying “they think they are healthy, and they will even argue over their status, sometimes some of them even collect the HIV test result and do not follow the support program” (KI, Ngaoundere). Other FSW attributed lack of HIV testing or receiving results to a desire not know one’s status or risk public exposure.

> We know that HIV is a bad disease, we don’t want to know that we have this disease, we prefer to live without having the knowledge even if we have it. There are also sometimes conditions in which handing the results is public instead of being private and personal (FSW, Douala).

Notably, for those FSW who are living with HIV, there were mixed feelings of whether this was accepted within the community. FSW were aware of their HIV risks and understood these risks to be part of sex work. Others suggested that FSWs tended to stigmatize those who were living with HIV: "they are insulted when they are passing, they are abandoned within themselves, and they often make fun of them" (FSW, Douala).

> At first it was difficult… because it was a disease for which people said there wasn't any treatment… I was scared. When people say someone is seropositive, they run away. You abandon! … But thanks to ASAIDE, they made us understand that you don't abandon a sister with a disease, that she will not infect you from eating from the same plate or from drinking from the same glass. So now I know that if my sister is sick, I must go towards her, I must go to her to help lift up her morale, I must go to her to help her forget her illness… We understand that it's a disease like any other disease. That we must not abandon your sister because she is positive! (FSW, Bertoua)

Barriers and facilitators to services. Barriers to the uptake of HIV services were related to fear and lack of awareness of HIV/AIDS. As one FSW put it, "at the beginning it was difficult you know, they used to say many things about this disease, that there was no treatment for it; so when this type of person used to come around we ran away" (Bertoua, FSW). Limited individual and laboratory resources, such as CD4 testing, also served as a formidable barrier to services for FSW.

> These vulnerable [FSWs] can be really helped out... I have a case now, she is at home, she cannot... when you even talk to her about the hospital, she says 'go to hell,' because…she does not have money, she cannot go to the hospital, so shame ... and she is gradually dying (KI, Ngaoundere).

Some participants reported stigma from providers, though this was not universally reported. Others suggested the best services were those provided by NGOs.

> When you go to the hospital to see a doctor to explain to him your health problem he starts by insulting you asking you what you do for a living. When you say [I am FSW], he insults you in front of people. So we're scared because of the shame (FSW, Bertoua).

> They always told me that doctors always take good care of them, because there is always a bond between them and the doctor, if perhaps ... they have a problem, they run directly to the doctor, they also prescribe them antibiotics and other stuff to take home (KI, Ngaoundere).

> In general, NGO-based care is best than in public establishments - in NGOs, you are closely followed by doctors (FSW, Douala).

Participant recommendations for future programs. When asked about preference for future HIV prevention and other programs for FSW, responses ranged from addressing legal and structural issues,

to offering employment opportunities, and increasing the number of NGOs that provide services to FSW. Many felt that changing these social and structural issues would offer long-term benefits to FSW's lives.

> I would take out a piece of permit that would require to leave prostitutes in peace! Because if there was a document that would leave prostitutes in peace, police would be scared to rape us, to steal from us, and the aggressors would be scared to harm us! Because with your piece of paper/document, could can complain anywhere to anybody! But here we aren't assured. Here we are exposed to every risk (FSW, Bertoua).

> First to accept them. We must accept them despite what they do. We must accept them. And we must also improve… I would say… the quality of services at the hospital level, for them… there's also the framework at the level of… of justice. There must be a legal framework for them as well (FSW, Bertoua).

> I would say to you just that these girls do this by [financial] limitation. This is because their life situations are difficult. That if one could reintegrate them into society by giving them [formal] work that would allow them to leave this environment and be more productive to society (KI, Bafoussam).

Health services results

Health prevention, testing care and treatment services. Under the Cameroon National Strategic Plan for HIV (2011 – 2015), the Government of Cameroon facilitates the availability of HIV testing and counseling at both community and health center based services. Community based organizations (CBOs) may provide HIV Testing and Counseling and refer patients on to accredited health services that provide further clinical assessments, usually at a hospital or health center. These services are mainly public, with some private and religious health services accredited to provide comprehensive HIV testing and care. Currently, CBO-level prevention activity is restricted to HIV counseling and testing (HCT) with trained counselors, and the distribution and education regarding condoms and condom compatible lubricant through trained CBO staff and peer educators. Nationally, there are currently two KP-specific programs that function in five main cities in the country (Bamenda, Bertoua, Kribi, Yaoundé, Douala). The USAID HIV AIDS Prevention Program (HAPP), supports CBOs to provide HCT and condom/lubricant distribution to FSW (five cities) and MSM (three cities), with referral to further HIV services, and a Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) program, through the Government of Cameroon and an NGO, CAMNAFAW, has begun activity in main cities such as Yaoundé, with plans to scale up nationwide by 2016. Thus, HIV testing and counseling services remain concentrated within the public sector facilities, and are mainly focused on general population-level activity, with only nascent programs specifically designed to address the needs of marginalized populations, and reduce the barriers to health services for populations at heightened risk of HIV infection.

Overview of service results. The services listed by participants as places they access HIV prevention, counseling testing and/or treatment services were consolidated by removing variations on names and by removing services that did not have a physical location or that could not be confirmed/identified.

A total of 391 services were mentioned across the cities by MSM and FSW. A breakdown of the number of unique services listed in each study city by participants is given in **Table 60** (p. 187) and the percent of services by city that were mentioned by both populations. The percentage of services mentioned by both populations varied from 19.0% in Bafoussam to 58.8% in Kribi.

103 of the services most frequently mentioned by participants and key informants were visited by study staff. 81 services mentioned by MSM or indicated by KI or service staff as serving MSM and 93 services mentioned by FSW or indicated by KI or service staff as serving FSW were visited and assessed. Seventy-one services were mentioned as servicing both populations. 42.7% of these services were public hospitals or clinics, 37.9% were private or non-profit clinics and 19.4% were CBOs or NGOs providing community services. 50% (49/98) of services had staff that received specialized training in working with MSM and/or FSW. 90.2% (92/102) provided HIV testing and counseling services and 20% (20/100) provided specialist MSM/FSW HIV testing and counseling services. 55% (55/100) had provided ART in the past four weeks and 70.9% (39/55) reported ART stock shortages in the past 12 months. Public and private clinics were equally as likely to face shortages (Fisher's exact test p=0.74).

Health service assessments. The appendix provides information from the service assessments that were conducted at health centers cited by MSM or FSW participants as a location that provides HIV/AIDS treatment or prevention. There were 103 centers assessed across all seven cities, of which 25 centers were cited by at least 10% of MSM or FSW participants in each city. As shown in **Table 61** (p. 188), of the 25 most cited health centers, 80.0% were cited by both the MSM and FSW population, 4 centers were cited exclusively by MSM and 1 center was cited exclusively by FSW. This illustrates a lack of specialized service centers that exist for each population and suggest that most centers offer care to MSM and FSW integrated within other demographic groups. This is evidence by the highest percentage of most cited services being public hospitals/clinics (44.0%) followed by NGO/CBOs (36.0%). As is indicated in the service assessments, the public hospitals serve the general population, whereas NGO/CBOs are more likely to target MSM or FSW specifically.

Staffing levels at each service are represented in **Table 62** (p. 189). The average number of paid doctors at the top 25 cited services was 2, the average number of paid nurses was 10.7, and the average number of paid counselors was 2. Additionally there were on average 2.4 paid peer educators and 3.2 volunteer peer educators. The numbers of staff at the most cited services are similar to the total sample of 103 health centers, however the most cited services have greater levels of trained workers for MSM and FSW populations. This is also most likely due to the high percentage of NGO/CBO services cited frequently by the populations. Of the top 25 centers, 37.5% reported that more than half of their workers are trained for MSM or FSW care compared to only 21.4% of the total sample. Even within the most cited centers, 41.7% reported that none of their staff are trained in specialized MSM/FSW care.

MSM and FSW have unique sexual health needs that require training and sensitization of health workers.

Table 63 (p. 190) illustrates the manager's knowledge of the type of clients that access each health center. At the 25 health centers listed most frequently by MSM and FSW populations, the majority of clients are not MSM or FSW. 61.6% centers reported less than half or no clients are MSM and 75% of centers reported that less than half or none of their clients are FSW. This further highlights the lack of centers that provide care specifically for MSM or FSW, and implies the services providers may be unaware they are treating individuals from these populations. The stigma and discrimination discussed earlier in this report make it challenging for MSM and FSW to access care in centers that serve a low proportion of other MSM or FSW clients. Of the most cited centers only 1 reported that all or almost all their clients were MSM and 1 reported that all or almost all their clients were FSW.

The services offered at the health centers in the past 4 weeks are listed in **Table 64** (p. 191). As seen in the table many centers offered HCT, but a much lower proportion of health centers offered specialized HCT for MSM or FSW. An important aspect of HIV treatment and prevention shown in this table is the availability of ART medication. Of the top 25 cited centers just over half (52.0%) had ART medication available for people living with HIV in the past 4 weeks and only 16.0% had ART medication for MSM or FSW. Of the total sample of 103 health centers only 13.0% had ART medication for MSM or FSW in the past 4 weeks. Furthermore, of the centers that provide ART, 55.4% of the total sample and 61.1% of the top 25 reported a shortage of ART in the past 12 months. This shows the limited supply and access of ART for MSM and FSW populations. At the centers identified for HIV/AIDS treatment and prevention by the highest numbers of MSM and FSW, 4 provided ART specifically for MSM and/or FSW populations in the past month. As demonstrated earlier in this report, MSM and FSW populations in Cameroon have a high burden of HIV, and ART is critical to treat individuals living with HIV as well as lower their HIV viral load and reduce the risk of transmission.

Condom availability and access is demonstrated in **Table 65** (p. 193). Less than half of the most cited centers have had consistent availability of condoms in the past 12 months. All of those centers reported a willingness to distribute condoms, but 16.7% had not had condoms available in the past year. Furthermore, only 32.0% of those centers had male condoms and female condoms available on the day they were surveyed. Access to condoms is essential for MSM and FSW to follow safe sex practices. An even higher percentage of the total sample of health centers did not have male or female condoms available on the day of survey, 49.0% and 57.6% respectively, and 30.9% of the total sample had not had condoms available in the past 12 months.

Another characteristic of the health centers that is presented in **Table 66** (p. 194) is the cost of HIV services. The majority of centers in the total sample (78.4%) and the 25 most cited (64.0%) have user fees in place for at least one service. There is a registration fee for members at 55.0% of the most cited centers and a consultation fee at 61.9% of the most cited centers. User fees can be a significant barrier to care, particularly for the FSW population. The existence of user fees may prohibit women from

accessing care due to financial constraints. Most of the centers, 83.3% of the top cited, do offer exemptions or discounts for some clients, but the extent of these exemptions is unclear. MSM and FSW populations need to engage in care and remain financially able to receive follow up care from healthcare providers.

The following sections examine the health system of each city in greater depth. Maps illustrating the location of HIV treatment and prevention services are given in previous sections.

Health service assessment: City-specific breakdown

Bamenda. Eight services mentioned by MSM were visited in Bamenda including three public and five private facilities. Information from one of the services was not possible to obtain, as the service itself refused to respond or consent to participate in this study. One of the services was a PEPFAR HAPP funded Drop-In Center which reported specialized training for staff in dealing with MSM or FSW, however this service had limited capacity to care for and treat patients living with HIV and instead mainly referred patients to other services. All of the services had provided HCT in the past month and the Drop-in Center cited above had offered specialized sessions (for FSW or MSM). Six of the eight services had provided ART medication in the past month and three of these reported ART shortages in the past 12 months.

Of the top listed services/centers, one declined to participate in the study, and the other three reported providing ART medication for people living with HIV/AIDS. One facility reported specialized training for serving FSW only. This hospital had received support and training through PEPFAR HAPP program in order to manage referrals from the CBO specifically working with FSW in the city.

Nine services mentioned by FSW were visited in Bamenda, including two public facilities, six private and one CBO. Responses are not available for one public service (PMI Nkwen). Two of the services reported specialized training for staff in dealing with MSM or FSW. All of the services except the CBO had offered HCT in the past month and one had offered specialized sessions (for FSW or MSM), seven of the nine services had provided ART medication in the past month and four of these reported ART shortages in the past 12 months.

The populations in Bamenda had the highest numbers of individuals who had sought or received HIV prevention, care and treatment services, with only 2.2% of FSW and 3.9% of MSM reporting not receiving any HIV service. Disclosure when seeking services, however, was reported as minimal and qualitative data indicates that these populations in Bamenda feel highly stigmatized and more hidden than their counterparts in other cities. Religious practices and a smaller population were cited as some of the reasons for these feelings among the population.

Bafoussam. Eight services mentioned by MSM were visited in Bafoussam, including five public facilities, two private facilities and one CBO. Three of the services reported specialized training for staff in dealing with MSM or FSW; however, two were associations, not clinical service providers. All of the

services/centers had offered HCT in the past month and one association had offered specialized sessions for MSM. Two of the seven services had provided ART medication in the past month. Of the three top services listed by the MSM population, one was an association with only HCT capacity, and the other two services were public hospitals. One of these two public hospitals was visited and reported providing ART medication, no staff training for MSM/FSW service provision, and ART shortages in the past twelve months.

Ten services mentioned by FSW were visited in Bafoussam, including five public facilities, and five private clinics. Two of the services reported specialized training for staff in health management with MSM or FSW. All of the services had offered HCT in the past month, but none had offered specialized sessions (for FSW), three of the services had provided ART medication in the past month and one of these reported ART shortages in the past 12 months. Of the two top services listed by FSW, both were public hospitals that provided a diverse amount of services, which included PMTCT and family planning facilities. However, of the two, one reported ART shortages in the past 12 months.

In Bafoussam, 5.6% of the MSM sample and 5.5% of the FSW sample reported not going to any service for HIV prevention, treatment or care.

Bertoua. Six services mentioned by MSM were visited in Bertoua, including four public facilities, and two private. Two of the services reported specialized training for staff in dealing with MSM or FSW. All of the services had offered HCT in the past month and one, which was an association, had offered specialized sessions (for MSM or FSW), three of the six services had provided ART medication in the past month and all of these reported ART shortages in the past 12 months.

Of the top three services listed, none had specialized training on the health needs of MSM or FSW, two of the three provided ART medication and both reported ART stock outages in the past 12 months.

Eight services mentioned by FSW were visited in Bertoua, including four public facilities, three private and one CBO. Four of the services reported specialized training for staff in dealing with MSM or FSW. All of the services had offered HCT in the past month and three had offered specialized sessions (for MSM or FSW), four services had provided ART medication in the past month and all of these reported ART shortages in the past 12 months. Of the top five services or centers listed by FSW, two of them provided ART mediation in the past 12 months and both reported ART stock outages (the same two listed by the MSM population).

It is noteworthy that the centers that reported specialized FSW/MSM activity were PEPFAR-funded localities, and also did not provide care and treatment services.

In Bertoua, 4.9% of the MSM population and 9.6% of the FSW population reported seeking, knowing or receiving no HIV prevention, care or treatment service.

Douala. Twenty services mentioned by MSM were visited in Douala, including ten public facilities, seven private and three CBOs. Eight of the 20 services reported specialized training for staff in dealing with

MSM or FSW. All except one had offered HCT in the past month and three had offered specialized sessions (for MSM or FSW), 14 had provided ART medication in the past month, and all but only two reported ART shortages in the past 12 months. Of the top three services listed, the only one that reported providing ART medication in the past 4 weeks, also reported shortages in the past 12 months.

Nineteen services mentioned by FSW were visited in Douala including ten public facilities, five private and four CBOs. Nine of the 19 services reported specialized training for staff in dealing with MSM or FSW. All except one had offered HCT in the past month and six had undertaken specialized sessions (for MSM or FSW), fourteen had provided ART medication in the past month and only one of these reported no ART shortages in the past 12 months. Only one health service in Douala was cited by more than 10% of FSW. That one service (Baptist Health Center) had no staff trained specifically on the health needs of FSW and MSM, though it did provide ART medication, and also reported having had a stock shortage in the past 12 months.

Douala has the highest disclosure of sexual orientation by MSM to a health provider of all the cities. Douala also has the longest-standing MSM-specific clinic in Cameroon. Alternatives Cameroon is the oldest association in the country that is specifically for the MSM population. Alternatives was the most commonly cited center by MSM in Douala. Additionally, Alternatives has been shown to be effective at reaching high levels of the MSM population in previous studies. In 2011 74.3% of MSM participants reported having accessed the Access Center clinic at Alternatives or being reached by a peer educator or outreach worker (CARE, 2012). The existence of an MSM stand-alone clinic has helped connect a high proportion of MSM to HIV services in Douala and contributes to greater disclosure of sexual orientation to a healthcare provider in the city.

In Douala, 4.8% of MSM and 6.3% of FSW reported seeking, knowing, or receiving no HIV prevention, care or treatment service.

Kribi. Seven services mentioned by MSM were visited in Kribi, including three public facilities, two private facilities and one CBO; however, it was not possible to obtain information from one of the services, Hopital d'Ebome. Four of the six services reported specialized training for staff in dealing with MSM or FSW. Five had offered HCT in the past month and one had offered specialized sessions (for MSM or FSW), two had provided ART medication in the past month and neither of these reported ART shortages in the past 12 months. Two services were cited by more than 10% of the MSM population in Kribi, one provided clinical services, including ART medications, and the other was the PEPFAR-funded drop-in center with no clinical capacity. The one clinical service in Kribi reported no ART medication stock outages in the past 12 months.

Nine services mentioned by FSW were visited in Kribi including three public facilities, three private and three CBOs; however, it was not possible to obtain information from one of the services, Hopital d'Ebome. Four of the nine services reported specialized training for staff in dealing with MSM or FSW. Six had offered HCT in the past month and one had offered specialized sessions (for MSM or FSW), two

had provided ART medication in the past month and neither of these reported ART shortages in the past 12 months.

The FSW population in Kribi listed the same two services as the MSM population, with one clinical service and the other a CBO with HCT capacity and a referral system for individuals living with HIV.

Of all the cities, Kribi had the highest percentage of each population that reported seeking or receiving no HIV prevention, care or treatment, with 29.8% of MSM and 33.3% of FSW.

Ngaoundere. Eight services mentioned by MSM were visited in Ngaoundere, including four public facilities, and four private clinics. Two of the six services reported specialized training for staff in dealing with MSM or FSW. All had offered HCT in the past month and one had offered specialized sessions (for MSM or FSW), five had provided ART medication in the past month and two reported ART shortages in the past 12 months. Of the two top services listed, both reported providing ART medication and one reported an ART stock shortage in the past 12 months. Ngaoundere was one of the few cities visited with no specific CBO specializing in MSM or FSW interventions. Through this study, a satellite office of another MSM-specific CBO was created and registered in the city.

Six services mentioned by FSW were visited in Ngaoundere, including three public facilities and three private clinics. One of the six services reported specialized training for staff in dealing with MSM or FSW. All had offered HCT in the past month and one had offered specialized sessions (for MSM or FSW), five had provided ART medication in the past month and three reported ART shortages in the past 12 months. The FSW population listed the same two top services as the MSM population in Ngaoundere, as well as one other public health center. This health center reported providing ART medication and had had an ART medication shortage in the past 12 months.

In Ngaoundere, 4.2% FSW and 5.6% MSM reported seeking, knowing, or receiving no HIV prevention, care or treatment service.

Yaoundé. Nineteen services mentioned by MSM were visited in Yaoundé, including ten public facilities, four private clinics and five CBO/NGOs. Thirteen out of 19 services reported specialized training for staff in dealing with MSM or FSW. Seventeen had offered HCT in the past month and four had offered specialized sessions (for MSM or FSW), twelve had provided ART medication in the past month and only one did not report ART shortages in the past 12 months. It is noteworthy that of the four services mentioned by at least 10% of the population, three are associations with limited HCT facilities and no clinical provision. Only one of the top four (Hopital Central) reported having ART capacity in the past four weeks, while also experiencing at least one ART stock outage in the past 12 months. Additionally, the most frequently cited center by MSM was Humanity First with 40.1% of participants identifying it, while the next highest center was only identified by 19.7% of the population. In 2011 41.8% of MSM reported having accessed the CAMNAFAW clinic or being reached by Humanity First peer educators or outreach workers in the previous 12 months (CARE, 2012). In both CARE (2012) and the current study, Humanity First has only been able to reach approximately 40% of the MSM population in the city.

Although Humanity First has not reached the majority of MSM participants, it is the most commonly cited service center. This represents a lack of clinical services in Yaoundé since Humanity First does not provide HIV testing or ART medication. MSM in Yaoundé are largely not connected to centers that provide HIV testing, treatment or care.

The low levels of access to HIV services are further evidenced in both MSM and FSW populations by the percent of participants in the city who failed to identify any health centers that provide HIV services. Of all the cities, Yaoundé had the second highest number of each population that reported not seeking or receiving HIV prevention, care and treatment, with 20.4% MSM and 17.2% of FSW reporting seeking or receiving no health services.

Eighteen services mentioned by FSW were visited in Yaoundé, including 12 public facilities, three private clinics and three CBO/NGOs. Eleven services reported specialized training for staff in dealing with MSM or FSW. Seventeen had offered HCT in the past month and three had offered specialized sessions (for MSM or FSW), 12 had provided ART medication in the past month and only two did not report ART shortages in the past 12 months.

Of the two top services cited by the FSW population, only one had HIV clinical capacity, as the other was Horizon Femme, the PEPFAR HAPP-funded association that provides HCT and referral to clinical services in Yaoundé and Douala. It is noteworthy that 17.2% of the FSW population in Yaoundé reported not seeking or receiving any HIV prevention, care or treatment services. Overall, this implies the coverage of clinical services for the FSW population in Yaoundé is limited.

DISCUSSION

Researchers in the United States and elsewhere have demonstrated the importance of engaging populations in this continuum of HIV care— from people living with HIV being unaware of their status, through testing, diagnosis, followed by linkage to ongoing care and treatment (Beyrer et al., 2011; Gardner et al., 2011). In two recent studies in the United States, researchers found that due to advances in ART regimes, with 70-80% adherence to ART by participants, durable viral suppression occurred in most individuals, lowering the possibility for onward HIV transmission (Bangsberg, 2006; Gardner et al., 2011). The findings indicate that the key to community viral suppression is early diagnosis of the infection, well-developed referral systems to clinical services, and care and support programs that encourage adherence and access to treatment (Beyrer et al., 2011). This approach has been shown to be effective in contexts with both high and low HIV prevalence, and recent research from South Africa affirms that adequate ART coverage at the community level reduces HIV incidence over time (Tanser et al., 2013). Thus, HIV prevention programs are beginning to show that distribution of prevention commodities and messages should be in concert with interventions that address the virology and biomedical aspects of care and treatment (Beyrer et al., 2011). This is even more relevant for KP who carry a significant burden of disease and is the framework for the results discussed in this section of the R2P report.

Burkina Faso

The overall MSM participant sample obtained in Burkina Faso was relatively young. Older participants were actively recruited through social and community networks, however many refused to participate in the study if they had to participate in a clinic setting. Quite a few said they would be willing to participate in the quantitative portion of the study if the team could conduct the study at their houses or a location of their choice. Since this was logistically impossible, the majority of the quantitative sample in Burkina Faso remained under 29 years of age; however, older MSM were recruited into the qualitative portion of the study. Distinct fear of association or being “outed” displays the societal pressure and hidden nature of MSM in the country. This fear was also elaborated in the qualitative results, and discussions regarding marriage due to family or societal pressure were repeatedly noted.

The HIV prevalence among MSM in both Ouagadougou (4.7%) and Bobo-Dioulasso (4.9%) indicates a limited epidemic among the population compared to other MSM communities globally, however higher than the general population prevalence in Burkina Faso of 1.0% (UNAIDS, 2013). The prevalence among MSM over 30 years old in this study is an important example of the increased risk of having HIV with age, as 25.0% of the individuals living with HIV in Ouagadougou, and 56.3% of the individuals living with HIV in Bobo-Dioulasso were over 30. Importantly, key risk factors exist among the populations which are similar to other MSM communities in other contexts, and the limited prevalence among this sample may be attributable to the younger age of the sampled population more than other risks factors. For example, around half of both city populations reported female sexual partners and limited knowledge of

the risk associated with anal sex. Condom use was cited to be relatively high with casual male partners (>60%), but decreased to only half of the participants when asked about main male and female partners.

Human rights violations noted by MSM participants warrant further investigation. While 14.8% and 15.6% of the sample in Ouagadougou and Bobo-Dioulasso respectively reported ever being forced to have sex, of the individuals living with HIV 40.4% in Ouagadougou and 23.7% in Bobo-Dioulasso reported having this experience on at least one occasion. Verbal harassment was reported, with higher reported incidents by MSM in Bobo-Dioulasso compared to Ouagadougou (44.8% and 34.8% respectively), as was experiencing physically aggression (42.3% in Bobo-Dioulasso). These results indicate a substantial amount of MSM experience physical and verbal abuse in Burkina Faso and these violations could have other repercussions to the overall health of the community. Fear of accessing health service was reported by about 40% of participants in Ouagadougou and ¼ of the participants in Bobo-Dioulasso. Few individuals reported being denied health services, but a substantial amount reported avoiding health services (36.0% in Ouagadougou and 20.1% in Bobo-Dioulasso).

The FSW populations that participated in the Burkina Faso R2P study were distinctly different per city of implementation. The sample in Ouagadougou was substantially younger than their counterparts in Bobo-Dioulasso, fewer had ever been married, more had some education, and less were born in Burkina Faso, though the majority of both populations were Burkinabe. The HIV prevalence found in the populations was also substantially different with almost a third of the population in Bobo-Dioulasso living with HIV (32.9%) compared to around 8.9% in Ouagadougou. RDS adjusted prevalence for Ouagadougou increased the proportion to 14.4% (95% CI 7.9-24.6) in Ouagadougou. Interestingly, syphilis prevalence was also higher in Bobo-Dioulasso compared to Ouagadougou, though about half of both populations reported experiencing at least one symptom of an STI in the past 12 months. These results concur with the MSM results that indicate risk for HIV increases with age, as exposure, types of partners, and marital status change over time.

The ability to negotiate condoms was reported at relatively high levels with new clients and regular clients in both cities, however difficultly with the negotiation of condoms with non-paying partners was reported by roughly 40% of the participants in Ouagadougou and over half in Bobo-Dioulasso. The overall inconsistent use of condoms among both populations with regular partners in correspondence with the prevalence found in this study is an important determinant of the health needs and targeted prevention programming for KP in Burkina Faso and across WCA. Given the findings on abortion and high interest in avoiding pregnancy among FSW, there are potential needs for better family planning access.

A limited percentage of the participants in each city reported disclosure of their profession to family members, and qualitative data from Burkina Faso indicates rejection, seclusion, and limited support from family members if the profession is discovered. Discrimination by family members was reported by almost one-third of the population in both cities. Qualitative results also elucidate police harassment and limited protection by authorities, even if sex work is not technically illegal in Burkina Faso.

Quantitative results are consistent with these findings, and high levels of harassment or intimidation by police were reported, especially in Bobo-Dioulasso (48.4% and 28.9% in Ouagadougou). Verbal harassment was reported by over half of each population, and physical aggression was as high as 72.4% in Ouagadougou and 51.4% in Bobo-Dioulasso. Torture was widely reported in Bobo-Dioulasso (58.3%) and Ouagadougou (30.6%) and further investigation into the perpetrators and definition of torture is essential. Torture was not defined in the questionnaire; it was left to participants' interpretation. Ever being forced to have sex was reported by roughly 40% of each FSW population, and the overall results of the human rights experiences in Burkina Faso imply substantially difficult conditions for FSW in the country. Sexual and physical violence are contributing risk factors for HIV disease acquisition, and identifying the underlying cause and possible prevention programs for FSW that places the impetus on the violators and police in both cities and throughout Burkina Faso will be essential in future HIV prevention programming.

Emerging HIV research indicates that investing in and targeting high risk populations in the cascade or continuum of care for HIV is the best way to improve their health and also support population-level HIV prevention and control. In concentrated, mixed or low-level generalized epidemics, researchers have asserted that ensuring effective engagement in the HIV continuum is essential for KP disproportionately affected by HIV (Baral et al., 2012; Beyrer et al., 2012; Gardner et al., 2011). Specific prevention programs in Burkina Faso must also address the regional distribution of HIV in the country. Since prevalence is lower in Ouagadougou, developing integrated and comprehensive prevention programs that integrate regular testing, access to condoms and health services are essential. In Bobo-Dioulasso, along with tailored prevention programming, ensuring FSW living with HIV have access to comprehensive HIV treatment services, well equipped and able to address the needs of this high risk population will be key in the reduction of HIV transmission in the city.

Togo

HIV prevalence was higher among MSM in Lomé than in Kara. Therefore in Lomé an emphasis on prevention efforts for those not living with HIV as well as linking those living with HIV into care is warranted. Though HIV prevalence among MSM in Kara was limited, few had been tested for HIV more than once, blackmail was more commonly reported, a high percentage reported it was difficult to insist on condom use, condom use levels were lower than in Lomé, and knowledge levels about water-based lubricants and the risks associated with receptive anal sex were low. This suggests that low HIV prevalence in this population is not necessarily due to lower behavioral or social factors but rather that HIV has not been introduced into the sexual networks in this area. If HIV was introduced into the sexual networks of MSM in Kara, the risk factors associated with the spread of HIV among other MSM communities would potentially facilitate the spread of HIV among this sexual network, due to the lack of knowledge of HIV prevention methods and less safe behaviors reported by MSM in the city. Therefore, MSM in Kara cannot be ignored in HIV prevention efforts and specialized HIV prevention programs for MSM have an important role to play in Kara and the surrounding area.

Few MSM in Togo knew that receptive anal sex carries the highest risk of HIV acquisition, while nearly all knew that HIV could be spread through sharing needles. This suggests that while information about HIV prevention may have been received, key facts related to specific risks for MSM are not generally known among the population.

Among FSW in Togo, HIV prevalence was also higher in Lomé than in Kara. As previous studies have shown, condom use with non-paying partners was much less common than with clients. Interestingly, a much greater proportion of FSW in Kara reported condom use at last sex with a non-paying partner than FSW in Lomé. There were other differences between the cities; over twice as many FSW in Lomé had been tested for an STI in the past 12 months, and FSW in Kara were more likely to report difficult access to lubricants. This suggests that services such as testing and providing lubricants may be needed in Kara. As suggested by participants in the qualitative component of the study, this could be in one location where women could access multiple types of services.

In both cities, a substantial number of FSW reported they had been blackmailed, verbally harassed, or harassed or intimidated by police. This is consistent with qualitative data showing that FSW are subject to insults from their communities and stigmatization from the media.

Most FSW had children and reported it was important for them to avoid pregnancy, while a substantial number reported they had an unplanned pregnancy or an abortion. This suggests FSW have significant reproductive-health related needs and integrated sexual and reproductive health services may greatly increase the overall health of the community.

High levels of social cohesion were reported by both populations in Togo. Programs and services could leverage this existing social capital to deliver information and services.

Cameroon

The results of this study indicate that the behavioral and structural risks associated with higher exposure to HIV and other STIs that exist among KP in other contexts also exist for MSM and FSW in Cameroon. Among the MSM population, while the vast majority of the population sampled was not officially married, 57.1% reported at least one or more regular female partner. Condom use among MSM was low with female partners (33.1% had used male condoms during every sexual act with a woman in the past month), and very few reported the use of female condoms during every sexual act in the past month (1.36%). Among male sexual partners, 53.3% of the population reported they used male condoms during every anal sex act in the past month. These results are similar to earlier results (CARE, 2012; Park et al., 2013) among MSM in Douala and Yaoundé and indicates further behavioral prevention messaging is necessary to address concurrent sexual partners and condom use during all sex acts among this population. Qualitative research elucidated the lack of tailored messaging in prevention programs for same-sex practices, and clarification of the risks associated with same sex practices and concurrency was suggested.

Among FSW, there was a high mean number of clients within the past month across all cities (109.5), and a consistent number of non-paying sexual partners (mean=1.2). A high percentage of FSW in the sample reported it was easy to suggest condom usage with a client (84.4%), but just 59.8% reported it was easy to suggest condom use to non-paying partners. The vast majority of FSW had been offered more money to have sex without a condom, with half reporting this experience in the past week, and one quarter reporting this in the month. Consistent male condom usage with clients was around 40%, however only 13.1% and 14.6% of the population reported using condoms with non-paying partners every time or almost every time they engaged in vaginal sex within the past month, respectively. These data are not surprising and correspond to similar data from the 2009 and 2004 FSW seroprevalence reports from Cameroon (Mosoko et al., 2004; Tamoufe & Medang, 2009). It is recommended that prevention messaging specifically adapted for FSW is developed to address condom use with various types of sexual partners.

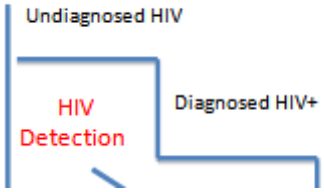
The data from this study indicate further research into reproductive health and family planning services for FSW is warranted as the percentage of FSW who reported having one or more child was 81.3% (1301/1600). This level of motherhood and the known burden of disease among these women imply the services for these women should not be restricted to only the prevention of HIV, and should better address the overall reproductive health needs of the population. In other contexts, we see evidence that antenatal care clinics are an important point of entry into health services, and specifically HIV prevention or care services, and further understanding of the access to health services during pregnancy for FSW (and in relations to PMTCT) in Cameroon is essential (Wilcher et al., 2013). Mothers may also be more likely to access health services in relation to their children's needs, and developing comprehensive services that include reproductive health, sexual health and maternal and child health may increase the chances of integration into the health system for women who sell sex and are at higher risk of HIV infection.

Using the continuum of care as a framework for analyzing the results of this study, we examine the barriers and integration of KP into health services, and specifically health services that provide HIV testing, counseling and ART.

Step one: Structural barriers to health services and community health

In the context of the continuum of HIV care, structural barriers can be created by the fear of seeking health services or by systematic aggression at the community level. In this study, a low percentage of individuals reported having a negative experience or being denied healthcare at health facilities (5.76% and 8.31% of MSM; 5.4% and 3.2% of FSW), however, only a quarter to a third of the two populations reported that they revealed their sexual orientation or behavior to a healthcare provider.

Figure 1. Structural barriers to health services and community health



Of the MSM participants, only one-quarter had revealed their sexual orientation to a doctor or nurse, however, this varied from 11.3% in Bertoua to 37.1% in Douala. The cities with no specialized clinical services for MSM were the cities with the lowest levels of disclosure to medical personnel (Bafoussam 23.1%, Bamenda 25.7%, Bertoua 11.3% and Ngaoundere 23.0%). Of the total MSM population, 7.5% were not able to list a single HIV prevention, testing or treatment service. Among the FSW population, roughly 33% had disclosed their occupation to a doctor or nurse, however, this varied from 17.3% in Ngaoundere to 49.4% in Bertoua, and 9.6% of FSW participants were not able to list a single HIV prevention, testing or treatment service. Of the FSW population, 13.0% reported being afraid to access health services. The percentage of MSM and FSW who did not identify any HIV health services also varied by city with the highest percentages in Kribi where 29.8% among MSM and 33.7% among FSW reported no health services access.

Understanding the barriers to healthcare for these populations and the reasons for a lack of disclosure, and what barriers prohibited the percentage that reported accessing no HIV prevention or treatment service is imperative for HIV prevention and control. Stigma and discrimination at the community level has also shown to result in an avoidance of health services by MSM and FSW communities (Baral et al., 2009). Possible barriers noted in the qualitative data included fear of stigmatization and/or discrimination at the health provider level, particularly from nurses or lower-level health staff, and user fees.

For MSM, the exposure of their sexual orientation potentiates extortion, as 39.8% reported ever being blackmailed, and individuals whose families knew about their sexual orientation were 2 times more likely to have been blackmailed (OR 2.02; 95% CI 1.63 – 2.51). Arrests of MSM also facilitate their vulnerability to extortion or blackmail. As noted in the results section of this report, arrest because of sexual orientation was reported by 7.7% of MSM across cities, varying from 0.81% in Bamenda to 15.8% in Kribi. Having spent time in jail cells or prison because of sexual orientation was reported at 5.3% and varied from 0.0% in Bamenda and two cities recorded double digit percentages: 13.7% (Kribi) and 12.1% (Douala). These figures correspond to the official Ministry of Justice Human Rights Reports from 2010 and 2011, which reported 50 to 60 investigations, prosecutions, hearing and convictions/dismissals over a two-year period. Thus, there is a realistic fear of potential prosecution if individuals' sexual orientation is revealed and anxiety to not reveal orientation at the personal, community and health provider level is

not surprising. This is an important structural barrier that could inhibit an individual's ability to seek health services and ultimately appropriately treat HIV infection over the course of their sexual life.

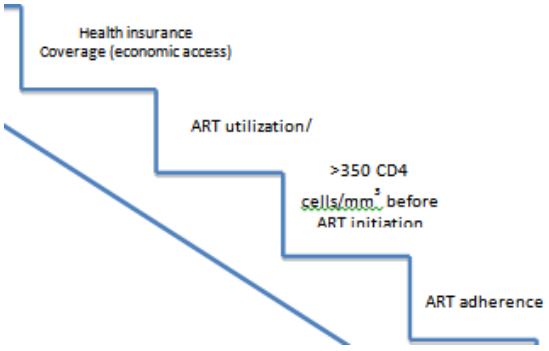
Over half of the FSW population also reported being blackmailed (55.1%) and 40.0% reporting being beaten. These high numbers indicate that violence and extortion occurs regularly against the FSW population in Cameroon and warrant further investigation. While reported arrests were limited in this population, over half the population reporting blackmail indicates some level of vulnerability at a community level. This fear may also impede FSW to disclose sexual behavior and needs at the health provider level. We propose further qualitative work to investigate this issue of FSW blackmail.

The sexual violence reported in both populations is also significant (27.3% among MSM and 45.9% among FSW reported being forced to have sex at least one time) and in the context of the continuum of care, highlights an even greater need for tailored HIV testing, post-exposure prophylaxis (PEP), counseling services and legal support for this population to manage exposure during sexual violence, protection against this violence, and mental health services to address the reactions to these traumatic experiences. The reality that roughly half the FSW participants reported at least one experience of forced sex highlights a significant need and vulnerability amongst this population. The qualitative data further elucidated these violations and detailed aggression by clients as well as authority figures.

The development of specialized prevention messaging and capacity building for community-based and peer educator programs can also improve continued access to HCT and subsequent early detection of HIV. The results of this study show that 89.4% of MSM participants and 89.8% of FSW participants reported having ever been tested for HIV. Although high levels of ever testing are seen in both populations it is important for MSM and FSW to remain connected to testing services to ensure early detection of any new HIV infections.

Step two: Access to HIV treatment services

Figure 2. Access to HIV treatment services



While access to services that reported HIV testing and counseling (of the top cited services, 92.0%) is high among the populations who cite access to HIV prevention and care, attendance to care and treatment centers is low (52.0% reported providing ART in the past four months). Concurrently a portion of the study participants (7.5% MSM; 9.6% FSW) and a substantial portion of participants in Kribi (29.8% MSM; 33.3% FSW) and Yaoundé (20.4% MSM; 17.2% FSW) indicate they access no HIV prevention, care or treatment service.

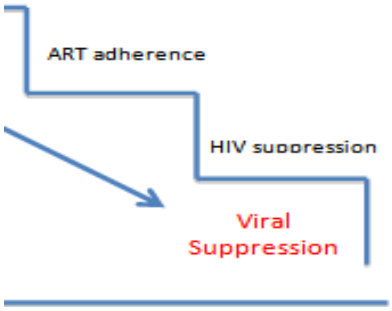
Of the services listed by at least 10% of one population per city 52.0% (13/25) provided ART care and treatment for people living with HIV (PLWHIV) and 16.0% (4/25) provided ART specifically for KP. Of the 52.0% reported to provide ART services, 61.1% (8/13) reported having an ARV stock outage in the past 12 months. These results are contextualized by the national shortages experienced in Cameroon between 2012 and 2013. National-level negotiations with the key external ART funder in Cameroon, the Global Fund to Fight AIDS, Tuberculosis, and Malaria, and alterations in the funding mechanism resulted in stock outages of ART commodities at the centralized supply system. Nevertheless, this indicates there is a significant gap in the care and treatment needs of the populations with high HIV prevalence, in relation to the services they are accessing. If individuals are initiated on ART and then unable to continue due to limited availability of the medication in the country, multiple potential outcomes can occur including drug resistance to the particular ART, and an increase of the viral load in an individual, causing an increase in the person's ability to transmit the virus to sexual partners if appropriate protection is not utilized.

Fees attached to services were reported in the top 25 services, with 64.0% indicating there was at least one fee attached to their service delivery, including consultation fees (61.9%), medication fees (33.3%), and laboratory or test fees (50.0%). User fees can be a significant barrier to care, particularly for the FSW population. The existence of user fees may prohibit women from accessing care due to financial constraints. Most of the centers (83.3% of the most cited) do offer exemptions or discounts for some clients, but the extent of these exemptions is unclear.

As shown in **Table 61**, of the health services cited by the top 10% of the populations per city, 34.8% (8/23) were PEPFAR-specific services (compared to 13.3% (13/98) in the overall health service sample), therefore tailored drop-in centers appear to effectively accommodate the health needs and prevention messages to FSW and MSM. Almost none of these services provide clinical HIV services indicating that focused services through CBOs could have a high impact in the overall integration of KP into the continuum of care. In other contexts, community-based groups have acted as social workers, or volunteer health workers to initiate HIV testing and counseling, provide psycho-social support to community members living with HIV, and accompany individuals to care and treatment centers.

Step Three: ART adherence and viral suppression

Figure 3. ART adherence and viral suppression.



In this study, a limited number of the sample from both populations reported living with HIV. Prevalence measured using biological testing has previously been reported to be approximately 37% nationally for these populations and in some regions like the Adamaoua an HIV prevalence of 48.4% HIV was estimated for FSW in 2009 (Tamoufe & Medang, 2009). In addition, 44.4% (95% CI 35.7 -53.2) of MSM were found to be living with HIV in Yaoundé (Park et al., 2013). Thus, the low percentages of people self-reporting living with HIV appear to be disconnected from the actual burden of HIV. Across cities, reported HIV status varied, and in the Douala, the city with the longest-standing MSM-specific association, the population self-reported the highest prevalence (18.0%). We know from the IBBS conducted in 2012 that prevalence among MSM in Douala was 25.5% (95% CI 19.1-31.9) (Park et al., 2013). For FSW, there are further examples of this disconnect, for example, in Ngaoundere no participant reported living with HIV (0.0%), however, data from the 2009 national FSW seroprevalence study reported 51.2% prevalence among FSW in Ngaoundere (Tamoufe & Medang, 2009). While this is not extraordinary as self-reporting and a lack of disclosure has been seen consistently across studies that include self-reported HIV status, it does reflect the populations' reticence to disclose, denial or their lack of knowledge of their status. Since 89.8% and 89.4% of FSW and MSM respectively reported having been tested and knowing their HIV status, it appears there was a tendency not to disclose.

While there was limited disclosure, the number of MSM and FSW who reported living with HIV and receiving treatment was high, at 64.2% of FSW and 75.5% of MSM respectively. Interestingly, only 18.5% of the FSW living with HIV not receiving treatment received a CD4 test result, and 25.9% had been told by a healthcare professional they needed to be on treatment. Similarly, 45.5% of the MSM population that reported living with HIV but not receiving treatment had been told by a health professional they needed treatment, though 73.9%reported having received the results of their CD4 test. These numbers indicate that while some services may be accessed at one period of time, regular follow up in HIV care and treatment services, including regular receipt of CD4 counts, and initiation of ART if needed does not occur systematically among these KP. This and the low number of participants that reported being on treatment indicates that the viral suppression in both FSW and MSM is incomplete and transmission and acquisition rates among this population may be active with limited restriction.

Conclusions

Review of the HIV epidemic in WCA suggests that the epidemic is relatively concentrated and more closely resembles HIV epidemics in Southeast Asia and Latin America than the rest of SSA. This highlights the importance of providing adapted and inclusive HIV prevention, care and treatment services to KP, such as FSW and MSM, who are more highly affected by the epidemic in the region. The epidemiology of HIV in Burkina Faso, Togo and Cameroon suggests these countries are not different from other central and west African countries with data regarding KP, and targeted, cost-effective programs that address not only behavioral, but biological and structural risk factors associated with HIV acquisition and transmission in KP should be implemented to reduce the onward spread of HIV. Prevention programs should model strategies on the continuum of care and appropriate programs that increase uptake of treatment among KP, address the barriers to healthcare that exist in highly stigmatized settings, and ultimately reduce community viral loads and transmission.

Structural barriers to health services for KP include stigma and discrimination, the inability to disclose sexual practices and health needs to health practitioners, and economic limitations to seeking services. Some of these barriers seem to be overcome when specific CBO associations or services are developed to create safe spaces for the population to discuss health issues. While specialized CBOs exist in Cameroon, they are limited, and few exist in Burkina Faso and Togo. Where expertise exists, the clinical capacity of these groups is limited and could be scaled up to provide further HIV care and treatment services to the population. Concurrently, the population also attends general population health services, and in this context disclosure of their sexual orientation or behavior is limited. Developing tailored services for KP, integrated into general population services may avoid community-level stigma and discrimination from deterring individuals from accessing services. The regional disparities of the results also indicate local models should be developed on a city-by-city or region-by-region basis, and community structures should facilitate the relationship between the community and integrated health services.

MSM

The diversity of results across cities for MSM highlights the needs for tailored services per city that account for the social and cultural dynamics across the three countries. In cities where tailored service existed, higher levels of HIV status knowledge, discloser to health providers, and condom use among both male and female partners was reported. Health providers were cited as a source for HIV prevention information, as were peer-educators, mainly supported through PEPFAR HAPP program. Combining programs that integrate community-level interventions (CBOs, peer educators, counseling) with support and links to HIV care and treatment services (integrated into public or private health services, or stand-alone), will greatly alter the uptake of care and treatment services among MSM in Burkina Faso, Togo and Cameroon.

FSW

The diversity of results among FSW across cities is noteworthy, though common risk factors indicate prevention programs must focus on condoms with non-paying partners, and reducing the risks of sexual

violence including access to PEP. HIV services in collaboration with or integrated into family planning or reproductive health services may greatly increase the uptake of HIV care and treatment among FSW. Addressing user fees and economics barriers to healthcare for this population may also significantly assist adherence to ART. Implementing regional specific models of care will also benefit the diverse FSW populations across the three countries and within the region of WCA. Community-level interventions, where peer educators and counselors are trained in the specific needs of FSW have shown relative success in increasing FSW use of condoms with clients, and linking these community based services to specialized care and treatment facilities will greatly assist the uptake among FSW in HIV specific health services.

RECOMMENDATIONS

- The results of this study indicate a great diversity of access to healthcare between cities and reported stigma at the health provider level (i.e., the percentage of those who had been tested, percentage on treatment, percentage who reported accessing no services). Due to these regional differences, tailored, city-by-city service delivery models specifically designed to ensure ARV adherence and prevention of HIV transmission among KP is recommended within these countries, as is an assessment of non-limiting user fees. Potential models include both integrated (i.e., trained personnel in a general population health facility, such as a hospital or regional referral center) and stand-alone (associations or clinics specifically designed and administered to care for KP), or hybrid (prevention through community groups and specific services for KP integrated in existing HIV or STI-specific services).

- Implementation research into the use of integrated, stand-alone, and hybrid models to deliver specialized services for MSM and FSW populations is needed to measure efficacy, adherence, and ultimately long term community viral load response. Cost-effectiveness and sustainability studies are needed to compare these models.

- The lack of sexual orientation or sex work disclosure to health providers, the limited reporting of service access and the low self-reported HIV prevalence indicates there is a lack of services where KP feel comfortable to disclose their health needs. In some contexts, such as in Douala, Cameroon, the presence of clinical services in a specialized MSM/FSW health center has allowed development of clinical staff expertise in treating these populations. The need for health worker training is also demonstrated by the low percentage of health centers reporting that staff is trained in MSM/FSW health needs. Ensuring that security and reception staff is also trained will be necessary to lessen barriers of entry. Partnerships and training exchanges between the specialized service settings and the general population service settings will allow these competencies to be transferred to general population services.

- The results of this study indicate that while a large percentage of KP have been tested for HIV at least once in their lives, the percent of individuals living with HIV who have been integrated into HIV care and treatment services remains low. This illustrates a need for stronger referrals from testing centers into treatment services. Agreements should be developed between CBOs, NGOs, or other centers providing testing and prevention materials and health centers that provide clinical treatment and ART. This is particularly important as no CBOs are currently authorized as ART providers in any of the three countries of implementation. As integrated and hybrid models of care are developed a formal link from prevention centers and MSM/FSW associations to clinical health centers must be established.

- This study identified CBOs and peer educators as effective delivery mechanisms for prevention messaging and psychosocial support for KP. The importance of peer education networks and outreach workers for obtaining HIV information and learning about condom use for both communities was demonstrated in this research. Reinforcing these networks to expand their reach and ensure/maintain quality of information provided is recommended. Such networks also provide a sense of community and a safe space in which to discuss sensitive issues which would not be otherwise possible.

- Research into the effect and long-term adherence to treatment through community-sponsored support systems, such as associations, trained community health workers acting as peer educators and social workers, and developed prevention messages for FSW and MSM is needed as community-based HIV responses are developed.

- While lubrication has become an important health commodity for HIV prevention, access to condom-compatible lubricant was difficult for both populations across all countries. Continued or newly developed subsidization of water-based lubricants, and promotion of usage in health services for KP as well as the general population is recommended across Burkina Faso, Togo and Cameroon.

MSM-specific recommendations

- A limited percentage of the MSM participants across all countries were above the age of 30. However, other research indicates that older MSM are less likely to participate in research studies and also are more likely to be living with HIV (Baral et al., 2012). Ensuring HIV prevention and treatment interventions also target the aging component of the MSM population, which may become difficult to access as the population ages, will be key to ensuring the high numbers of people living with HIV detected in recent studies have good access to treatment and to reduce transmission to younger age groups.

- The demographic results for MSM indicated a significant percentage of study participants were either employed or students across all cities. Ensuring these individuals have access to clinics which are open outside office hours will increase the likelihood of more rapidly diagnosing and treating STIs that could increase the risk of acquiring or transmitting HIV. Also, using the social networks among student MSM may increase the efficacy of HIV prevention messaging that are developed to address MSM specific needs.

FSW-specific recommendations

- The demographic results from this study indicate that the majority of FSW are also mothers (81.3% Cameroon; 69.3% in Burkina Faso; 64.9% in Togo). Given the heightened prevalence of HIV in this population and fertility intentions, PMTCT and family planning services in all three countries should also focus on encouraging uptake of ANC, family planning, and PMTCT services

among pregnant FSW, and best practices for comprehensive health services for these women should be developed.

- The high levels of sexual violence reported by FSW are an important aspect to integrate into HIV prevention services for this population. This includes programs that address societal causes of violence, as well as knowledge and access to health services that provide support and post-exposure prophylaxis (PEP) for women who experience forced sex.

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TABLES

Table 1. Characteristics of key cities in Cameroon used to select study cities

City	Population RGPH 2005 (BUCREP 2009)	Region	University	SW population (Tamoufe & Medang 2009)	KP-specific CBOs present	KP PEPFAR programs	Other comments
Bafoussam	239,287	West	(proximity)	392	Yes	No	
Douala	1,907,479	Littoral	Yes	3,180	Yes	Yes	
Yaoundé	1,817,524	Centre	Yes	2,398	Yes	Yes	
Kribi	59,928	South	No	274	Yes	Yes	Tourism
Ngaoundere	152,698	Adamawa	Yes	442	Yes	No	
Bamenda	269,530	NW	Yes	2,157	Yes	Yes	
Bertoua	88,462	East	No	239	yes	Yes	Trade route
Ebolowa	64,980	South	No	332	None known	No	
Maroua	201,371	Far North	Yes	998	None known	No	Ngaoundere representative
Garoua	235 ,996	North	No	725	None known	No	Ngaoundere representative
Buea	90,088	SW	Yes	60	None known	No	Proximity/exchange with Limbe/Douala
Limbe	84,223	SW	(proximity)	326	None known	No	Tourism, proximity/ exchange with Douala/ Buea, Kribi representative

Table 2. Estimated sex worker population ranges in target cities based on Tamoufe & Medang, 2009

	Sex worker population size estimate low-high season	Number of individuals targeted for inclusion	Percentage of estimated population (based on high numbers)
Yaoundé	1031-2117	300	14.2%
Douala	1382-3496	300	8.6%
Bafoussam	249-417	150	36.0%
Bamenda	312-757	150	19.8%
Bertoua	115-269	150	55.8%
Ngaoundere	226-422	150	35.5%
Kribi	119-231	150	65.0%
Total	**3,434-7,709**	**1,350**	**17.5%**

Table 3. Socio-demographic characteristics of MSM in Burkina Faso

		Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Age	< 21 years old	25.0	38.9 (132)	43.7	[36.9, 50.8]	12.5	30.1 (99)	34.9	[27.3, 43.2]
	21-24 years old	43.8	44.0 (149)	47.0	[40.1, 54.1]	31.3	44.7 (147)	46.1	[38.4, 54.1]
	25-29 years old	6.3	10.9 (37)	7.4	[4.5, 11.9]	0.0	14.6 (48)	12.0	[8.3, 17.1]
	30+ years old	25.0	6.2 (21)	1.9	[0.9, 3.8]	56.3	10.6 (35)	7.0	[4.2, 11.4]
Country of origin	Burkina Faso	75.0	82.6 (280)	80.7	[73.9, 86.1]	81.3	83.6 (275)	85.2	[79.2, 89.7]
	Ghana	0.0	0.9 (3)	0.7	[0.2, 2.4]	6.3	0.6 (2)	0.4	[0.1, 1.5]
	Togo	6.3	0.6 (2)	0.3	[0.1, 1.2]	0.0	0.0 (0)	0.0	[0.0, 0.0]
	Ivory Coast	12.5	13.6 (46)	16.0	[10.9, 22.9]	12.1	12.2 (40)	10.8	[7.1, 16.0]
	Other	6.3	2.4 (8)	2.2	[1.1, 4.7]	3.8	3.6 (12)	3.7	[1.4, 10.2]
Highest level of education	Completed primary school or less	6.3	7.7 (26)	5.4	[3.2, 8.9]	37.6	12.8 (47)	14.3	[9.7, 20.5]
	Some secondary school	50.0	71.1 (241)	78.3	[72.6, 83.1]	50.0	61.4 (202)	65.5	[57.8, 72.5]
	Completed secondary school or higher	43.8	21.3 (72)	16.3	[12.2, 21.5]	12.6	24.3 (80)	20.2	[14.8, 27.0]
Current employ-ment status	Unemployed	12.5	6.8 (23)	5.4	[3.3, 8.6]	0.0	6.4 (21)	6.0	[3.3, 10.7]
	Self-Employed	12.5	8.0 (27)	7.5	[4.1, 13.1]	6.3	5.2 (17)	3.9	[2.1, 7.1]
	Employed (public or private sector)	12.5	7.4 (25)	4.2	[2.5, 7.1]	43.8	13.4 (44)	11.7	[7.5, 17.7]
	Student	50.0	71.4 (242)	76.1	[69.5, 81.7]	18.8	54.4 (179)	61.0	[53.4, 68.2]
	Informal sector	6.3	3.8 (13)	3.6	[1.9, 6.8]	12.5	7.6 (25)	6.2	[3.6, 10.3]

Table 3 cont.		**Ouagadougou non-RDS adjusted proportion of participants living with HIV**	**Ouagadougou non-RDS adjusted proportion (n)**	**Ouagadougou RDS adjusted proportion**	**Ouagadougou RDS adjusted 95% Confidence Interval**	**Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV**	**Bobo-Dioulasso non-RDS adjusted proportion (n)**	**Bobo-Dioulasso RDS adjusted proportion**	**Bobo-Dioulasso RDS adjusted 95% Confidence Interval**
	Other	6.3	2.7 (9)	3.2	[1.1, 9.0]	18.8	13.1 (43)	11.2	[7.6, 16.3]
Current marital status	Single/ Never Married	81.3	94.6 (318)	-	-	81.3	96.3 (316)	-	-
	Married	12.5	3.0 (10)	-	-	18.8	1.2 (4)	-	-
	Divorced/ Separated	0.0	0.3 (1)	-	-	0.0	0.9 (3)	-	-
	Widowed	6.3	0.3 (1)	-	-	0.0	0.0 (0)	-	-
	Cohabitating	0.0	1.8 (6)	-	-	0.0	1.5 (5)	-	-
Grew up in urban area		93.8	91.0 (295)	93.5	[89.6, 96.0]	87.5	93.9 (309)	93.9	[89.4, 96.6]
Living arrangement over the past 12 months	Renting place	50.0	23.9 (81)	22.7	[17.2, 29.3]	25.0	21.0 (69)	24.2	[18.0, 31.7]
	Own place	18.8	4.1 (14)	2.1	[0.9, 4.6]	0.0	2.1 (7)	1.7	[0.7, 4.3]
	Staying at someone's house (including family)	31.3	70.5 (239)	74.3	[67.6, 80.0]	68.8	74.2 (244)	71.3	[63.6, 77.9]
	Internship/ dormitory	0.0	1.5 (5)	0.9	[0.3, 2.7]	6.3	2.7 (9)	2.8	[0.8, 10.0]

Table 3 cont.	**Ouagadougou non-RDS adjusted proportion of participants living with HIV**	**Ouagadougou non-RDS adjusted proportion (n)**	**Ouagadougou RDS adjusted proportion**	**Ouagadougou RDS adjusted 95% Confidence Interval**	**Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV**	**Bobo-Dioulasso non-RDS adjusted proportion (n)**	**Bobo-Dioulasso RDS adjusted proportion**	**Bobo-Dioulasso RDS adjusted 95% Confidence Interval**
Sexual orientation	Gay or homosexual	56.3	51.3 (174)	57.5	[50.5, 64.3]	50.0	55.9 (184)	44.2
	Bisexual	43.8	44.0 (149)	39.9	[33.3, 47.0]	43.8	39.2 (129)	48.9
	Heterosexual or straight	0.0	2.1 (7)	0.9	[0.4, 2.0]	6.3	4.0 (13)	4.6
	Transvestite/ transgender	0.0	2.7 (9)	1.7	[0.8, 3.6]	0.0	0.9 (3)	2.4
Disclosed sexual behavior to a family member	25.0	26.0 (88)	24.3	[18.9, 30.7]	25.0	20.4 (67)	18.2	[12.9, 25.2]

Table 4. Prevalence of human rights violations among MSM in Burkina Faso

	Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Sexual violence								
Ever forced to have sex	43.8	14.8 (50)	12.1	[8.3, 17.4]	20.0	15.6 (51)	-	-
Human rights violations								
Tested for HIV without consent	6.3	2.9 (10)	2.3	[1.0, 4.9]	0.0	2.7 (9)	3.2	[1.5, 5.6]
Physically aggressed	25.0	24.2 (82)	18.3	[13.9, 23.7]	50.0	42.3 (138)	35.9	[28.7, 43.8]
Tortured	12.5	8.3 (28)	6.2	[3.8, 9.7]	0.0	6.5 (21)	9.1	[5.4, 14.8]
Occurring as a result of having sex with men								
Lost employment	6.3	2.4 (8)	0.9	[0.4, 2.4]	6.3	2.7 (9)	0.8	[0.2, 2.4]
Afraid to access healthcare services	25.0	40.4 (137)	40.3	[33.8, 47.0]	25.0	23.7 (78)	29.6	[22.8, 37.6]
Avoided accessing healthcare	12.5	36.0 (122)	34.5	[28.5, 41.1]	25.0	20.1 (66)	24.7	[18.3, 32.3]
Denied healthcare	6.3	1.5 (5)	0.9	[0.3, 2.9]	0.0	0.9 (3)	0.3	[0.1, 1.3]
Felt they received lower quality care	6.3	4.4 (15)	3.6	[1.8, 7.0]	6.3	3.3 (11)	2.7	[1.2, 6.0]
Difficulty accessing health services	0.0	7.4 (25)	6.1	[3.7, 9.7]	6.3	1.8 (6)	0.9	[0.4, 2.2]
Heard health workers gossiping about them	18.8	12.1 (41)	10.5	[6.9, 15.7]	6.3	2.7 (9)	1.3	[0.5, 3.2]
Denied police protection	25.0	5.3 (18)	3.4	[1.9, 6.2]	12.5	3.3 (11)	2.1	[1.0, 4.3]

Table 4 cont.	**Ouagadougou non-RDS adjusted proportion of participants living with HIV**	**Ouagadougou non-RDS adjusted proportion (n)**	**Ouagadougou RDS adjusted proportion**	**Ouagadougou RDS adjusted 95% Confidence Interval**	**Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV**	**Bobo-Dioulasso non-RDS adjusted proportion (n)**	**Bobo-Dioulasso RDS adjusted proportion**	**Bobo-Dioulasso RDS adjusted 95% Confidence Interval**
Scared to walk in public places	25.0	19.2 (65)	17.5	[13.1, 22.9]	18.8	16.2 (53)	17.2	[12.4, 23.5]
Verbally harassed	37.5	34.8 (118)	29.2	[23.5, 35.6]	56.3	44.8 (147)	34.1	[27.5, 41.3]
Blackmailed	37.5	24.8 (84)	21.0	[16.1, 27.0]	18.8	14.9 (49)	17.3	[11.9, 24.6]

Table 5. Condom negotiation among MSM in Burkina Faso

	Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Somewhat or very difficult to insist on condom use with:								
Main male sexual partner	20.0	16.9 (56)	16.1	[10.2, 25.9]	20.0	7.8 (24)	7.8	[3.8, 15.6]
Casual male sexual partner	14.3	26.6 (82)	25.4	[17.4, 34.9]	0.0	8.4 (24)	7.4	[3.8, 14.5]
Main female sexual partner	10.0	10.6 (21)	10.9	[4.6, 24.6]	9.1	5.7 (10)	6.8	[2.6, 17.5]
Casual female sexual partner	0.0	11.2 (22)	8.4	[3.5, 19.4]	0.0	3.0 (5)	5.5	[1.3, 20.9]
Male partner when the receptive partner	16.6	18.1 (50)	19.5	[12.0, 31.2]	7.1	6.3 (17)	6.4	[2.6. 15.4]
Male partner when the insertive partner	21.4	18.9 (62)	22.3	[14.1, 34.7]	0.0	4.8 (14)	5.8	[2.5, 13.4]
Female sexual partner or spouse	14.3	5.4 (18)	5.5	[2.1, 13.8]	6.3	1.6 (5)	2.1	[0.4, 10.3]

Table 6. HIV and STI-related outcomes of MSM in Burkina Faso

		Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Laboratory results									
Living with HIV		100.0	4.7 (16)	2.8	[1.4, 5.6]	100.0	4.9 (16)	3.7	[1.9, 7.0]
Active Syphilis		-	7.7 (26)	7.1	[4.1, 12.0]	-	5.5 (94.5)	3.6	[2.1, 6.3]
Self-report									
Ever tested for HIV	No	25.0	24.8 (84)	29.3	[23.5, 35.9]	6.3	23.5 (77)	30.2	[23.1, 38.4]
	Yes, once	18.8	23.3 (79)	26.8	[20.7, 33.9]	18.8	21.4 (70)	23.1	[17.0, 30.6]
	Yes more than once	56.3	51.9 (176)	43.9	[37.2, 50.9]	75.0	55.0 (180)	46.7	[39.0, 54.6]
Previously diagnosed with HIV		41.8	2.0 (5)	0.6	[0.1, 3.4]	20.0	2.1 (5)	1.9	[0.7, 5.1]
Symptoms of an STI in past 12 months		18.8	6.5 (22)	4.9	[2.9, 8.2]	6.3	7.0 (23)	7.3	[4.3, 12.0]

Table 7. Sexual behaviors and drug use among MSM in Burkina Faso

		Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Sexual partners in the past 12 months	Both male and female regular partners	31.3	45.6 (154)	45.3	[38.3,52.3]	56.2	46.3(151)	51.9	[43.9,59.7]
	Two or more male partners	75.0	68.9 (233)	63.3	[56.0,70.1]	56.2	60.4(197)	56.3	[48.1,64.2]
	Two or more female partners	25.0	33.2 (112)	35.4	[28.8,42.6]	18.8	20.6(67)	24.3	[18.3,31.5]
Condom use at last sex with:	Main male partner	86.7	81.3 (247)	80.6	[74.0, 85.8]	66.7	71.3 (204)	73.1	[65.4, 79.6]
	Casual male partner	93.3	87.3 (233)	84.6	[78.1, 89.5]	91.7	85.3 (191)	75.2	[64.8, 83.3]
	Main female partner	66.7	76.7 (115)	81.8	[71.5,88.9]	75.0	79.4(104)	82.1	[72.5,88.9]
	Casual female partner	100.0	90.9 (130)	95.0	[90.0,97.6]	100.0	89.1(90)	91.8	[83.2,96.2]

Table 7 cont.		**Ouagadougou non-RDS adjusted proportion of participants living with HIV**	**Ouagadougou non-RDS adjusted proportion (n)**	**Ouagadougou RDS adjusted proportion**	**Ouagadougou RDS adjusted 95% Confidence Interval**	**Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV**	**Bobo-Dioulasso non-RDS adjusted proportion (n)**	**Bobo-Dioulasso RDS adjusted proportion**	**Bobo-Dioulasso RDS adjusted 95% Confidence Interval**
Always condom use with:	Main male partner	33.3	51.3 (156)	56.5	[49.2, 63.6]	58.3	51.6 (146)	56.8	[48.5, 64.8]
	Casual male partner	80.0	70.1 (188)	68.9	[61.3, 75.5]	50.0	61.1 (135)	57.6	[47.5, 67.1]
	Main female partner	50.0	50.0 (75)	-	-	50.0	63.8(83)	-	-
	Casual female partner	75.0	75.5 (108)	-	-	100.0	73.5(75)	-	-
General lubricant use with male partners:	Petroleum jelly or Vaseline	16.7	18.4 (37)	-	-	23.1	10.8 (27)	-	-
	Body creams/ fatty creams	0.0	6.5 (13)	-	-	0.0	8.0 (20)	-	-
	Water based lubricant	83.3	69.7 (140)	60.1	[50.6, 68.9]	76.9	68.8 (172)	-	-

Table 7 cont.	Shea butter	0.0	4.5 (9)	-	-	0.0	4.4 (11)	-	-
	Other	0.0	1.0 (2)	-	-	0.0	8.0 (20)	-	-
No injection drug use in the past 12 months		100.0	98.2 (333)	-	-	93.8	99.1 (326)	-	-
Use of non-injectable drug that was not prescribed in the past 12 months		6.3	21.8 (74)	20.2	[15.5, 25.9]	12.5	19.8 (64)	19.9	[14.2, 27.2]

Table 8. Knowledge of HIV risks and exposure to prevention efforts among MSM in Burkina Faso

	Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
HIV-related knowledge								
Knowledge of anal sex as the most risky type of sex	20.0	11.6 (39)	7.1	[4.4, 11.5]	0.0	22.8 (74)	-	-
Knowledge that receptive anal sex is riskier than insertive	33.3	17.5 (58)	14.5	[10.3, 20.1]	6.7	13.8 (41)	15.7	[9.9, 24.0]
Knowledge that water-based lubricant is safest when having anal sex with latex condoms	71.4	52.0 (142)	40.7	[33.3, 48.5]	53.8	32.9 (73)	-	-
Knowledge that you can get HIV from sharing a needle to inject drugs	93.3	96.1 (318)	96.0	[92.5, 98.1]	93.8	99.4 (323)	-	-

Table 8 cont.	**Ouagadougou non-RDS adjusted proportion of participants living with HIV**	**Ouagadougou non-RDS adjusted proportion (n)**	**Ouagadougou RDS adjusted proportion**	**Ouagadougou RDS adjusted 95% Confidence Interval**	**Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV**	**Bobo-Dioulasso non-RDS adjusted proportion (n)**	**Bobo-Dioulasso RDS adjusted proportion**	**Bobo-Dioulasso RDS adjusted 95% Confidence Interval**
Exposure to prevention efforts								
Have received HIV prevention information between man and woman in the past year	75.0	85.2 (287)	85.8	[80.3, 89.9]	75.0	62.0 (204)	66.3 (204)	[58.9, 73.1]
Have received HIV prevention information between men in the past year	56.3	48.8 (164)	45.5	[38.6, 52.5]	62.5	44.1 (145)	34.4 (145)	[27.5, 42.0]

Table 9. Social networks and social cohesion among MSM in Burkina Faso

		Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Social cohesion: agree or strongly agree with the following statements:									
You can count on other MSM in your group of friends…	If you need to borrow money	25.0	54.1 (182)	53.4	[42.3, 66.1]	50.0	67.6 (219)	67.0	[53.7, 81.7]
	To accompany you to the doctor or hospital	31.3	57.9 (196)	50.8	[40.3, 62.9]	62.6	75.7 (246)	71.7	[57.6, 87.2]
	If you need somewhere to stay	53.3	67.8 (227)	60.8	[49.4, 73.4]	50.0	76.4 (249)	70.8	[57.0, 86.2]
	If you need to talk about your problems	68.8	77.0 (261)	72.8	[60.5, 86.1]	62.6	83.4 (272)	79.6	[64.7, 95.4]
	To help you find other partners	81.3	68.8 (231)	61.8	[50.5, 74.4]	62.5	79.1 (257)	70.0	[55.8, 85.7]
	To support the use of condoms	68.8	84.3 (285)	83.6	[70.1, 97.7]	81.3	93.8 (303)	92.4	[76.8, 108.6]
You can trust the majority of MSM you know		20.0	51.7 (175)	55.7	[45.7, 67.0]	12.5	48.6 (159)	57.0	[46.6, 68.9]

Table 10. Socio-demographic characteristics of FSW in Burkina Faso

		Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
General demographics									
Age	< 21	19.4	24.6 (86)	25.7	[18.8, 34.0]	0.9	10.3 (36)	13.0	[8.7, 19.0]
	21-24	25.8	33.5 (117)	37.6	[29.0, 47.1]	4.3	18.6 (65)	19.0	[13.4, 26.0]
	25-29	12.9	23.8 (83)	18.9	[13.3, 26.2]	11.3	19.1 (67)	20.9	[15.9, 27.0]
	30-34	25.8	9.7 (34)	12.6	[6.8, 22.1]	27.0	20.3 (71)	18.5	[13.9, 24.2]
	35+	16.1	8.3 (29)	5.2	[3.1, 8.5]	56.5	31.7 (111)	28.6	[22.9, 35.0]
Country of origin	Burkina Faso	61.3	71.1 (248)	-	-	80.9	82.3 (288)	-	-
	Ghana	0.0	2.3 (8)	-	-	3.5	2.9 (10)	-	-
	Benin	0.0	0.3 (1)	-	-	0.0	0.3 (1)	-	-
	Togo	6.5	2.3 (8)	-	-	2.6	0.9 (3)	-	-
	Ivory Coast	22.6	13.8 (48)	-	-	8.7	10.3 (36)	-	-
	Nigeria	9.7	8.0 (28)	-	-	0.9	2.0 (7)	-	-
	Other	0.0	2.3 (8)	-	-	3.5	1.4 (5)	-	-
Highest level of education	None	35.5	23.8 (82)	30.7	[21.9, 41.3]	46.1	41.5 (145)	49.0	[42.1, 56.1]
	Some primary school	25.8	30.1 (104)	27.9	[20.9, 36.3]	32.2	30.9 (108)	29.2	[23.6, 35.6]
	Completed primary school	3.2	7.8 (27)	8.2	[4.6, 14.3]	6.1	6.3 (22)	5.5	[3.1, 9.5]

Table 10 cont.		**Ouagadougou non-RDS adjusted proportion of participants living with HIV**	**Ouagadougou non-RDS adjusted proportion (n)**	**Ouagadougou RDS adjusted proportion**	**Ouagadougou RDS adjusted 95% Confidence Interval**	**Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV**	**Bobo-Dioulasso non-RDS adjusted proportion (n)**	**Bobo-Dioulasso RDS adjusted proportion**	**Bobo-Dioulasso RDS adjusted 95% Confidence Interval**
	Some secondary school	35.5	34.5 (119)	29.6	[22.3, 38.2]	15.7	19.4 (68)	14.9	[11.0, 19.9]
	Completed secondary school or higher	0.0	3.8 (13)	3.5	[1.6, 7.6]	0.0	2.0 (7)	1.3	[0.6, 2.9]
Current employment status (other than sex Work)	Unemployed	58.1	50.7 (176)	49.9	[40.7, 59.0]	66.1	69.1 (242)	74.3	[68.3, 79.6]
	Self-Employed	3.2	2.3 (8)	3.7	[1.6, 8.2]	4.3	2.9 (10)	2.8	[1.4, 5.7]
	Employed (public or private sector)	6.5	10.7 (37)	8.4	[4.6, 14.7]	0.9	0.6 (2)	0.2	[0.1, 1.1]
	Student	0.0	3.5 (12)	3.5	[1.7, 7.2]	0.0	2.3 (8)	1.4	[0.6, 3.3]
	Informal sector	25.8	20.2 (70)	21.1	[14.8, 29.1]	6.1	3.7 (13)	3.0	[1.5, 5.9]
	Other	6.5	12.7 (44)	13.5	[9.1, 19.6]	22.6	21.4 (75)	18.2	[13.7, 23.7]

Table 10 cont.		Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Current marital status	Single/ Never Married	41.9	62.8 (219)	55.5	[45.8, 64.5]	27.8	44.6 (156)	51.5	[44.5, 58.4]
	Married	0.0	1.1 (4)	1.5	[0.3, 6.6]	9.6	4.3 (15)	7.1	[4.0, 12.2]
	Divorced/ Separated	38.7	25.2 (88)	29.7	[21.8, 38.9]	34.8	34.0 (119)	27.9	[22.3, 34.3]
	Widowed	6.5	2.3 (8)	6.3	[1.8, 19.8]	20.9	9.1 (32)	7.8	[5.0, 12.1]
	Cohabitating	12.9	8.3 (29)	7.2	[4.3, 11.8]	7.0	8.0 (28)	5.7	[3.6, 9.1]
Has a biological child(ren)		80.6	69.3 (242)	72.6	[64.5,79.5]	84.4	85.0 (294)	79.8	[72.4,85.6]
Living arrangement over the past 12 months	Renting Place	67.7	73.4 (256)	73.2	[63.5, 81.1]	65.2	67.7 (237)	68.9	[61.5, 75.4]
	Own place	22.6	9.5 (33)	14.9	[8.4, 25.0]	9.6	6.6 (23)	5.5	[3.2, 9.2]
	Staying at someone's house (including family)	6.5	15.8 (55)	11.9	[7.6, 18.3]	20.9	21.7 (76)	25.6	[19.4, 33.0]
Items unique to FSW									
Disclosed occupation to family		22.6	16.3 (57)	14.9	[10.3, 21.1]	15.7	22.3 (78)	27.3	[20.9, 34.8]
A health worker learned that they had sold sex		29.0	29.6 (103)	25.7	[19.2, 33.4]	31.3	29.4 (103)	23.0	[18.0, 28.9]

Table 11. Prevalence of human rights violations among FSW in Burkina Faso

	Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Sexual violence								
Ever forced to have sex	38.7	42.0 (146)	36.6	[28.8, 45.1]	40.0	39.7 (139)	32.9	[27.0, 39.5]
Human Rights Violations								
Tested for HIV against their will	3.2	2.9 (10)	3.5	[1.5, 7.8]	0.0	0.6 (2)	0.4	[0.1, 2.4]
Physically aggressed	80.0	72.4 (246)	61.1	[52.0, 69.5]	41.7	51.4 (180)	43.8	[37.0, 50.9]
Tortured	32.3	30.6 (106)	33.3	[25.5, 42.1]	54.8	58.3 (203)	54.5	[47.4, 61.5]
Events occurring as a result of selling sex								
Family members made discriminatory remarks	32.3	33.5 (117)	38.0	[29.7, 47.0]	28.3	30.4 (105)	19.3	[14.9, 24.5]
Lost employment or dismissed from a job	6.5	9.2 (32)	10.0	[6.3, 15.6]	5.2	3.1 (11)	2.1	[1.0, 4.4]

Table 11 cont.	**Ouagadougou non-RDS adjusted proportion of participants living with HIV**	**Ouagadougou non-RDS adjusted proportion (n)**	**Ouagadougou RDS adjusted proportion**	**Ouagadougou RDS adjusted 95% Confidence Interval**	**Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV**	**Bobo-Dioulasso non-RDS adjusted proportion (n)**	**Bobo-Dioulasso RDS adjusted proportion**	**Bobo-Dioulasso RDS adjusted 95% Confidence Interval**
Afraid to access healthcare services	35.5	21.0 (73)	28.3	[20.6, 37.6]	13.9	14.9 (52)	9.1	[6.2, 13.0]
Avoided carrying condoms because they may be found by police	12.9	12.3 (43)	18.2	[11.5, 27.7]	3.5	6.3 (22)	4.7	[2.7, 8.1]
Difficulty accessing health services	3.2	4.0 (14)	4.5	[2.0, 9.6]	1.7	1.4 (5)	0.6	[0.2, 1.7]
Heard health workers gossiping about them	3.2	6.6 (23)	8.1	[4.3, 14.7]	3.5	2.3 (8)	0.9	[0.4, 2.1]
Denied police protection	32.3	18.4 (64)	26.6	[18.7, 36.4]	18.3	16.4 (57)	11.0	[7.6, 15.5]
Harassed or intimidated by police	29.0	28.9 (101)	32.4	[24.5, 41.6]	48.7	48.4 (169)	45.3	[38.4, 52.4]
Scared to walk in public places	25.8	23.3 (81)	30.4	[22.4, 39.7]	16.5	22.0 (77)	12.5	[9.4, 16.5]
Verbally harassed	67.7	63.6 (222)	57.9	[48.7, 66.6]	54.8	55.4 (194)	40.0	[33.4, 44.7]
Blackmailed	22.6	19.9 (69)	19.4	[12.8, 28.3]	43.5	42.0 (147)	39.0	[32.4, 46.1]

Table 12. Condom negotiation among FSW in Burkina Faso

		Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Somewhat or very difficult to insist on condom use with									
A new client	Very difficult	12.9	10.6 (37)	14.1	[9.3, 20.8]	11.4	10.4 (36)	4.5	[3.0, 6.6]
	Somewhat difficult	16.1	13.8 (48)	15.1	[10.1, 21.9]	16.7	16.2 (56)	8.0	[5.7, 11.1]
A regular client	Very difficult	6.5	7.5 (26)	6.7	[3.9, 11.4]	6.1	5.8 (20)	2.9	[1.6, 5.4]
	Somewhat difficult	29.0	14.7 (51)	20.0	[13.9, 28.0]	18.3	19.0 (66)	10.2	[7.5, 13.7]
A non-paying partner	Very difficult	23.3	19.5 (67)	25.3	[18.3, 34.0]	19.6	24.1 (82)	22.7	[17.7, 28.6]
	Somewhat difficult	26.7	19.2 (66)	25.5	[17.8, 35.0]	30.8	30.3 (103)	29.4	[23.5, 36.2]

Table 13. HIV, STI and pregnancy outcomes of FSW in Burkina Faso

		Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Laboratory results									
Living with HIV		100.0	8.9 (31)	14.4	[7.9, 24.6]	100	32.9 (115)	32.7	[26.6, 39.4]
Active Syphilis		-	4.3 (15)	3.5	[1.9, 6.5]	-	11.4 (40)	-	-
Self-report									
Ever tested for HIV	No	19.4	18.7 (65)	28.2	[19.8, 38.5]	8.7	10.9 (38)	12.2	[8.3, 17.7]
	Yes, once	32.3	21.0 (73)	22.6	[16.2, 30.6]	26.1	20.9 (73)	25.7	[19.4, 33.1]
	Yes more than once	48.4	60.2 (209)	49.2	[40.1, 58.4]	65.2	68.3 (289)	62.1	[54.7, 69.0]
Previously diagnosed with HIV		36.4	4.1 (11)	9.9	[3.0, 28.6]	64.4	21.6 (67)	21.7	[16.4, 28.3]
Symptoms of an STI in past 12 months		51.6	49.4 (172)	55.8	[46.7, 64.4]	52.6	52.2 (181)	50.2	[43.2, 57.2]
Pregnancy									
Had an unwanted/ unplanned pregnancy		53.6	50.4 (138)	41.8	[32.3, 52.0]	31.0	34.0 (109)	30.1	[24.2, 36.7]
Ever had an abortion		51.6	36.7 (128)	40.4	[31.6, 49.9]	27.8	26.0 (91)	17.1	[13.1, 21.9]
How important is it to avoid getting pregnant?	Important	64.5	75.1 (256)	77.5	[69.8, 83.7]	78.1	84.5 (295)	81.2	[75.1, 86.1]
	Not important	35.5	24.9 (85)	22.5	[16.3, 30.2]	21.9	15.5 (54)	18.8	[13.9, 24.9]

Table 14. Sexual behaviors and drug use among FSW in Burkina Faso

		Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Sexual behaviors									
Condom at last vaginal or anal sex	Regular Client	93.5	87.0 (300)	81.0	[73.0, 87.1]	84.3	85.0 (294)	75.3	[67.7, 81.7]
	New client	96.6	89.1 (301)	82.3	[73.7, 88.5]	87.4	91.4 (309)	88.2	[82.6, 92.2]
	Non-paying partner in past 30 days	33.3	36.5 (109)	35.1	[26.4, 44.8]	43.0	33.5 (105)	29.3	[23.2, 36.3]
Tested for an STI in the past 12 months		16.1	18.2 (63)	17.6	[11.7, 25.7]	21.7	18.9 (66)	12.9	[9.3, 17.6]
Very difficult or somewhat difficult access to condoms		9.7	16.8 (58)	30.5	[19.2, 46.5]	20.8	17.8 (82)	12.8	[8.4, 19.7]
Have you ever used lubricants during sex	No	58.1	52.4 (183)	55.3	[46.2, 64.0]	35.7	42.1 (147)	47.2	[40.2, 54.3]
	Yes but always without condoms	9.7	6.3 (22)	5.8	[3.2, 10.4]	5.2	4.3 (15)	6.5	[3.5, 11.7]
	Yes but always with condoms	22.6	29.2 (102)	28.0	[20.9, 36.4]	49.6	43.6 (152)	40.5	[34.0, 47.4]
	Yes sometimes with and sometimes without condoms	9.7	12.0 (42)	10.9	[6.8, 16.8]	9.6	10.0 (35)	5.8	[3.8, 8.8]

Table 14 cont.		Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
What type of lubricant do you most often use for vaginal or anal sex	Petroleum jelly or Vaseline	14.3	13.8 (23)	-	-	24.6	21.2 (41)	-	-
	Body creams/ fatty creams/ Shea butter	21.4	27.5 (46)	-	-	21.7	19.7 (38)	-	-
	Water based lubricant	35.7	46.1 (77)	-	-	39.1	39.9 (77)	-	-
	Saliva	7.1	6.6 (11)	-	-	-	-	-	-
	No lubricant	7.1	1.2 (2)	-	-	1.4	2.1 (4)	-	-
	Other	14.3	1.8 (3)	-	-	13.0	17.1 (33)	-	-
Very difficult or somewhat difficult access to lubricants		42.0	34.5 (120)	49.7	[34.0, 69.9]			41.3	[30.4, 54.9]
Drug use									
Injected drugs for recreational purposes		0.0	1.7 (6)	0.7	[0.2, 2.2]	0.0	0.0 (350)	-	-
Ever shared a needle for injections		0.0	0.6 (2)	0.4	[0.1, 2.2]	-	-	-	-

Table 15. Knowledge of HIV risks and exposure to prevention efforts among FSW in Burkina Faso

		Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
HIV-related knowledge									
What is the safest lubricant to use during vaginal sex with a condom	Water-based lubricant	25.8	24.1 (84)	23.4	[15.7, 33.4]	36.3	32.9 (70)	32.6	[24.7, 41.5]
What is the safest lubricant to use during anal sex with a condom	Water-based lubricant	9.7	11.6 (40)	16.4	[9.3, 27.3]	3.2	9.1 (16)	-	-
Can you get HIV from sharing a needle to inject drugs?	No	0.0	3.9 (13)	3.7	[1.8, 7.3]	0.0	0.0 (0)	-	-
	Yes	93.5	91.5 (303)	96.3	[92.7, 98.2]	100.0	100.0 (326)	-	-

Table 15 cont.	**Ouagadougou non-RDS adjusted proportion of participants living with HIV**	**Ouagadougou non-RDS adjusted proportion (n)**	**Ouagadougou RDS adjusted proportion**	**Ouagadougou RDS adjusted 95% Confidence Interval**	**Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV**	**Bobo-Dioulasso non-RDS adjusted proportion (n)**	**Bobo-Dioulasso RDS adjusted proportion**	**Bobo-Dioulasso RDS adjusted 95% Confidence Interval**
Exposure to prevention efforts								
Participated in an HIV-related meeting in the past 12 months hosted by other sex workers	8.3	22.0 (22)	24.9	[14.5, 39.3]	23.7	25.3 (48)	12.6	
Participated in meetings related to prevention of HIV in sex work	50.0	56.0 (56)	51.9	[37.9, 65.6]	81.8	79.9 (159)	75.3	[66.8, 82.2]

Table 16. Social networks and social cohesion among FSW in Burkina Faso

	Ouagadougou non-RDS adjusted proportion of participants living with HIV	Ouagadougou non-RDS adjusted proportion (n)	Ouagadougou RDS adjusted proportion	Ouagadougou RDS adjusted 95% Confidence Interval	Bobo-Dioulasso non-RDS adjusted proportion of participants living with HIV	Bobo-Dioulasso non-RDS adjusted proportion (n)	Bobo-Dioulasso RDS adjusted proportion	Bobo-Dioulasso RDS adjusted 95% Confidence Interval
Social cohesion: Agree or strongly agree with following statements								
Can count on other sex worker if you need to borrow money	42.0	44.7 (156)	46.1	[37.2, 55.3]	38.7	49.5 (168)	48.3	[41.2, 55.5]
Can count on other sex workers to accompany you to the doctor	77.4	79.1 (276)	74.7	[65.2, 82.3]	52.7	67.2 (232)	66.9	[60.1, 73.1]
Can count on other sex workers if you need to talk about your problems	58.1	71.8 (249)	62.6	[52.6, 71.6]	51.8	58.7 (205)	55.0	[48.0, 61.8]
Can count on other sex workers if you need somewhere to stay	67.7	79.6 (277)	76.1	[66.5, 83.6]	53.1	62.3 (212)	61.4	[54.4, 68.0]
Can count on sex workers to support the use of condoms	87.1	84.2 (294)	79.1	[69.3, 86.4]	73.6	71.3 (228)	61.6	[53.9, 68.7]
Can count on other sex workers to help you find clients	77.4	67.1 (234)	64.7	[56.4,7 2.1]	52.1	55.4 (194)	62.9	[56.2, 69.2]
The group of sex workers who you work with are your friends	51.7	63.6 (222)	58.1	[48.2, 67.4]	67.8	76.5 (267)	75.3	[69.0, 80.6]
You can trust the sex workers in your area	29.0	22.7 (79)	21.1	[15.0, 28.8]	37.7	42.4 (148)	36.6	[29.8, 44.0]

Table 17. Socio-demographic characteristics of MSM in Togo

		Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Age	< 21 years old	15.4	27.6 (97)	38.0	[30.1, 46.6]	13.4 (44)	12.5	[8.9, 17.3]
	21-24 years old	40.0	43.8 (154)	43.0	[35.2, 51.1]	39.8 (131)	43.4	[37.0, 50.2]
	25-29 years old	36.9	23.3 (82)	15.7	[11.5, 21.1]	32.5 (107)	29.7	[24.2, 35.8]
	30+ years old	7.7	5.4 (19)	3.4	[1.7, 6.3]	14.3 (47)	14.3	[10.4, 19.5]
Country of origin	Togo	92.3	90.9 (320)	86.6%	[78.4, 92.1]	97.6 (321)	96.8	[93.6, 98.5]
	Ghana	3.1	1.4 (5)	-	-	0.9 (3)	-	-
	Benin	1.5	1.4 (5)	-	-	0.6 (2)	-	-
	Ivory Coast	1.5	4.0 (14)	-	-	0.6 (2)	-	-
	Other	1.5	2.3 (8)	-	-	0.3 (1)	-	-
Highest level of education	Primary school	4.6	6.9 (24)	8.1	[3.8, 16.7]	3.9 (13)	4.5	[2.4, 8.3]
	Secondary school	41.5	33.2 (117)	34.8	[27.8, 42.6]	16.1 (53)	16.8	[12.4, 22.3]
	High school	29.2	38.6 (136)	38.9	[31.3, 47.1]	46.5 (153)	51.1	[44.6, 57.6]
	Professional or vocational school	7.7	6.3 (22)	6.8	[3.9, 11.6]	4.3 (14)	4.7	[2.6, 8.3]
	College or university	13.8	15.1 (53)	11.3	[7.8,16.3]	29.2 (96)	22.9	[18.1,28.6]
Current employment status	Unemployed	7.7	8.0 (28)	6.0	[3.3, 10.6]	14.3 (47)	14.2	[10.2, 19.3]
	Self-Employed	27.7	23.3 (82)	22.9	[16.6, 30.6]	14.6 (48)	15.1	[10.8, 20.6]
	Employed by other	29.2	20.2 (71)	16.4	[11.8, 22.2]	8.5 (28)	9.9	[6.6, 14.6]
	Student	24.6	36.6 (129)	39.2	[31.7, 47.2]	34.3 (113)	33.1	[27.2, 39.6]
	Other	10.8	11.9 (42)	15.6	[10.5, 22.4]	28.3 (93)	27.7	[22.4, 33.7]
Current marital status	Single/ Never married	87.7	91.5 (323)	92.3	[87.6, 95.4]	97.0 (319)	96.3	[92.5, 98.2]
	Married/Cohabitating	0.0	8.5 (30)	7.7	[4.6, 12.4]	3.0 (10)	3.7	[1.8, 7.5]

Table 17 cont.		**Lomé non-RDS adjusted proportion of participants living with HIV**	**Lomé non-RDS adjusted proportion (n)**	**Lomé RDS adjusted proportion**	**Lomé RDS adjusted 95% Confidence Interval**	**Kara non-RDS adjusted proportion (n)**	**Kara RDS adjusted proportion**	**Kara RDS adjusted 95% confidence interval**
Living arrangement over the past 12 months	No place to live/homeless	0.0	0.9 (3)	0.6	[0.1, 2.2]	0.0 (0)	-	-
	Renting place	29.2	32.4 (114)	34.4	[27.1, 42.4]	56.5 (186)	59.1	[52.6, 65.3]
	Own place	0.0	2.6 (9)	2.2	[0.8, 5.5]	13.4 (44)	11.6	[8.4, 15.8]
	Staying at someone's house (including parents/family)	70.8	63.9 (225)	62.6	[54.6, 70.1]	29.8 (98)	29.3	[23.7, 35.5]
	Internship/school dormitory	0.0	0.3 (1)	0.3	[0.0, 1.9]	0.3 (1)	-	-
Items unique to MSM								
Sexual orientation	Gay or homosexual	64.6	61.1 (215)	60.8%	[53.0, 68.1]	68.7 (226)	61.4	[54.7, 67.8]
	Bisexual	33.8	34.9 (123)	34.3	[27.4, 42.0]	31.3 (103)	38.6	[32.2, 45.3]
	Heterosexual or straight	0.0	0.9 (3)	1.5	[0.3, 6.7]	0.0 (0)	-	-
	Transvestite/ Transgender	1.5	3.1 (11)	3.3	[1.5, 7.4]	0.0 (0)	-	-
Disclosed sexual behavior to a family member		38.5	23.6 (83)	23.8	[17.2, 32.0]	28.8 (98)	26.2	[20.9, 32.2]

Table 18. Prevalence of human rights violations among MSM in Togo

	Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Sexual violence							
Ever forced to have sex	16.9	7.1 (25)	6.2	[3.4, 10.8]	8.2 (27)	9.6	[6.3, 14.4]
Human rights violations							
Tested for HIV without consent	6.2	3.2 (11)	1.9	[0.8, 4.6]	2.1 (7)	2.0	[0.8, 4.8]
Physically aggressed	21.5	21.6 (76)	29.2	[22.0, 37.7]	19.1 (63)	19.7	[15.0, 25.5]
Tortured	9.2	4.8 (17)	2.6	[1.0, 6.4]	3.6 (12)	3.2	[1.5, 6.5]
Occurring as a result of having sex with men							
Lost employment	1.5	1.4 (5)	1.9	[0.6, 5.7]	0.6 (2)	0.5	[0.1, 3.0]
Afraid to access healthcare services	12.3	8.2 (29)	8.2	[5.1, 12.9]	11.2 (37)	13.7	[9.3, 19.8]
Avoided accessing healthcare	10.8	7.1 (25)	6.9	[4.1, 11.4]	9.1 (30)	13.0	[8.5, 19.3]
Denied healthcare	1.5	1.1 (4)	1.1	[0.3, 3.7]	0.0 (0)	-	-
Felt they received lower quality care	1.5	2.0 (7)	0.6	[0.2,1.5]	0.6 (2)	0.3	[0.1,1.2]
Difficulty accessing health services	6.2	17.0 (60)	22.4	[16.0, 30.5]	7.3 (24)	8.1	[4.6,13.8]
Heard health workers gossiping about them	6.2	3.4 (12)	3.1	[1.1, 8.1]	6.7 (22)	6.8	[3.8, 11.8]
Denied police protection	7.7	3.7 (13)	0.9	[0.4, 1.7]	0.3 (1)	-	-
Scared to walk in public places	12.3	8.0 (28)	8.1	[4.8, 13.5]	2.7 (9)	1.5	[0.8, 3.1]
Verbally harassed	32.3	18.5 (65)	12.6	[8.8, 17.8]	18.2 (60)	14.6	[11.0, 19.3]
Blackmailed	32.3	15.6 (55)	11.1	[7.6, 16.0]	21.9 (72)	18.7	[14.3, 24.0]

Table 19. Condom negotiation among MSM in Togo

	Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Somewhat or very difficult to insist on condom use with:							
Main male sexual partner	13.9	6.6 (23)	6.4	[3.6, 11.1]	15.0 (49)	13.9	[10.1, 18.7]
Casual male sexual partner	7.8	5.8 (19)	3.2	[1.3, 7.5]	21.4 (64)	24.5	[18.9, 31.0]
Main female sexual partner	11.1	6.3 (18)	9.0	[5.0, 15.6]	21.3 (23)	19.5	[12.2, 29.8]
Casual female sexual partner	7.6	4.1 (11)	3.3	[1.4, 7.3]	22.6 (24)	24.0	[15.6,35.2]
Male partner when the receptive partner	12.3	7.4 (24)	7.6	[4.4, 12.9]	14.5 (44)	14.3	[10.4, 19.5]
Male partner when the insertive partner	14.3	6.5 (22)	6.5	[3.6, 11.3]	11.8 (38)	11.2	[7.9, 15.7]
Female sexual partner or spouse	4.6	4.6 (16)	5.1	[2.6, 9.8]	5.7 (17)	6.5	[3.8, 10.8]

Table 20. HIV and STI-related outcomes of MSM in Togo

		Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Laboratory results								
Living with HIV		100.0	18.5 (65)	11.8	[8.1, 17.0]	0.6 (2)	0.3	[0.1, 1.4]
Active Syphilis		-	1.4 (5)	1.3	[0.5, 3.3]	0.6 (2)	1.0	[0.2, 3.9]
Self-report								
Ever tested for HIV	No	13.8	30.8 (107)	38.5	[30.8, 46.7]	28.3 (93)	27.8	[22.3, 34.1]
	Yes, once	10.8	13.3 (46)	19.4	[12.8, 28.2]	24.3 (80)	22.0	[17.2, 27.6]
	Yes, more than once	75.4	55.9 (194)	42.1	[34.5, 50.2]	47.4 (156)	50.2	[43.6, 56.8]
Previously diagnosed with HIV		19.4	4.4 (10)	1.7	[0.8, 3.8]	0.0 (0)	-	-
Symptoms of an STI in past 12 months		16.9	9.9 (35)	8.8	[5.5, 13.8]	6.4 (21)	5.8	[3.3, 9.9]

Table 21. Sexual behaviors and drug use among MSM in Togo

		Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Sexual behaviors								
Sexual partners in the past 12 months	Both male and female regular partners	13.8	15.6(55)	18.9	[12.9, 26.8]	13.7(45)	16.8	[12.3,22.5]
	Two or more male partners	60.0	53.3 (188)	44.9	[37.4, 52.7]	14.9(49)	10.2	[7.2,14.4]
	Two or more female partners	9.2	10.2(36)	12.0	[7.9, 17.9]	0.9(3)	0.6	[0.2,2.2]
Condom use at last sex with:	Main male partner	70.2	73.9 (210)	72.2	[63.0, 79.8]	72.0 (231)	70.5	[63.8, 76.4]
	Casual male partner	90.2	88.1 (215)	87.1	[79.7, 92.1]	86.2 (213)	84.2	[77.6, 89.2]
	Main female partner	50.0	63.7 (79)	-	-	71.4 (55)	-	-
	Casual female partner	72.2	75.0 (59)	-	-	83.8 (57)	-	-
Always condom use with:	Main male partner	42.1	54.4 (155)	51.8	[42.9, 60.7]	45.2 (145)	46.2	[39.7, 52.9]
	Casual male partner	56.9	67.2 (164)	60.4	[51.1, 69.1]	64.8 (160)	63.8	[56.3, 70.7]
	Main female partner	30.0	46.0(57)	-	-	29.9(23)	-	-
	Casual female partner	61.1	64.8(53)	-	-	47.1(32)	-	-

Table 21 cont.		**Lomé non-RDS adjusted proportion of participants living with HIV**	**Lomé non-RDS adjusted proportion (n)**	**Lomé RDS adjusted proportion**	**Lomé RDS adjusted 95% Confidence Interval**	**Kara non-RDS adjusted proportion (n)**	**Kara RDS adjusted proportion**	**Kara RDS adjusted 95% confidence interval**
General lubricant use with male partners:	Water-based lubricant	91.8	91.7 (265)	9.4	[5.2, 16.4]	45.8 (87)	39.7	[31.9, 48.1]
	Not water-based lubricant	8.1	0.7 (2)	90.6	[83.6, 94.8]	54.2 (103)	60.3	[51.9, 68.1]
Drug use								
No injection drug use in the past 12 months		96.9	98.9 (347)	-	-	99.1 (326)	-	-
No sharing of needles		100.0	99.7 (351)	-	-	99.7 (328)	-	-
Use of any non-injectable drug that was not prescribed in the past 12 months		26.2	25.1 (88)	32.3	[24.8, 40.7]	6.5 (21)	6.5	[3.9, 10.6]

Table 22. Knowledge of HIV risks and exposure to prevention efforts among MSM in Togo

	Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
HIV-related knowledge							
Knowledge of anal sex as the most risky type of sex	6.2	6.3 (22)	5.5	[2.8, 10.6]	8.5 (28)	10.3	[6.3, 16.4]
Knowledge that receptive anal sex is riskier than insertive	20.0	10.6 (37)	8.6	[5.3, 13.8]	5.5 (18)	5.8	[3.2, 10.2]
Knowledge that water-based lubricant is safest when having anal sex with latex condoms	90.8	82.6 (281)	78.7	[70.4, 85.2]	52.9 (118)	49.9	[41.7, 58.2]
Knowledge that you can get HIV from sharing a needle to inject drugs	100.0	96.3 (335)	93.4	[87.5, 96.6]	98.2 (323)	97.8	[93.9, 99.2]
Exposure to prevention efforts							
Have received HIV prevention information about sex between men and women in the past year	96.9	97.2 (342)	97.2	[93.2, 98.9]	98.5 (323)	97.9	[94.3, 99.3]
Have received HIV prevention information about sex between men in the past year	93.8	92.3 (325)	85.1	[77.3, 90.6]	84.2 (277)	82.9	[77.3, 87.3]

Table 23. Social networks and social cohesion among MSM in Togo

		Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Social cohesion, agree or strongly agree with the following statements:								
You can count on other MSM in your group of friends…	If you need to borrow money	55.4	67.8 (238)	75.4	[68.0, 81.5]	81.5 (268)	78.2	[71.8, 83.2]
	To accompany you to the doctor or hospital	83.1	76.5 (269)	72.4	[64.3, 79.3]	88.7 (291)	87.0	[81.7, 91.0]
	If you need somewhere to stay	66.2	74.5 (261)	81.5	[74.6, 86.9]	94.5(311)	93.7	[89.4, 96.3]
	If you need to talk about your problems	80.0	84.7 (298)	71.1	[62.3, 78.5]	90.3(297)	87.7	[82.3, 91.6]
	To help you find other partners	58.5	59.2 (208)	57.3	[49.2, 65.0]	69.5(226)	66.5	[59.6, 72.7]
	To support the use of condoms	98.5	94.0 (330)	92.1	[86.7, 95.4]	94.5(307)	92.8	[87.9, 95.8]
You can trust the majority of MSM you know		29.2	32.1 (113)	37.4	[29.8, 45.6]	78.7(259)	75.9	[69.8, 81.2]

Table 24. Socio-demographic characteristics of FSW in Togo

		Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion of participants living with HIV	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Age	< 21	5.2	15.0 (53)	21.2	[15.5, 28.2]	3.0	24.8 (82)	25.4	[19.7, 31.9]
	21-24	8.3	19.5 (69)	23.5	[17.9, 30.2]	0.0	29.4 (97)	27.2	[21.8, 33.3]
	25-29	21.9	22.3 (79)	22.5	[17.0, 29.1]	21.2	18.8 (62)	21.8	[16.7, 27.8]
	30-34	20.8	13.6 (48)	11.3	[8.1, 15.7]	33.3	10.6 (35)	9.8	[6.4, 14.6]
	35+	43.8	29.7 (105)	21.6	[16.8, 27.2]	42.4	16.4 (54)	15.9	[10.9, 22.7]
Country of origin	Togo	68.8	71.8 (254)	-	-	100.00	97.6 (322)	-	-
	Ghana	29.2	23.2 (82)	-	-	0.0	1.2 (4)	-	-
	Benin	0.0	1.7 (6)	-	-	0.0	0.3 (1)	-	-
	Burkina Faso	0.0	0.3 (1)	-	-	0.0	0.3 (1)	-	-
	Ivory Coast	1.0	0.8 (3)	-	-	0.0	0.3 (1)	-	-
	Other	1.0	2.3 (8)	-	-	0.0	0.3 (1)	-	-
Highest level of education	None or less than primary school	33.3	29.1 (10.3)	28.4	[22.6, 35.1]	18.2	13.6 (45)	16.1	[10.7, 23.5]
	Primary (elementary) school	46.9	39.0 (138)	36.5	[30.2, 43.2]	39.4	27.6 (91)	26.6	[21.1, 32.8]
	Secondary (middle) school	17.7	27.7 (98)	30.5	[24.4, 37.5]	36.4	34.2 (113)	31.9	[25.8, 38.8]
	High school or above	2.1	4.3 (15)	4.6	[2.4, 8.5]	6.1	24.2 (80)	25.4	[20.1, 31.6]

Table 24 cont.		Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion of participants living with HIV	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Current employment status (other than sex work)	Unemployed	47.9	43.5 (154)	14.2	[10.2,19.3]	18.2	27.3 (90)	22.3	[17.0, 28.7]
	Self-Employed	46.9	46.3 (164)	15.1	[10.8, 10.6]	63.6	37.3 (123)	28.8	[23.3, 34.9]
	Employed by other	3.1	7.1 (25)	10.0	[6.6, 14.4]	15.2	9.7 (32)	13.5	[8.8, 20.2]
	Student	1.0	1.7 (6)	33.1	[27.2, 39.6]	0.0	6.7 (22)	11.6	[7.5, 17.5]
	Other	1.0	1.4 (106)	27.7	[22.4, 33.7]	3.0	19.1 (63)	23.8	[18.1, 30.7]
Current marital status	Single/ Never Married	46.9	50.6 (179)	51.8	[44.9, 58.7]	39.4	62.4 (206)	60.8	[53.5, 67.6]
	Married or cohabitating	9.4	7.3 (26)	6.2	[3.6, 10.6]	6.1	5.7 (19)	5.0	[2.9, 8.5]
	Divorced/ Separated	21.9	29.9 (106)	29.8	[23.7, 36.6]	36.4	24.2 (80)	23.8	[18.4, 30.2]
	Widowed	21.9	11.9 (42)	12.2	[8.3, 17.5]	18.2	7.6 (25)	10.4	[6.0, 17.6]
Has biological child(ren)		83.3	78.5 (278)	75.4	[68.7, 81.1]	87.9	51.2 (169)	52.3	[45.3, 59.3]
Living arrangement over the past 12 months	Renting /Owning	60.4	61.8 (219)	61.0	[54.1, 67.6]	66.7	79.4 (262)	79.6	[73.5, 84.5]
	Staying at someone's house (including family)	5.2	10.7 (38)	12.6	[8.5, 18.2]	30.3	18.8 (62)	19.1	[14.3, 25.0]
	Brothel	30.2	24.6 (87)	23.3	[18.3, 29.3]	0.0	1.2 (4)	0.3	[0.1, 1.0]
	Other	4.1	2.8 (10)	3.1	[1.1, 8.5]	3.0	0.6 (2)	1.0	[0.2, 4.9]
Items unique to FSW									
A health worker learned that they had sold sex		64.2	59.8 (211)	61.7	[54.8, 68.1]	45.5	32.1 (106)	25.2	[20.1, 31.2]

Table 25. Prevalence of human rights violations among FSW in Togo

	Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion of participants living with HIV	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Sexual violence								
Ever forced to have sex	18.8	17.2 (61)	16.0	[11.6, 21.5]	39.4	33.3 (110)	29.5	[23.9, 35.8]
Human rights violations								
Tested for HIV against their will	5.3	3.5 (12)	0.6	[0.3, 1.2]	9.1	5.8 (19)	6.4	[3.7, 10.8]
Physically aggressed	36.5	37.9 (134)	44.9	[38.1, 52.0]	39.4	27.6 (91)	28.0	[22.2, 34.5]
Tortured	11.5	13.8 (49)	9.8	[6.9, 13.7]	15.2	5.5 (18)	3.3	[1.8, 6.0]
Events occurring as a result of selling sex								
Family members made discriminatory remarks	8.3	8.5 (30)	5.6	[3.4, 9.2]	36.4	36.8 (121)	36.7	[30.3, 43.6]
Lost employment or dismissed from a job	2.1	0.8 (3)	0.6	[0.2, 2.0]	3.0	3.0 (10)	4.2	[2.0, 8.6]
Afraid to access healthcare services	6.3	5.7 (20)	5.1	[2.9, 8.9]	6.1	10.0 (33)	9.0	[6.0, 13.3]
Avoided accessing health services	3.1	4.5 (16)	4.1	[2.1, 7.8]	6.1	9.7 (32)	9.7	[6.4, 14.3]
Avoided carrying condoms because they may be found by police	5.2	3.4 (12)	1.6	[0.7, 3.7]	3.0	0.9 (3)	-	-
Difficulty accessing health services	28.1	23.7 (84)	19.4	[14.9, 24.8]	18.2	25.8 (85)	23.8	[18.5, 30.0]
Heard health workers gossiping about them	3.1	1.4 (5)	0.8	[0.2, 2.6]	6.1	5.8 (19)	6.9	[3.9, 11.9]

Table 25 cont.	**Lomé non-RDS adjusted proportion of participants living with HIV**	**Lomé non-RDS adjusted proportion (n)**	**Lomé RDS adjusted proportion**	**Lomé RDS adjusted 95% Confidence Interval**	**Kara non-RDS adjusted proportion of participants living with HIV**	**Kara non-RDS adjusted proportion (n)**	**Kara RDS adjusted proportion**	**Kara RDS adjusted 95% confidence interval**
Denied police protection	12.6	8.5 (30)	4.8	[2.8, 8.2]	6.1	2.4 (8)	-	-
Harassed or intimidated by police	31.3	29.7 (105)	25.9	[20.5, 32.0]	45.5	22.4 (74)	19.8	[14.9, 25.9]
Scared to walk in public places	15.6	18.4 (65)	15.2	[11.0, 20.7]	0.0	7.0 (23)	9.8	[6.0, 15.4]
Verbally harassed	40.6	35.9 (127)	30.9	[25.1, 37.4]	57.6	37.3 (123)	36.9	[30.5, 43.8]
Blackmailed	25.0	20.6 (73)	16.3	[12.1, 21.6]	54.5	36.2 (119)	31.8	[25.8, 38.4]

Table 26. Condom negotiation among FSW in Togo

		Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion of participants living with HIV	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Somewhat or very difficult to insist on condom use with									
A new client									
Very difficult		1.0	1.4 (5)	0.7	[0.2, 3.0]	21.2	12.2 (40)	10.6	[6.9, 15.9]
Somewhat difficult		1.0	2.8 (10)	3.1	[1.4, 6.7]	9.1	21.6 (71)	22.8	[17.6, 29.1]
A regular client	Very difficult	1.0	1.1 (4)	-	-	18.2	8.5 (28)	-	-
	Somewhat difficult	2.1	1.1 (4)	-	-	15.2	13.4 (44)	-	-
A non-paying partner	Very difficult	22.0	21.2 (66)	25.6	[19.1, 33.2]	24.1	15.4 (45)	15.2	[10.6, 21.3]
	Somewhat difficult	12.2	13.5 (42)	13.0	[8.7, 18.9]	20.7	19.2 (56)	21.4	[15.9, 28.2]

Table 27. HIV, STI and pregnancy outcomes of FSW in Togo

		Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion of participants living with HIV	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Laboratory results									
Living with HIV		100.0	27.1 (96)	24.0	[17.9, 30.1]	100.0	10.0 (33)	7.5	[3.6, 11.5]
Active Syphilis		2.1	2.3 (8)	1.8	[0.3, 3,4]	3.0	0.9 (3)	0.3	[0.0, 0.8]
Self-report									
Ever tested for HIV	No	28.4	25.7 (90)	30.9	[24.7, 37.9]	15.2	17.6 (58)	20.4	[14.5, 27.9]
	Yes, once	17.9	15.7 (55)	20.2	[14.8, 26.9]	27.3	26.4 (87)	28.9	[22.9, 35.8]
	Yes more than once	53.7	58.6 (205)	48.9	[42.0, 55.9]	57.6	56.1 (185)	50.7	[43.6, 57.7]
Previously diagnosed with HIV		32.8	7.8 (19)	5.3	[2.9, 9.7]	35.7	3.7 (10)	2.0	[0.7, 5.4]
Symptoms of an STI in past 12 months		29.2	27.1 (96)	26.8	[21.2, 33.4]	42.4	33.9 (112)	32.0	[26.0, 38.6]
Pregnancy									
Had an unwanted/ unplanned pregnancy		49.2	52.1 (124)	53.8	[45.2, 62.2]	56.7	45.9 (105)	36.5	[28.9, 44.7]
Ever had an abortion		30.8	33.6 (79)	22.9	[17.2, 29.9]	43.3	42.4 (97)	34.6	[27.3, 42.8]
How important is it to avoid getting pregnant?	Important	68.8	68.4 (242)	67.3	[60.4, 73.6]	54.5	74.8 (247)	74.7	[67.6, 80.7]
	Not important	31.3	31.6 (112)	32.7	[26.4, 39.6]	45.5	25.2 (83)	25.3	[19.3, 32.4]

Table 28. Sexual behaviors and drug use among FSW in Togo

		Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion of participants living with HIV	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Sexual behaviors									
Condom at last vaginal or anal sex	Regular Client	95.3	95.5 (299)	96.6	[93.7, 98.2]	75.0	82.6 (252)	80.7	[72.9, 86.6]
	New client	91.6	93.7 (329)	94.7	[90.8, 97.0]	81.3	86.3 (283)	83.6	[76.0, 89.1]
	Non-paying partner in past 30 days	22.9	26.4 (34)	26.8	[17.8, 38.3]	33.3	57.8 (133)	53.5	[45.3, 61.5]
Tested for an STI in the past 12 mos.		46.9	48.2 (170)	49.9	[43.0, 56.8]	36.4	20.9 (69)	20.4	[15.6, 26.3]
Have you ever used lubricants during sex	No	26.0	29.9 (106)	36.8	[30.1, 44.0]	72.7	66.6 (219)	70.0	[63.6, 75.7]
	Yes but always w/o condoms	5.2	3.4 (12)	3.3	[1.5, 6.8]	3.0	4.0 (13)	3.6	[2.0, 6.7]
	Yes but always with condoms	62.5	63.3 (224)	57.5	[50.3, 64.3]	21.2	21.0 (69)	19.9	[15.2, 25.5]
	Yes sometimes with and sometimes without condoms	6.3	3.4 (12)	2.5	[1.2, 5.0]	3.0	8.5 (28)	6.5	[3.9, 10.7]
What type of lubricant do you most often use for vaginal or anal sex	Petroleum jelly or Vaseline	11.4	7.3 (18)	7.6	[4.3, 13.1]	50.0	24.8 (26)	-	-
	Body creams/ fatty creams/ Shea butter	4.3	3.7 (9)	3.6	[1.6, 8.0]	0.0	4.8 (5)	-	-
	Water based lubricant	74.3	76.8 (189)	76.7	[69.2, 82.8]	50.0	65.7 (69)	-	-
	Saliva	0.0	1.6 (4)	3.0	[1.1, 8.0]	0.0	1.9 (2)	-	-
	No lubricant	1.4	0.4 (1)	0.3	[0.0, 1.9]	0.0	1.9 (2)	-	-
	Other	8.6	10.2 (25)	8.8	[5.3, 14.3]	0.0	1.0 (1)	-	-

Table 28 cont.	**Lomé non-RDS adjusted proportion of participants living with HIV**	**Lomé non-RDS adjusted proportion (n)**	**Lomé RDS adjusted proportion**	**Lomé RDS adjusted 95% Confidence Interval**	**Kara non-RDS adjusted proportion of participants living with HIV**	**Kara non-RDS adjusted proportion (n)**	**Kara RDS adjusted proportion**	**Kara RDS adjusted 95% confidence interval**
Very difficult or somewhat difficult access to lubricants	54.4	61.8 (202)	50.6	[40.7, 62.1]	89.6	89.7 (270)	91.8	[84.6, 99.2]
Drug use								
Injected drugs for recreational purposes	2.1	1.1 (4)	0.6	[0.2, 1.6]	0.0	1.2 (4)	0.8	[0.2, 4.2]
Ever shared a needle for injections	0.0	0.0 (0)	-	-	0.0	0.9 (3)	-	-

Table 29. Knowledge of HIV risks and exposure to prevention efforts among FSW in Togo

		Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion of participants living with HIV	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
HIV-related knowledge									
What is the safest lubricant to use during vaginal sex with a condom	Water-based lubricant	59.3	61.1 (201)	-	-	37.5	44.1 (78)	-	-
What is the safest lubricant to use during anal sex with a condom	Water-based lubricant	60.0	71.1 (133)	-	-	38.5	30.4 (34)	-	-
Can you get HIV from sharing a needle to inject drugs?	No	3.2	1.4 (5)	0.6	[0.2, 1.8]	3.0	2.1 (7)	1.8	[0.8, 4.2]
	Yes	96.8	98.6 (347)	99.4	[98.2, 99.8]	97.0	97.9 (322)	98.2	[95.8, 99.2]
Knowledge of anal sex as most risky		3.2	2.3 (8)	0.9	[0.3, 2.6]	3.0	1.2 (4)	-	-
Exposure to prevention efforts									
Participated in a meeting related to HIV in the past 12 months that were hosted by other sex workers		41.0	44.3 (89)	38.6	[30.3, 47.5]	57.1	58.3 (127)	57.8	[49.2, 65.9]
Participated in meetings related to prevention of HIV in sex work		85.2	78.1 (157)	76.0	[67.6, 82.7]	81.0	72.5 (158)	69.4	[60.9, 76.8]

Table 30. Social networks and social cohesion among FSW in Togo

	Lomé non-RDS adjusted proportion of participants living with HIV	Lomé non-RDS adjusted proportion (n)	Lomé RDS adjusted proportion	Lomé RDS adjusted 95% Confidence Interval	Kara non-RDS adjusted proportion of participants living with HIV	Kara non-RDS adjusted proportion (n)	Kara RDS adjusted proportion	Kara RDS adjusted 95% confidence interval
Social cohesion: Agree or strongly agree with following statements								
Can count on other sex worker if you need to borrow money	38.5	44.2 (156)	49.1	[38.8, 61.0]	51.5	67.3 (222)	67.9	[59.6, 76.6]
Can count on other sex workers to accompany you to the doctor	57.3	68.0 (240)	70.1	[57.6, 83.6]	72.8	76.9 (253)	75.9	[66.5, 85.7]
Can count on other sex workers if you need to talk about your problems	56.2	65.5 (232)	73.3	[60.9, 86.7]	75.8	79.4 (262)	81.8	[73.6, 90.1]
Can count on other sex workers if you need somewhere to stay	58.4	66.3 (234)	70.5	[58.3, 83.7]	87.9	85.7 (282)	82.5	[71.7, 93.7]
Can count on sex workers to support the use of condoms	90.6	91.5 (324)	-	-	90.9	91.2 (300)	-	-
Can count on other sex workers to help you find clients	46.9	54.8 (194)	55.8	[44.9, 68.3]	63.7	75.8 (250)	70.2	[59.6, 81.7]
The group of sex workers who you work with are your friends	64.6	65.9 (233)	68.8	[56.2, 82.5]	90.9	86.9 (287)	85.0	[75.1, 94.8]
You can trust the sex workers in your area	18.8	22.0 (78)	19.4	[13.3, 28.0]	42.4	40.6 (134)	37.2	[30.2, 45.6]

Table 31. Quantitative sample sizes across the 7 cities in Cameroon

	Individual survey with MSM	Individual survey with FSW	Individual survey with KI	Venues verified	Venues and services listed	HIV health services
Bafoussam	252	256	19	22	81	17
Bamenda	152	211	17	17	26	10
Bertoua	250	267	9	9	16	8
Douala	250	301	25	43	124	29
Kribi	191	169	15	12	35	9
Ngaoundere	252	303	12	12	5	9
Yaoundé	259	310	24	28	103	22
Total	**1,606**	**1,817**	**121**	**143**	**390**	**104**

Table 32. Qualitative sample sizes across the 7 cities in Cameroon

City	In-depth interview MSM	In-depth interview FSW	In-depth interview KI	Focus group MSM	Focus group FSW
Bafoussam	15	16	12	3	3
Bamenda	13	15	10	3	3
Bertoua	15	15	8	3	3
Douala	15	15	11	3	3
Kribi	15	15	7	3	3
Ngaoundere	14	13	8	3	3
Yaoundé	21	21	7	3	3
Total	**108**	**110**	**65**	**21**	**21**

Table 33. Numbers of unique objects distributed in each population in each city

	Yaoundé	Douala	Bamenda	Kribi	Bertoua	Bafoussam	Ngaoundere
To FSW	400	400	280	174	200	184	266
To MSM	400	400	131	103	148	128	170

Table 34. Cameroon KP-related datasets available for triangulation

Name of datasets	Years	Description	Region(s)	Target Population	Sample size
Source Data Already Available for Triangulation					
Cartographie de TS 2008	2008	Cartographie (GVFI)	national	SW	385
Enquete Seroepi et comportemental sur la VIH et syphilis au Cameroun	2009	Enquête comportementale avec dépistage (GVFI)	Plusieurs	SW	1000
Etude VIH Militaire	2002, 05, 11	Enquête comportementale avec dépistage (GVFI)	Plusieurs	Militaires	2500
IBBS-MSM	2011	Enquête comportementale avec dépistage (ACMS, CARE, GVFI, CNLS)	Yaoundé, Douala	MSM	482
Prostitution and HIV AIDS in Kribi	2009	Qualitative survey (WOPA/JHU)	Kribi	SW	15
E-SANHOD	2008	Comportementale (ALTERNATIVE/AIDES)	Douala	MSM	168
R2P	2013	Population size, service, assessment, behavioral survey, qualitative study (GVFI)	7 cities in 7 regions	SW	
Source Data Not Yet Obtained for Triangulation					
Données de sensibilisation 2011	2011	Sensibilisation Humanity First / CAMNAFAW	Yaoundé	MSM	
Données sur les prises en charges Yde	2009	Prevention et prise en charge (alimentaire, sanitaire, etc.) Horizon femmes	Yaoundé	SW	
Stigmatisation chez les groupes vulnerables	2009	Etat des lieux de la Stigmatisation et la Discrimination à l'égard des groupes marginalisés à Douala et Yaoundé FISS, PASOC . UE	Yaoundé and Douala	MSM ET FSW	34 (MSM) et 33 (FSW)
CRETES	2004	Enquête comportementale avec dépistage CNLS / CDC	Plusieurs	SW	
Etude sur la disponibilité et l'acces aux preservatifs m et f	2010	Data with GPS points ACMS	10 ville capitales du Cam	SW	385

Table 34 cont.	**Years**	**Description**	**Region(s)**	**Target Population**	**Sample size**
Données comportemental FSW	2011	Qualitatif: Focus group discussion ACMS	Baf, Dla et Bda	SW	
Report card	2012	Focus group discussion and one to one interview CAMNAFAW	Yaoundé, Douala et Ngaoundéré	MSM	FG: 26 MSM, 10 B, 7 L; entretiens individuels: 8 KI
Distribution of condoms	2008-2010	Distribution de preservatifs, lubrifiant, et materiels de l'education CAMNAFAW	Yaoundé	MSM	39672 male condoms, 2047 female condoms, 2331 lubricants (100ml)
Données sur les dépistages	2008-2010	Campagne de Dépistage CAMNAFAW	Yaoundé	MSM	400 LGBTI
IST	2008-2010	IST (depistage et prise en charge) CAMNAFAW	Yaoundé	MSM	254 MSM, 251 Bisexuels, 25 Lesbiennes
GLOBAL FUND	2014	Behavioral survey CAMNAFAW	10 régions	SW	Etude non encore réalisée
Données sur les prises en charges Douala	2006-	Prise en charge, sensibilisation Alternatives Cameroon	Douala	MSM	
Frequentation des services de SIDADO	2010-2012	Number of MSM who have received our services AIDS-ACODEV	Yaoundé	MSM ET SW	
PAEMH	2010-2011	Number of MSM who have received our services SIDADO/ADEFHO/COFENHO	Douala, Yaoundé, Buea, Limbe, Tiko, Edea, Kumba, Mutengene	MSM	
HAPP-TS	2010-	Dépistage, assistance sociale CARE, Horizon Femmes	Plusieurs	FSW	
HAPP-MSM	2010-2012	Dépistage, assistance sociale, cartographie toute les villes CARE (partenaire avec Humanity First, ACMS)	Plusieurs	MSM	
ACCESS	2010-2012	Number of MSM who have received condom and lubricant ALTERNATIVES	DOUALA, YAOUNDÉ, BUEA, LIMBE	MSM	

Table 35. Socio-demographic characteristics of MSM in Cameroon

		Yaoundé (%) N=259	Douala (%) N=250	Bafoussam (%) N=252	Bamenda (%) N=152	Bertoua (%) N=250	Ngaoundere (%) N=252	Kribi (%) N=191	All cities (%) N=1606
General Demographics									
Age	18- 21	12.4	7.6	6.4	2.6	15.2	19.0	19.9	12.1 (195/1606)
	21-24	39.0	39.6	27.8	23.0	25.2	37.7	38.7	33.5 (537/1606)
	25-29	34.4	31.6	30.6	47.4	33.2	29.4	28.8	32.9 (529/1606)
	30-34	7.7	13.2	15.1	22.4	14.4	61.0	5.8	11.6 (187/1606)
	35+	6.6	8.0	20.2	4.6	12.0	7.9	6.8	9.8 (158/1606)
Length of residence in city	Don't live in city	0.8	0.4	3.6	0.0	1.6	0.4	2.6	1.1 (18/1606)
	Less than 3 months	0.8	3.2	4.8	15.8	15.6	2.0	7.5	6.6 (106/1606)
	More than 3 months	98.5	96.4	91.7	84.2	82.8	97.6	91.1	92.3 (1482/1606)
Current employment status	Unemployed	12.5	10.5	12.1	13.8	8.6	11.1	23.2	12.8 (195/1528)
	Self-employed	21.8	20.2	24.2	23.0	14.2	17.6	25.3	20.6 (315/1528)
	Employed by other	24.2	27.7	21.1	36.2	38.2	37.3	18.1	29.5 (451/1528)
	Student	41.5	41.6	42.6	27.0	39.1	34.0	28.9	37.1 (567/1606)
Highest level of education	None	0.00	0.40	0.79	0.00	0.40	7.54	1.57	1.62 (26/1601)
	Primary school or less	3.9	2.4	10.3	3.3	2.8	15.9	6.8	6.7 (107/1601)
	Some secondary	10.4	17.7	15.9	25.7	17.0	11.1	16.2	15.7 (251/1601)
	Completed secondary	43.2	38.3	30.6	39.5	39.3	38.5	55.0	40.2 (643/1601)
	University/vocational training	42.5	41.1	42.5	31.6	40.5	27.0	20.4	35.9 (574/1601)

Table 35 cont.		Yaoundé (%) N=259	Douala (%) N=250	Bafoussam (%) N=252	Bamenda (%) N=152	Bertoua (%) N=250	Ngaoundere (%) N=252	Kribi (%) N=191	All cities (%) N=1606
Current Marital Status	Not officially married	97.3	95.2	80.0	90.7	90.6	89.2	92.7	90.8 (1454/1601)
	Monogamy	2.7	4.4	19.6	9.3	9.0	9.2	6.8	8.7 (139/1601)
	Polygamy	0.0	0.4	0.4	0.0	0.4	1.6	0.5	0.5 (8/1601)
Aside from official marriage, other female sexual partners	One regular female partner	38.7	35.6	36.3	47.0	51.9	61.1	27.9	43.0 (661/1536)
	Two or more regular female partners	18.3	24.7	9.6	6.6	12.6	8.1	17.9	14.1 (217/1536)
	No regular female partners	43.0	39.7	54.2	46.4	35.6	30.8	54.2	42.8 (658/1536)
Aside from official marriage, male sexual partners	One regular male partner	46.3	41.3	30.2	43.7	56.9	71.2	47.6	48.5 (760/1567)
	Two or more regular male partners	33.3	47.7	61.5	39.7	21.4	25.2	35.1	37.7 (590/1567)
	No regular male partners	20.4	11.1	8.33	16.6	21.8	0.36	17.3	13.8 (217/1567)
Items unique to MSM									
Sexual orientation	Gay or homosexual	36.9	34.0	29.0	44.3	25.0	44.6	50.5	36.9 (587/1592)
	Bisexual	62.0	64.0	71.0	55.7	75.0	54.6	49.5	62.5 (995/1592)
	Heterosexual or straight	1.1	0.0	0.00	0.00	0.00	0.80	0.00	0.31 (5/1592)
	Transgender	0.00	2.02	0.00	0.00	0.00	0.00	0.00	0.31 (5/1592)

Table 35 cont.	**Yaoundé (%) N=259**	**Douala (%) N=250**	**Bafoussam (%) N=252**	**Bamenda (%) N=152**	**Bertoua (%) N=250**	**Ngaoundere (%) N=252**	**Kribi (%) N=191**	**All cities (%) N=1606**
At least one family member knows you have sex with other men	45.5	48.2	19.4	32.0	27.5	21.9	35.1	32.8 (518/1579)
Disclosed sexual orientation to doctor or a nurse	32.9	37.1	23.1	25.7	11.3	23.0	27.9	25.8 (412/1595)

Table 36. Sexual behaviors and injecting drug use among MSM in Cameroon

		Yaoundé (%)	Douala (%)	Bafoussam (%)	Bamenda (%)	Bertoua (%)	Ngaoundere (%)	Kribi (%)	All cities (%)
Sexual Behaviors									
Exchanged sex for money	In the past 4 weeks	8.1	24.5	4.7	2.0	1.6	20.5	15.2	11.3 (180/1588)
	In the past 12 months	9.3	13.3	8.7	11.3	6.1	16.1	19.6	11.8 (187/1588)
	Not in past 12 months	82.6	62.2	86.5	86.8	92.2	63.5	65.2	76.9 (1221/1588)
Male condom use during vaginal sex in past month	Everytime	38.3	46.6	19.2	50.5	16.0	37.6	39.2	33.1 (363/1097)
	Almost everytime	6.8	9.9	19.8	22.9	14.1	23.0	12.4	15.9 (174/1097)
	Some of the time	8.6	17.6	18.6	12.8	36.2	24.9	28.9	22.0 (241/1097)
	Almost none of the time	1.9	4.6	9.3	2.8	4.2	4.2	2.1	4.4 (48/1097)
	None of the time	44.4	21.4	33.1	11.0	29.6	10.3	17.5	24.7 (271/1097)
Female condom use during vaginal sex in past month	Everytime	0.0	7.0	0.0	0.0	0.9	0.0	4.4	1.4 (15/1106)
	Almost everytime	1.2	4.7	1.6	0.0	9.9	4.6	3.3	4.1 (45/1106)
	Some of the time	3.1	5.4	4.3	1.8	26.3	20.4	27.8	13.3 (147/1106)
	Almost none of the time	1.9	7.0	6.0	6.3	7.5	6.0	2.2	5.5 (61/1106)
	None of the time	93.8	76.0	88.1	92.0	55.4	69.0	62.2	75.8 (838/1106)

Table 37. HIV testing and treatment for MSM in Cameroon

		Yaoundé (%)	Douala (%)	Bafoussam (%)	Bamenda (%)	Bertoua (%)	Ngaoundere (%)	Kribi (%)	All cities (%)
Self-report									
Knowledge of HIV status	Never been tested	5.5	6.4	4.2	4.7	2.3	15.5	21.1	8.4 (131/1552)
	Never got results	2.0	1.2	4.2	3.3	1.4	1.2	2.1	2.1 (33/1552)
	Yes	92.6	92.4	91.6	92.0	96.3	83.3	76.8	89.4 (1388/1552)
If known, HIV status	Living with HIV	6.2	18.0	12.7	0.0	0.0	1.0	8.5	7.0 (94/1336)
	Not living with HIV	93.8	82.0	87.3	100	100	99.0	91.5	92.9 (1241/1336)
If not living with HIV, tested in the past 12 months		90.9	85.5	66.3	75.4	87.8	87.6	78.3	82.5 (1011/1226)
If living with HIV, receiving treatment		64.3	92.3	70.4	NA	NA	50.0	50.0	75.5 (71/94)
If not receiving treatment, have received CD4 results		80.0	66.7	100	NA	NA	50.0	50.0	73.9 (17/23)
If not receiving treatment, ever been told you need treatment by a healthcare professional		40.0	50.0	14.3	NA	NA	0.0	100	45.5 (10/22)
If living with HIV, do you tell your partners you have HIV	Never	57.1	58.3	33.3	NA	NA	100	90.9	56.0 (51/91)
	Sometimes	28.6	30.6	33.3	NA	NA	0.0	0.0	26.4 (24/91)
	Always	14.3	11.1	33.3	NA	NA	0.0	9.1	17.6 (16/91)

Table 38. Exposure to HIV prevention efforts among MSM in Cameroon

		Yaoundé (%)	Douala (%)	Bafoussam (%)	Bamenda (%)	Bertoua (%)	Ngaoundere (%)	Kribi (%)	All cities (%)
Exposure to prevention efforts									
Received HIV prevention information in past 12 months		93.8	86.4	77.8	99.3	96.0	88.2	78.9	88.3 (1402/1587)
Received HIV prevention from	Doctor or health provider	57.9	51.6	65.3	64.9	65.8	42.8	50.0	56.9 (790/1388)
	Peer educator	80.7	82.9	64.3	58.7	60.4	56.7	81.3	69.5 (963/1385)
	Mosque, church, religious group	24.8	14.2	21.4	20.8	5.4	15.9	25.0	18.0 (244/1355)
	Internet	43.6	48.6	61.2	43.7	16.3	12.5	37.6	38.1 (512/1341)
	Friends or family	71.8	63.3	79.0	86.1	44.4	37.7	60.1	62.6 (848/1355)
	Other MSM	71.7	71.2	77.6	87.4	76.9	28.6	70.5	68.4 (939/1373)
	Media	85.4	70.6	95.9	95.3	82.3	61.7	60.8	78.9 (1067/1353)

Table 39. HIV-related services mentioned by more than 10% of MSM (n=252) in the Bafoussam area

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year
Hopital Regional de Bafoussam	25.8%	No	Yes	Yes	Don't know	Yes	Yes
Colibri	21.0%	Yes	No	Yes	Yes	No	NA
Hopital de District de Dschang	11.9%	-	-	-	-	-	-
None mentioned	5.6%	-	-	-	-	-	-

Table 40. HIV-related services mentioned by more than 10% of MSM (n=152) in the Bamenda area

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year
Bamenda Regional Hospital	49.3%	Don't know	Yes	Yes	No	Yes	Yes
PMI Nkwen	28.3%	-	-	-	-	-	-
Baptist Health Center Bamenda	20.4%	Yes	Yes	Yes	Yes	Yes	Yes
Mezam Polyclinic	15.1%	No	Yes	Yes	No	Yes	Yes
None listed	3.9%	-	-	-	-	-	-

Table 41. HIV-related services mentioned by more than 10% of MSM (n=250) in the Bertoua area

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year
Hopital Regional de Bertoua	62.7%	No	Yes	Yes	No	Yes	Yes
Hopital Militaire de Bertoua	17.7%	No	Yes	Yes	No	No	NA
CSI Catholique De Nkolbikon	12.4%	No	Yes	Yes	No	Yes	Yes
None listed	4.8%	-	-	-	-	-	-

Table 42. HIV-related services mentioned by more than 10% of MSM (n=250) in the Douala area

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year
Alternatives Cameroun	56.8%	Yes	Yes	Yes	Yes	No	No
AIDS ACODEV	24.4%	Yes	Yes	Yes	No	No	No
Hopital Laquintinie	16.0%	Yes	Yes	Yes	No	Yes	Yes
None mentioned	4.8%	-	-	-	-	-	-

Table 43. HIV-related services mentioned by more than 10% of MSM (n=191) in the Kribi area

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year
Hopital de District de Kribi	51.3%	Don't know	Yes	Yes	No	Yes	No
ESPK (Espace Sante Prevention De Kribi)	34.0%	Yes	No	Yes	No	No	NA
None mentioned	29.8%	-	-	-	-	-	-

Table 44. HIV-related services mentioned by more than 10% of MSM (n=259) in the Yaoundé area

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year
Humanity First Cameroon	40.1%	Yes	Yes	No	No	No	NA
Hopital Central de Yaoundé	19.7%	Yes	Yes	Yes	No	Yes	Yes
CAMNAFAW	19.7%	Yes	Yes	Yes	Yes	No	No
Affirmative Action	14.7%	Yes	No	Yes	Yes	No	No
None mentioned	20.4%	-	-	-	-	-	-

Table 45. HIV-related services mentioned by more than 10% of MSM (n=252) in the Ngaoundere area

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year
Hopital Regional de Ngaoundere	51.2%	No	Yes	Yes	No	Yes	No
Hopital Protestant de Ngaoundere	18.7%	Yes	Yes	Yes	Yes	Yes	Yes
None mentioned	5.6%	-	-	-	-	-	-

Table 46. Prevalence of structural barriers to care among MSM in Cameroon

	Yaoundé (%)	Douala (%)	Bafoussam (%)	Bamenda (%)	Bertoua (%)	Ngaoundere (%)	Kribi (%)	All cities (%)
Sexual Violence								
Ever forced to have sex	33.3	31.4	24.3	21.1	16.7	23.8	41.1	27.3 (435/1594)
Events occurring as a result of sexual orientation								
Been denied healthcare services	4.3	8.4	4.4	6.0	1.63	6.4	10.5	5.8 (92/1598)
Felt treated badly in a healthcare center	3.9	13.2	17.5	2.0	3.6	3.2	13.6	8.3 (133/1600)
Been denied police protection	15.1	14.2	6.0	0.00	2.0	2.4	15.3	8.1 (129/1596)
Been arrested	10.1	14.0	7.5	4.0	0.8	2.0	15.8	7.7 (123/1601)
Been to jail or prison	6.2	12.1	2.0	0.0	1.6	1.6	13.7	5.3 (85/1599)
Been blackmailed	45.3	43.6	44.4	68.0	18.8	20.6	52.4	39.8 (637/1599)
Been beaten up or physically hurt	16.8	16.9	8.4	27.5	4.4	5.2	24.9	13.7 (218/1595)

Table 47. Socio-demographic characteristics of FSW in Cameroon

		Yaoundé (%) N=310	Douala (%) N=301	Bafoussam (%) N=256	Bamenda (%) N= 211	Bertoua (%) N=267	Ngaoundere (%) N=303	Kribi (%) N=169	Total proportion (%) N=1817
General Demographics									
Age	18- 21	5.5	7.0	11.3	15.2	17.2	13.9	7.69	11.0 (200/1817)
	21-24	19.7	16.3	12.1	24.2	14.6	27.1	22.5	19.3 (351/1817)
	25-29	32.9	30.2	26.2	28.9	27.0	29.7	31.4	29.5 (536/1817)
	30-34	19.4	20.6	19.1	18.0	12.4	15.2	18.3	17.6 (319/1817)
	35+	22.6	24.3	31.3	13.7	28.8	14.2	20.1	22.6 (411/1817)
Length of residence in city	Don't live in city	0.0	0.7	6.3	0.5	7.5	5.6	6.50	3.7 (67/1817)
	Less than 3 months	3.2	6.3	21.1	8.10	9.7	18.8	14.8	11.4 (208/1817)
	More than 3 months	96.8	93.0	72.7	91.5	82.8	75.6	78.7	84.9 (1542/1817)
Highest level of education	None	3.2	3.7	3.9	1.9	8.6	8.1	1.2	4.7 (84/1806)
	Primary school or less	34.6	32.6	45.3	35.1	45.3	36.3	29.6	37.2 (672/1806)
	Some secondary or high school	39.8	47.2	38.2	26.5	30.0	41.0	41.4	38.2 (689/1806)
	Completed secondary school or high school	19.4	13.6	11.8	34.6	13.5	14.6	24.9	18.0 (325/1806)

Table 47 cont.		**Yaoundé (%) N=310**	**Douala (%) N=301**	**Bafoussam (%) N=256**	**Bamenda (%) N= 211**	**Bertoua (%) N=267**	**Ngaoundere (%) N=303**	**Kribi (%) N=169**	**Total proportion (%) N=1817**
Highest level of education	Post high school university or vocational training	2.9	3.0	0.8	1.8	2.6	0.0	3.0	2.0 (36/1806)
Other income aside from sex work		41.9	35.5	53.9	32.7	44.4	10.6	37.9	36.3 (656/1809)
Current Marital Status	Not officially married	93.8	95.3	89.8	96.2	96.2	96.4	98.2	94.9 (1667/1756)
	Officially married (monogamy)	5.2	4.3	4.7	3.3	1.9	2.0	1.8	3.5 (61/1756)
	Officially married (polygamy)	1.0	0.3	5.5	0.5	1.9	1.6	0.0	1.60 (28/1756)
Have children		86.6	87.4	87.6	56.9	82.7	83.7	77.4	81.3 (1301/1600)
Items unique to FSW									
Disclosed occupation to doctor or a nurse		34.5	38.3	27.0	22.3	49.4	17.3	42.9	32.7 (593/1811)

Table 48. Condom negotiation among FSW in Cameroon

		Yaoundé (%)	Douala (%)	Bafoussam (%)	Bamenda (%)	Bertoua (%)	Ngaoundere (%)	Kribi (%)	All cities (%)
Ability to find and negotiate condom use									
Find male condoms	Difficult	4.3	2.7	3.9	2.9	5.7	1.0	6.7	3.7 (66/1796)
	Neither difficult nor easy	0.7	3.3	3.1	1.4	38.2	18.2	4.8	10.4 (186/1796)
	Easy	95.0	94.0	92.9	95.7	56.1	80.9	88.5	86.0 (1544/1796)
Find female condoms	Difficult	47.7	60.6	62.7	28.9	6.5	75.5	44.6	46.0 (365/793)
	Neither difficult nor easy	5.8	8.7	10.7	25.8	41.4	17.0	10.8	19.8 (157/793)
	Easy	46.5	30.8	26.7	45.4	52.1	7.4	44.6	34.2 (271/793)
Find lubricant	Difficult	46.6	51.2	65.0	32.3	28.8	91.1	50.9	46.8 (451/964)
	Neither difficult nor easy	9.6	9.7	9.7	9.0	16.8	0.0	12.3	10.8 (104/964)
	Easy	43.8	39.1	39.1	58.6	54.3	8.9	36.8	42.4 (409/964)
Suggest a condom with a client	Difficult	2.6	2.3	0.0	4.3	4.2	4.3	3.0	2.9 (53/1802)
	Neither difficult nor easy	2.6	3.3	0.4	1.4	30.4	38.0	7.2	12.7 (228/1802)
	Easy	94.8	94.4	99.6	94.3	65.4	57.8	89.8	84.4 (1521/1802)

Table 48 cont.		**Yaoundé (%)**	**Douala (%)**	**Bafoussam (%)**	**Bamenda (%)**	**Bertoua (%)**	**Ngaoundere (%)**	**Kribi (%)**	**All cities (%)**
Suggest a condom to non-paying partner	Difficult	15.6	40.1	36.5	55.9	48.5	53.2	24.4	40.4 (595/1474)
	Neither difficult nor easy	10.1	13.5	9.6	23.1	13.9	21.7	15.3	15.4 (227/1474)
	Easy	74.3	46.4	53.8	21.0	37.6	25.1	60.3	44.2 (652/1474)
Been offered more money to have sex without a condom	Never	8.1	12.3	18.9	23.9	15.5	5.70	15.6	13.5 (244/1804)
	In the past week	44.2	36.5	43.3	40.2	58.9	67.3	40.1	47.9 (865/1804)
	In the past month	24.4	34.2	25.2	18.2	22.3	20.7	26.9	24.7 (446/1804)
	In the past year	18.8	7.30	9.4	13.9	2.6	4.3	10.2	9.40 (170/1804)
	More than one year ago	4.5	9.6	4.5	3.8	0.8	2.0	7.2	4.4 (79/1804)

Table 49. Sexual behaviors and drug use among FSW in Cameroon

		Yaoundé	Douala	Bafoussam	Bamenda	Bertoua	Ngaoundere	Kribi	All cities
Sexual Behaviors									
		Mean	**Mean**	**Mean**	**Mean**	**Mean**	**Mean**	**Mean**	**Mean**
Number of clients in past month		97.4	155.7	100.7	73.7	124.1	114.2	67.2	109.5
Number of non-paying partners in past month		0.8	0.8	0.8	2.2	1.6	1.6	1.1	1.2
		%	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Male condom use during vaginal sex with clients in past month	Everytime	69.0	58.5	70.6	17.5	9.40	10.9	46.7	40.8 (737/1805)
	Almost everytime	23.7	31.9	14.5	45.5	58.6	71.9	45.0	41.6 (750/1805)
	Some of the time	7.3	9.3	14.9	35.5	28.9	16.8	5.9	16.7 (301/1805)
	Almost none of the time	0.0	0.0	0.0	0.5	1.5	0.3	0.0	0.3 (6/1805)
	None of the time	0.0	0.3	0.0	0.9	1.5	0.0	2.4	0.6 (11/1805)
Female condom use during vaginal sex with clients in past month	Everytime	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.1 (2/1802)
	Almost everytime	1.3	1.7	2.4	9.5	8.3	3.5	1.2	3.5 (63/1802)
	Some of the time	19.7	23.0	20.1	31.8	53.0	35.2	39.3	35.2 (635/1802)
	Almost none of the time	4.0	4.7	4.7	4.7	1.9	3.3	3.6	3.3 (60/1802)
	None of the time	75.0	70.7	72.8	54.0	36.8	57.8	54.8	57.8 (1042/1802)

Table 49 cont.		Yaoundé	Douala	Bafoussam	Bamenda	Bertoua	Ngaoundere	Kribi	All cities
Male condom use during vaginal sex with non-paying partners in past month	Everytime	15.1	13.0	30.8	3.0	5.7	5.1	29.4	13.1 (180/1379)
	Almost everytime	3.5	14.1	5.5	38.6	16.2	11.8	11.9	14.6 (202/1379)
	Some of the time	17.6	14.6	14.8	31.5	34.6	60.4	12.7	29.1 (401/1379)
	Almost none of the time	7.00	12.0	0.5	11.2	6.60	13.3	4.8	8.3 (115/1379)
	None of the time	56.8	46.4	48.4	15.7	36.8	9.40	41.3	34.9 (481/1379)
Female condom use during vaginal sex with non-paying partners in past month	Everytime	0.5	0.5	0.5	0.5	0.0	0.0	0.8	0.4 (5/1383)
	Almost everytime	0.0	1.6	1.6	8.6	4.0	1.1	0.0	2.5 (35/1383)
	Some of the time	4.5	6.3	3.8	23.9	24.3	59.9	13.5	22.0 (304/1383)
	Almost none of the time	2.0	3.2	3.3	6.6	5.3	1.1	4.0	3.5 (49/1383)
	None of the time	93.0	88.4	90.7	60.4	66.4	37.8	81.7	71.6 (990/1383)
How did you learn to use a male condom	Sexual partner	28.4	13.0	18.8	51.2	6.10	53.5	19.4	27.2 (492/1806)
	Friend	14.8	29.0	36.5	17.7	17.4	7.60	23.0	20.5 (370/1806)
	Outreach worker	6.8	8.7	4.3	11.5	62.1	28.7	10.3	19.4 (350/1806)
	Drop in center	0.3	1.3	3.9	4.3	6.1	0.0	9.1	3.0 (55/1806)

Table 49 cont.		Yaoundé	Douala	Bafoussam	Bamenda	Bertoua	Ngaoundere	Kribi	All cities
How did you learn to use a female condom	Sexual partner	14.0	4.1	4.3	10.9	2.3	25.1	1.1	10.0 (85/853)
	Friend	11.0	18.4	47.3	19.1	9.0	16.4	13.0	17.8 (152/853)
	Outreach worker	17.0	23.5	10.8	7.30	66.1	44.3	25.0	32.7 (279/853)
	Drop in center	4.0	11.2	12.9	30.0	6.2	0.0	35.9	12.2 (104/853)
Male condom slipping off or breaking during vaginal or anal sex in past month		50.7	53.9	40.0	46.4	41.3	45.2	46.1	46.5 (830/1786)
Female condom slipping off or breaking during vaginal or anal sex in past month		1.3	6.7	0.0	19.6	0.6	1.6	0.0	3.9 (30/767)
Condom acquisition	Buy them	65.8	81.4	95.3	44.0	14.4	76.6	55.7	63.5 (1148/1809)
	Get them for free	5.5	2.3	2.0	1.9	8.4	1.3	15.6	4.7 (85/1809)
	Both buy them and get them free	28.7	16.3	2.70	54.1	77.2	22.1	28.7	31.8 (576/1809)
If free, where do you usually get them	ACMS	0.0	1.8	0.0	0.0	0.0	18.3	0.0	2.1 (14/661)
	Local clinic	0.9	5.4	8.3	4.3	1.3	0.0	2.7	2.3 (15/661)
	Drop in center	2.8	16.1	8.3	34.2	12.4	0.0	52.7	18.2 (120/661)
	Peer educator/ Outreach worker	60.4	39.3	16.7	46.2	80.9	45.1	25.7	56.7 (375/661)

Table 49 cont.		Yaoundé	Douala	Bafoussam	Bamenda	Bertoua	Ngaoundere	Kribi	All cities
If free, where do you usually get them	Mobile van	0.0	5.4	0.0	2.6	3.1	12.7	2.7	3.6 (24/661)
	Public Hospital	7.5	0.0	25.0	12.8	1.3	12.7	6.8	6.5 (43/661)
	Other	28.3	32.1	41.7	0.0	0.90	11.3	9.5	10.6 (70/661)
If bought them, where do you usually buy them	A shop	46.6	53.2	68.3	24.3	68.0	53.8	74.5	54.9 (952/1734)
	Cigarette seller on the street	41.8	30.7	8.7	8.90	21.7	34.1	7.1	24.2 (420/1734)
	Vendors of condoms	6.1	6.5	13.9	45.0	8.3	11.4	2.8	12.8 (222/1734)
	Pharmacies	3.1	6.1	6.7	21.8	2.0	0.7	14.2	6.6 (115/1734)
	Other	2.4	3.4	2.4	0.0	0.0	0.0	1.4	1.4 (25/1734)
Do you ever use lubricants during sex	No	41.3	28.3	55.9	35.5	30.7	83.7	29.2	44.9 (814/1813)
	Yes	58.7	71.7	44.1	64.5	69.3	16.3	70.8	55.1 (999/1813)
Drug Use									
Injected drugs using a needle		0.0	1.3	0.4	6.6	1.9	0.3	0.6	1.5 (26/1792)

Table 50. HIV outcomes and treatment of FSW in Cameroon

		Yaoundé (%)	Douala (%)	Bafoussam (%)	Bamenda (%)	Bertoua (%)	Ngaoundere (%)	Kribi (%)	All cities (%)
Self-report									
Knowledge of HIV status	Never been tested	8.4	5.9	2.0	1.4	9.8	17.1	4.7	7.6 (136/1793)
	Never received test results	1.0	1.0	0.0	0.5	2.7	8.7	4.1	2.6 (47/1793)
	Yes	90.6	93.1	98.0	98.1	87.5	74.2	91.1	89.8 (1610/1793)
If known, HIV status	Living with HIV	7.2	4.9	3.2	2.5	10.9	0.0	6.5	5.1 (81/1601)
	Not living with HIV	92.8	95.1	96.8	97.5	89.1	100	93.5	94.9 (1520/1601)
If not living with HIV, tested in the past 12 months		71.5	81.3	82.3	53.6	79.8	63.3	85.3	73.8 (1116/1512)
If living with HIV, receiving treatment		70.0	76.9	62.5	60.0	44.0	NA	90.0	64.2 (52/81)
If not receiving treatment, have received CD4 results		20.0	0.0	66.7	0.0	14.3	NA	0.0	18.5 (5/27)
If not receiving treatment, ever been told you need treatment by a healthcare professional		33.3	0.0	66.7	50.0	15.4	NA	0.0	25.9 (7/27)
If living with HIV, do you tell non-paying partners you have HIV	None of them	21.1	80	42.9	66.7	88	NA	50.0	65.2 (45/69)
	Some of them	52.6	20	28.6	33.3	12	NA	50.0	8.7 (6/69)
	All of them	26.3	0.0	28.6	0.0	0	NA	0.0	26.1 (18/69)

Table 51. Exposure to HIV prevention efforts among FSW in Cameroon

		Yaoundé (%)	Douala (%)	Bafoussam (%)	Bamenda (%)	Bertoua (%)	Ngaoundere (%)	Kribi (%)	All cities (%) (n/N)
Exposure to prevention efforts									
Received HIV prevention information in past 12 months		60.3	67.8	63.3	65.7	87.5	57.8	82.8	68.0 (1235/1800)
Received HIV prevention from:	Doctor or health provider	57.0	51.7	71.0	49.2	26.5	32.2	57.9	48.0 (589/1226)
	Peer educator	72.3	63.2	45.1	60.5	89.2	46.0	80.7	66.3 (817/1232)
	Mosque, church, religious group	18.3	11.3	10.7	9.8	2.6	1.1	26.4	10.8 (132/1224)
	Internet	3.2	3.9	6.3	3.8	6.5	1.7	14.4	5.5 (67/1224)
	Friends or family	41.6	35.3	52.5	25.8	29.9	6.9	55.7	34.8 (427/1228)
	Other sex workers	40.0	41.3	48.4	29.5	22.1	5.7	56.4	33.8 (414/1224)
	Media	54.3	58.8	75.3	44.9	30.4	22.4	67.1	49.5 (606/1224)

Table 52. HIV-related services mentioned by more than 10% of FSW (n=256) in the Bafoussam area

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year	PMTCT
Centre Medical d'arrondissement de Djeleng	32.0%	No	No	Yes	No	No	No	Yes
Hopital Regional de Bafoussam	15.6%	No	No	Yes	No	Yes	Yes	Yes
None mentioned	5.5%	-	-	-	-	-	-	-

Table 53. HIV-related services mentioned by more than 10% of FSW (n=211) in the Bamenda area

Services mentioned	% mention-ing	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year	PMTCT
Bamenda Regional Hospital	47.2%	Don't know	Yes	Yes	No	Yes	Yes	Yes
PMI Nkwen	25.1%	-	-	-	-	-	-	-
Baptist Health Center Bamenda	24.6%	Yes	Yes	Yes	Yes	Yes	Yes	Yes
None mentioned	2.8%	-	-	-	-	-	-	-

Table 54. HIV-related services mentioned by more than 10% of FSW (n=266) in the Bertoua area

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year	PMTCT
Hopital Regional de Bertoua	48.6%	No	Yes	Yes	No	Yes	Yes	Don't know
ASAD	22.1%	Yes	Yes	Yes	Yes	No	NA	Don't know
CSI de Mokolo 1	21.8%	Yes	Yes	Yes	Yes	No	NA	Don't know
CSI Catholique De Nkolbikon	12.8%	No	Yes	Yes	No	Yes	Yes	Don't know
Hopital Militaire de Bertoua	10.5%	No	Yes	Yes	No	No	NA	Don't know
None mentioned	4.5%	-	-	-	-	-	-	-

Table 55. HIV-related services mentioned by more than 10% of FSW (n=301) in the Douala area

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year	PMTCT
Baptist Health Center Douala	10.6%	No	Yes	Yes	No	Yes	Yes	Yes
None mentioned	6.3%	-	-	-	-	-	-	-

Table 56. HIV-related services mentioned by more than 10% of FSW in the Kribi area (n=169)

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year	PMTCT
Hopital de District de Kribi	28.9%	Don't know	Yes	Yes	No	Yes	No	Yes
ESPK (Espace Sante Prevention de Kribi)	23.7%	Yes	No	Yes	No	No	NA	No
None mentioned	33.7%	-	-	-	-	-	-	-

Table 57. HIV-related services mentioned by more than 10% of FSW in the Ngaoundere area (n=303)

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year	PMTCT
Hopital Regional de Ngaoundere	58.4%	No	Yes	Yes	No	Yes	No	Don't know
Centre de Sante Intégré de Sabongari	18.9%	Yes	Yes	No	No	Yes	Yes	Don't know
Hopital Protestant de Ngaoundere	14.9%	Yes	Yes	Yes	Yes	Yes	Yes	Don't know
None mentioned	4.2%	-	-	-	-	-	-	-

Table 58. HIV-related services mentioned by more than 10% of FSW in the Yaoundé area (n=309)

Services mentioned	% mentioning	Staff training for MSM/ FSW	STI testing and treatment	HIV testing	HIV testing for MSM/FSW	ART in past month	ART shortages in past year	PMTCT
Hopital Central de Yaoundé	13.2%	Yes	Yes	Yes	No	Yes	Yes	Yes
Horizons Femmes (Yaoundé)	11.6%	Yes	Yes	Yes	Yes	No	NA	No
None mentioned	17.2%	-	-	-	-	-	-	-

Table 59. Prevalence of structural barriers to care among FSW in Cameroon

	Yaoundé (%)	Douala (%)	Bafoussam (%)	Bamenda (%)	Bertoua (%)	Ngaoundere (%)	Kribi (%)	All cities (%)
Sexual Violence								
Ever forced to have sex	36.9	36.5	31.4	57.1	50.4	57.7	60.0	45.9 (813/1773)
Events occurring as a result of selling sex								
Afraid to access healthcare services	13.0	12.7	8.20	9.10	8.00	15.2	29.6	13.0 (234/1796)
Been denied healthcare services	1.0	3.0	1.2	1.9	5.6	1.3	11.8	3.2 (57/1790)
Felt treated badly in a healthcare center	1.6	3.0	1.6	4.3	12.9	2.6	17.2	5.4 (96/1790)
Been denied police protection	45.3	32.0	30.5	9.00	66.4	8.90	42.0	33.4 (601/1801)
Been arrested	65.2	67.9	49.4	43.3	63.9	47.5	42.6	55.6 (1008/1812)
Been to jail or prison	1.3	6.5	2.0	2.4	12.5	4.0	3.6	4.7 (84/1804)
Been blackmailed	57.5	53.2	38.8	49.8	66.2	54.5	69.5	55.1 (995/1805)
Been beaten up or physically hurt	31.6	35.9	34.4	41.7	45.7	51.5	39.3	40.0 (724/1812)

Table 60. Number of services mentioned per city and by population

City	Total services mentioned (inc. in other cities)	Total services mentioned within city	Services mentioned by MSM	Services mentioned by FSW	Services mentioned by both (% in common)
Bafoussam *	90	42	26	24	7 (19.0%)
Bamenda	59	24	17	17	9 (37.5%)
Bertoua	52	20	13	15	8 (40.0%)
Douala	124	84	40	61	17 (20.2%)
Kribi	26	17	11	15	10 (58.8%)
Ngaoundere	27	11	10	6	5 (45.5%)
Yaoundé	117	86	49	66	29 (33.7%)
*Includes Bafoussam, Bangangté, Baham, Bandjoun, Dschang, Koutaba and Mbouda.					

Table 61. Service type and funding sources in Cameroon

		All sites % (n/N)	Top cited services % (n/N)
Population that identified the service for HIV/AIDS prevention or treatment	Female sex worker (FSW)	21.4 (22/103)	4.0 (1/25)
	Men who have sex with men (MSM)	9.7 (10/103)	16.0 (4/25)
	Both FSW and MSM	68.9 (71/103)	80.0 (20/25)
Type of service	Public hospital/clinic	42.7 (44/103)	44.0 (11/25)
	Private hospital/clinic	37.9 (39/103)	20.0 (5/25)
	NGO/CBO	19.4 (20/103)	36.0 (9/25)
Length of operation	0-4 years	15.3 (15/98)	25.0 (6/24)
	5-9 years	23.5 (23/98)	16.7 (4/24)
	10+ years	61.2 (60/98)	58.3 (14/24)
Management	Cameroonian Government	42.2 (43/102)	44.0 (11/25)
	Private	16.7 (17/102)	8.0 (2/25)
	Religious Organization	20.6 (21/102)	16.0 (4/25)
	NGO/CBO	18.6 (19/102)	32.0 (8/25)
	Other	2.0 (2/102)	0.0 (0/25)
Primary funder	Cameroon Government	41.2 (42/102)	40.0 (10/25)
	Private	15.7 (16/102)	4.0 (1/25)
	Religious Organization	20.6 (21/102)	16.0 (4/25)
	NGO/CBO	12.7 (13/102)	12.0 (3/25)
	US Government	4.9 (5/102)	12.0 (3/25)
	Other	4.9 (5/102)	16.0 (4/25)
Receives PEPFAR funds		13.3 (13/98)	34.8 (8/23)

Table 62. Staffing levels at services in Cameroon

		All sites mean (N)	Top cited services mean (N)
Number of staff on a busy day: mean (N)	Male	6.5 (100)	8.3 (23)
	Female	10.7 (101)	11.8 (24)
Number of doctors: mean (N)	Paid	1.9 (101)	2.0 (25)
	Volunteer	0.4 (97)	0.7 (24)
Number of nurses: mean (N)	Paid	9.8 (100)	10.7 (25)
	Volunteer	1.1 (98)	1.8 (24)
Number of counselors/social workers: mean (N)	Paid	1.7 (102)	2.0 (25)
	Volunteer	0.4 (97)	0.6 (23)
Number of peer educators/ community staff: mean (N)	Paid	2.1 (98)	2.4 (25)
	Volunteer	2.4 (98)	3.2 (24)
		All sites % (N)	**Top cited services % (N)**
Proportion of workers trained for FSW/MSM care	All or almost all	12.2 (12/98)	16.7 (4/24)
	More than half	9.2 (9/98)	20.8 (5/24)
	Less than half	28.6 (28/98)	20.8 (5/24)
	None	50.0 (49/98)	41.7 (10/24)

Table 63. Clients who use services in Cameroon

		All sites	Top cited services
Client/visitor registry		99.0% (97/98)	100% (23/23)
Number of registered clients: mean (N)		Mean = 2354.5 (n=87)	Mean = 4176.9 (n=23)
Number of staff and clients at service on the busiest day: mean (N)		Mean=73.8 (n=96)	Mean=123.3 (n=24)
Days of the week service is open: mean (N)		Mean= 5.9 (n=102)	Mean=5.8 (n=25)
Open after 6pm at least one night of the week		52.0% (53/102)	48.0% (12/25)
Proportion of people who use the service who are sex workers	All or almost all	6.5% (3/46)	8.3% (1/12)
	More than half	15.2% (7/46)	16.7% (2/12)
	Less than half	54.3% (25/46)	58.3% (7/12)
	None	23.9% (11/46)	16.7% (2/12)
Proportion of people who use the service who are MSM	All or almost all	8.1% (3/37)	7.7% (1/13)
	More than half	13.5% (5/37)	30.8% (4/13)
	Less than half	43.2% (16/37)	38.5% (5/13)
	None	35.1% (13/37)	23.1% (3/13)
Clients who use the service come from:	The city where the service is located	100% (101/101)	100% (25/25)
	Elsewhere in the region	94.1% (95/101)	100% (25/25)
	Elsewhere in the country	81.9% (77/94)	95.5% (21/22)
	Outside the country	63.9% (53/83)	84.2% (16/19)

Table 64. Specific services offered in Cameroon

		All sites % (n/N)	Top cited services % (n/N)
Provide outreach services		58.8 (60/102)	80.0 (20/25)
In the past four weeks proportion of centers that provided:	HIV counseling and testing	90.2 (92/102)	92.0 (23/25)
	FSW/MSM specialist HIV counseling and testing	20.0 (20/100)	37.5 (9/24)
	HIV counseling with referral for HIV testing	80.0 (80/100)	91.3 (21/23)
	FSW/MSM HIV counseling with referral for HIV testing	22.2 (22/99)	41.7 (10/24)
	ART medication for people living with HIV	54.5 (55/101)	52.0 (13/25)
	ART medication for FSW/MSM	13.0 (13/100)	16.0 (4/25)
	Peer education	42.9 (42/98)	66.7 (16/24)
	Support groups	54.5 (55/101)	80.0 (20/25)
	PMTCT	73.6 (64/87)	56.2 (9/16)
	STI counseling and testing	86.3 (88/102)	80.0 (20/25)
	STI treatment	83.0 (83/100)	76.0 (19/25)
	Psychosocial counseling	82.4 (84/102)	92.0 (23/25)
	General health services	55.0 (55/100)	60.0 (15/25)
	FSW/MSM sensitive general health services	8.1 (8/99)	20.8 (5/24)
	Nutritional support	58.8 (60/102)	80.0 (20/25)
	Family planning	74.5 (76/102)	60.0 (15/25)
	Inpatient facilities for people living with HIV	63.4 (64/101)	58.3 (14/24)
	Any HIV/AIDS prevention	92.1 (93/101)	100 (25/25)
	Educational talk on HIV/AIDS	84.2 (85/101)	92.0 (23/25)
	Free male condoms	44.6 (45/101)	66.7 (16/24)
	Free female condoms	36.5 (35/97)	60.0 (15/25)
	Free condom compatible lubricant	20.0 (20/100)	40.0 (10/25)
	HIV/AIDS video shown	27.7 (28/101)	56.0 (14/25)
	HIV/AIDS radio program broadcast	15.8 (16/101)	32.0 (8/25)
	HIV/AIDS posters or leaflets	58.4 (59/101)	80.0 (20/25)

Table 64 cont.		**All sites % (n/N)**	**Top cited services % (n/N)**
Number of specialized FSW/MSM HIV tests in past week at centers that provide testing: mean (N)		mean=56.9 (n=17)	mean=137.3 (n=3)
Maximum number of male condoms someone can take per day at centers that provide male condoms: mean (N)		mean=9.8 (n=45)	mean=12.2 (n=17)
Maximum number of female condoms someone can take per day at centers that provide female condoms: mean (N)		mean=3.6 (n=42)	Mean=4.0 (n=16)
Maximum number of condom compatible lubricant someone can take per day at centers that provide condom compatible lubricant: mean (N)		6.4 (27)	11.7 (11)
Centers that provide ART with a shortage in past 12 months	Yes	55.4 (41/74)	61.1 (11/18)
	No shortages	44.1 (33/74)	38.9 (7/18)

Table 65. Condom distribution and availability in Cameroon

		All sites % (n/N)	Top cited services % (n/N)
Condom availability at the center in the past 12 months	Always	29.9 (29/97)	45.8 (11/24)
	Sometimes	39.2 (38/97)	37.5 (9/24)
	Never	30.9 (30/97)	16.7 (4/24)
Willingness to distribute condoms	No	5.1 (5/99)	0.0 (0/24)
	Yes	94.9 (94/99)	100 (24/24)
Male condoms available day of interview	No	49.0 (49/100)	32.0 (8/25)
	Yes, but not seen	14.0 (14/100)	12.0 (3/25)
	Yes, seen	37.0 (37/100)	56.0 (14/25)
Female condoms available day of interview	No	57.6 (57/99)	32.0 (8/25)
	Yes, but not seen	8.1 (8/99)	12.0 (3/25)
	Yes, seen	34.3 (34/99)	56.0 (14/25)
Number of condoms distributed in the past 7 days		mean = 121.6 (n=67)	mean = 256.6 (n=16)

Table 66. Community involvement and user fees in Cameroon

		All sites % (n/N)	Top cited services % (n/N)
Meetings about facility activities including both staff and community members		55.9 (57/102)	88.0 (22/25)
Procedure for receiving feedback from clients	Yes, procedure is visible	35.1 (34/97)	33.3 (8/24)
	Yes, procedure exists but was not seen	30.9 (30/97)	29.2 (7/24)
	No procedure exists	34.0 (33/97)	37.5 (9/24)
Reports or data including key indicators and quality assurance	Yes, record observed	32.7 (32/98)	52.0 (13/25)
	Yes, record exists but was not seen	51.0 (50/98)	36.0 (9/25)
	No record maintained	16.3 (16/98)	12.0 (3/25)
User fees in place for at least one service		78.4 (80/102)	64.0 (16/25)
User fees in place:	Registration of member fee	44.0 (40/91)	55.0 (11/20)
	Consultation fee	76.1 (70/92)	61.9 (13/21)
	Medication fee	32.2 (29/90)	33.3 (7/21)
	Laboratory or test fee	51.6 (47/91)	50.0 (10/20)
	Discounts or exemptions for some clients	73.0 (65/89)	83.3 (15/18)