Third National Behavioural Assessment of Key Populations in Kenya
POLLING BOOTH SURVEY REPORT
Third National Behavioural Assessment of Key Populations in Kenya: Polling Booth Survey Report


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• National Networks: Kenya Sex Workers Alliance (KESWA), Kenya Network of People Who Inject Drugs (KeNPUD), Harm Reduction Network

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Kenya has the third largest population of people living with HIV in sub-Saharan Africa and the highest national HIV prevalence of any country outside of Southern Africa. HIV in Kenya is characterized as a generalized epidemic among the adult population but has a more concentrated epidemic among key populations, who are considered to be at heightened risk for HIV acquisition and transmission. In Kenya, these key populations include female sex workers (FSWs), male sex workers (MSWs), men who have sex with men (MSM), and people who inject drugs (PWID). Although progress has been made to reduce the incidence and prevalence of HIV in the general population, evidence shows that these gains may be reversed if a concerted effort is not made to reduce HIV transmission among the key populations.

Interventions among key population groups have already been initiated in many counties, with funding support from PEPFAR and the Global Fund, since the prioritization of key populations in the Kenya AIDS Strategic Framework (KASF). The National AIDS Control Council (NACC) and the National AIDS and STI Control Programme (NASCOP) have developed guidelines and strategy documents to clearly define the country’s interventions with the key populations. Ninety-five interventions with at-risk groups spread over 34 counties report to NASCOP on a regular basis.

We have conducted three Polling Booth Surveys (PBSs) to measure the progress achieved by these interventions in terms of behavioural change among key populations. With support from the Global Fund, the third PBS measured behavioural outcomes among key populations in 13 FSW sites, 6 MSM sites, and 5 PWID sites. The methodology is simple, rapid, and cost effective, and I recommend that we continue to conduct such surveys every year. Tracking the behaviours of key populations will help us assess the performance of our interventions and make corrections if needed.

Based on the findings of this study, it is very clear that in the coming year the interventions need to focus on a) making condoms, needles, and syringes accessible; b) building skills among the key populations to consistently negotiate condom use with all sexual partners; c) keeping HIV positive key populations in the cascade of treatment and care; d) addressing the violence that they experience; and e) ensuring that key populations are mobilized to visit the safe spaces and use the services that have been established. It was also noted that we need to develop and launch appropriate interventions for young key populations.

I look forward to the dissemination of these findings and to changes in programme strategy based on the findings to make our interventions with key populations more effective.

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All the peer educators and outreach workers in study sites who supported the study

Participating Populations
All the sex workers, men who have sex with men, and people who inject drugs who participated in the study from Nairobi, Kilifi, Kisumu, Mombasa, Thika, Nyeri, Nakuru, Eldoret, Meru, Kitui, Bungoma, Homa Bay, and Turkana.

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Key Populations Technical Working Group, Kenya Sex Workers Alliance, and Kenya Network of People Who Use Drugs, Harm Reduction Network

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<td>Ananda Marga Universal Relief Team</td>
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<td>ART</td>
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<td>BHESP</td>
<td>Bar Hostess Empowerment &amp; Support Programme</td>
</tr>
<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<tr>
<td>DIC</td>
<td>Drop-In Centre</td>
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<tr>
<td>EGPAF</td>
<td>Elizabeth Glaser Pediatric AIDS Foundation</td>
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<tr>
<td>FAIR</td>
<td>Family AIDS Initiative Response</td>
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<tr>
<td>FP</td>
<td>Family Planning</td>
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<tr>
<td>FSW</td>
<td>Female Sex Worker</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<td>HOYMAS</td>
<td>Health Options for Young Men on HIV/AIDS/STI</td>
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<td>International Centre for Reproductive Health</td>
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<tr>
<td>IRC</td>
<td>International Rescue Committee</td>
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<tr>
<td>IRDO</td>
<td>Impact Research and Development Organisation</td>
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<td>Kenya AIDS NGOs Consortium</td>
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<tr>
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<td>Kenya AIDS Strategic Framework</td>
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<tr>
<td>KASH</td>
<td>Keeping Alive Societies Hope</td>
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<tr>
<td>KP</td>
<td>Key Population</td>
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<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
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<tr>
<td>MEWA</td>
<td>Muslim Education and Welfare Association</td>
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<td>MPEG</td>
<td>Minority Persons Empowerment Programme</td>
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<td>Men Who Have Sex with Men</td>
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<td>MSW</td>
<td>Male Sex Worker</td>
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<td>National AIDS and STI Control Programme</td>
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<td>National Organisation of Peer Educators</td>
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<tr>
<td>PBS</td>
<td>Polling Booth Survey</td>
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<tr>
<td>PEPFAR</td>
<td>The United States President's Emergency Plan for AIDS Relief</td>
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<tr>
<td>PrEP</td>
<td>Pre-Exposure Prophylaxis</td>
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<tr>
<td>PWID</td>
<td>People Who Inject Drugs</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
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<td>--------------</td>
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<tr>
<td>SAPTA</td>
<td>Support for Addiction Prevention and Treatment in Africa</td>
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<tr>
<td>SOP</td>
<td>Standard Operating Protocol</td>
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<tr>
<td>SRH</td>
<td>Sexual and Reproductive Health</td>
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<tr>
<td>STI</td>
<td>Sexually Transmitted Infection</td>
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<td>Technical Support Unit</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<td>YFSW</td>
<td>Young Female Sex Worker</td>
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<td>YMSM</td>
<td>Young Men Who Have Sex with Men</td>
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<td>YPWID</td>
<td>Young People Who Inject Drugs</td>
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In 2009, evidence from the Kenya Modes of Transmission Study highlighted the concentrated epidemic of AIDS among female sex workers (FSWs), men who have sex with men (MSM), and people who inject drugs (PWID). The study’s finding that these populations contributed 33 percent of new HIV infections indicated that halting transmission of HIV among them was key to reducing HIV prevalence in Kenya. Using this evidence and findings from the Kenya AIDS Indicator Survey (2008/9), the Government of Kenya revised the existing national HIV programming framework and prioritized targeted comprehensive programming for key populations in the 2014/15 – 2018/19 Kenya AIDS Strategic Framework (KASF).

To enable programme managers to assess and adjust HIV-prevention interventions, targeted programmes track behaviours among key populations. However, information on sexual behaviour—particularly condom use—is difficult to obtain because it is very sensitive. Face-to-face interviews often elicit socially desirable answers. To obtain accurate data about sexual and health-seeking behaviour, Polling Booth Surveys (PBSs) use group interview techniques whereby participants respond through a ballot box in an anonymous and unlinked manner.

The Kenya National AIDS and STI Control Programme (NASCOP) conducted polling booth surveys in 2014, 2015, and 2017 to measure outcomes from the national HIV prevention programme for key populations, comprising behavioural, biomedical, and structural interventions. We compared survey results from the first and third rounds. Comparing the third to the first round, significantly more FSWs (92 percent vs. 88 percent) and MSM (77 percent vs. 58 percent) reported condom use at last sex with a paying client, and a slight increase at last anal sex among MSM (79 percent vs. 77 percent). However, condom use with regular partners remained low, at 57 percent for FSWs and 73 percent for MSM. Among PWID, there was a slight decrease in use of new needles and syringes at last injection (86 percent in 2017 vs. 88 percent in 2014), but significant decreases in reported non-availability of clean needles (29 percent in 2017 vs. 36 percent in 2014) and number of overdoses in the past six months (40 percent in 2017 vs. 51 percent in 2014). FSWs and MSM reported significantly higher HIV testing, and in all KP groups over 90 percent reported ever having been tested for HIV. Among the respondents who reported having tested HIV positive (26 percent of FSW, 17 percent of MSM, and 20 percent of PWID), 73 percent of FSWs, 63 percent of MSM, and 68 percent of PWID reported currently taking antiretroviral therapy (ART). While the experience of forced intercourse decreased for MSM (14 percent in 2017 vs. 17 percent in 2014), forced intercourse by partners increased among FSWs, though it was not significant (25 percent in 2017 vs. 22 percent in 2014). More FSW respondents (48 percent) reported violence by law enforcement personnel in 2017 compared to MSM (20 percent) and PWID (44 percent). And though violence by law enforcement personnel against FSWs increased between 2014 and 2017, such violence decreased among MSM and PWID during the same period. These findings provide valuable information on the programme’s progress, and indicate where greater effort must be made for the integrated behavioural, biomedical, and structural interventions to achieve their HIV prevention targets.

Kenya also included young key populations as a sample in PBS 2017, in line with Kenya’s AIDS Strategic Framework 2014/15 – 2018/19, which prioritized HIV prevention among young people. Of the 4,393 FSWs, 1,645 MSM, and 1,131 PWID who participated in the polling booth survey sessions, 280 were young female sex workers (YFSWs), 242 were young men who have sex with men (YMSM), and 135 were young people...
Young key populations include FSWs, MSM, and PWID who are from 15 to 24 years old. Polling booth surveys with YFSWs in three sites (Kisumu, Mombasa, and Nairobi) revealed that, though condom use with clients was high (90 percent), only 44 percent of the respondents used condoms with regular, non-paying partners (lovers and husbands), 25 percent of the respondents had unprotected sex at least once in the last month, and 26 percent could not find a condom when they needed one in the last month. Forty-seven percent of the respondents experienced police violence, and only 40 percent of YFSWs who experienced violence in the past six months received post-violence support. Eighteen percent of YFSWs were HIV positive (self-reported), but only 63 percent of them were enrolled in ART. Out of those enrolled in ART, 37 percent had missed their last appointment. Polling booth surveys with YMSM in three sites (Kisumu, Mombasa, and Nairobi) revealed that only 85 percent of the respondents used a condom at last anal sex, and only 77 percent used a lubricant during their last anal sex. Sixty-one percent of the respondents were paid for having sex with a man in the last month. Twenty-six percent of the respondents had unprotected anal sex with a male partner at least once in the last month, and 14 percent could not find a condom when they needed it in the last month. Twenty-seven percent of the YMSM experienced police violence, and only 41 percent of YMSM who experienced violence in the past six months received post-violence support. Twenty percent of YMSM were HIV positive (self-reported), but only 68 percent of them were enrolled in ART. Out of those enrolled in ART, 34 percent had missed their last appointment. Polling booth surveys with YPWID in two sites (Mombasa and Nairobi) revealed that 87 percent of the respondents injected narcotic drugs in the last month. Fourteen percent of the respondents shared needles in the last month, and 29 percent could not get a new needle when they needed one in the last month. Forty-three percent of the respondents experienced drug overdose. Fifty-three percent of the respondents experienced police violence, and only 56 percent of YPWID who experienced violence received post-violence support. Nineteen percent of respondents were HIV positive (self-reported), but only 65 percent of them were enrolled in ART. Out of those enrolled in ART, 73 percent had missed their last appointment.

1 Young key populations include FSWs, MSM, and PWID who are from 15 to 24 years old.
1

BACKGROUND
Kenya has the third largest population of people living with HIV in sub-Saharan Africa and the highest national HIV prevalence of any country outside of Southern Africa. In 2015, there were approximately 1.5 million people (all ages) living with HIV. There is a mixed and geographically heterogeneous HIV epidemic, with an estimated adult HIV prevalence of 5.9 percent. In order to reduce the spread of the disease, the Government of Kenya has over the years committed numerous resources towards achieving “an HIV-free society in Kenya.” This fight is spearheaded by the National AIDS Control Council (NACC) and National AIDS and STI Control Programme (NASCOP) in collaboration with multiple local and international partners.

HIV in Kenya is characterized as a generalized epidemic among the adult population but a more concentrated epidemic among key populations, who are considered to be at heightened risk of HIV acquisition and transmission due to their sexual and social behaviours. The Kenya AIDS Strategic Framework 2014/15 – 2018/19 identified female sex workers (FSWs), men who have sex with men (MSM) and male sex workers (MSWs), and people who inject drugs (PWID) as key populations and has prioritized these populations for prevention. Despite progress in reducing HIV prevalence in the general population, there is a risk of not sustaining these gains if reductions do not occur among the key populations.

1.1 HIV Prevalence among Key Populations

According to the Kenya HIV Prevention Response and Modes of Transmission Analysis (2008) by NACC, 14.1 percent of the new HIV infections were attributed to sex workers and clients; 15.2 percent of new infections were attributed to MSM and prison populations; and 3.8 percent were attributed to PWID. A study in Nairobi in 2010 revealed that HIV prevalence was 18.2 percent among MSM; 29.3 percent among FSWs, and 18.7 percent among PWID. When further disaggregated by sex, it was established that 49 percent of female people who inject drugs and 16 percent of male people who inject drugs were HIV positive. More recent data suggests that 45.1 percent of FSWs in Kenya are HIV positive. In 2007, HIV prevalence among MSM/MSWs with exclusively male partners was 41 percent in Mombasa. When compared to HIV prevalence among the general population, the prevalence among sex workers and MSM is 4–5 times higher. A meta-analysis conducted by Baral et al. found that HIV prevalence among FSWs in Kenya was nearly six times that of adult women in the general population (45 percent vs. 7.7 percent).

In a meta-analysis of HIV prevalence among MSM and adults of reproductive age, Baral et

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3 Kenya HIV Estimates 2015. NACC and NASCOP
4 Kenya HIV Estimates 2015. NACC and NASCOP
8 Sanders EJ et al. 2007. HIV-1 infection in high risk men who have sex with men in Mombasa, Kenya. *AIDS* 21(18):2513-20. doi:10.1097/QAD.0b013e3282f2f70a
al. found that HIV prevalence among MSM in Kenya is higher (11 percent) than among adults of reproductive age in the country (7 percent).\textsuperscript{10} A rapid situation analysis of PWID in Nairobi and Coast Provinces found high HIV prevalence among PWID, ranging from 17 percent to 47 percent among male and female PWID, respectively.\textsuperscript{11} This prevalence was many times higher than HIV prevalence in the general population.

Such findings show that key populations are at higher risk of acquiring and transmitting HIV. Preventing transmission among such groups is key to controlling the HIV epidemic in Kenya.

1.2 Estimates of Key Populations

Recent mapping estimates show that there are 133,675 FSWs throughout the country, with significant regional variations ranging from a high of 29,494 FSWs in Nairobi Province to a low of 2,030 in North Eastern Province. It is estimated that there are 19,175 MSM/MSWs, and 18,327 PWID in Kenya.\textsuperscript{12} However, KAIS 2012 indicated that one percent of men between 15 and 64 years of age have had sex with another man, making the absolute number of MSM much higher. In some cities the percentage of FSWs is as high as 15 percent of the adult female population. The eight counties identified as high priority counties in the HIV prevention road map of NACC and NASCOP contain 40 percent of Kenya’s FSW population.\textsuperscript{13} It is also interesting to note that counties with high HIV prevalence have a higher number of sex workers. Interventions that target key populations are a critical HIV control strategy, irrespective of the prevalence of HIV in the counties being high or low.\textsuperscript{14}

1.3 HIV Infections among Female Sex Workers

Female sex work in Kenya is characterized by high levels of risk in terms of the number of sexual partners, the frequency of sexual acts, concurrency, and inconsistent condom use. However, there is wide diversity in sex workers’ number of sexual partners and risk behaviour. Client estimates are limited, but analysis based on the Kenya Demographic and Health Survey 2003 estimated that 15 percent of sexually active Kenyan men aged between 15 and 49 years have sex with sex workers.\textsuperscript{15}

Studies along the Mombasa-Nairobi highway, in Mombasa, and in Nyanza show great variations in numbers of partners per month—from 1 to 79—and the number of sexual encounters ranged from 3 to 192.\textsuperscript{16}

\textsuperscript{13} National AIDS Control Council and National AIDS and STI Control Programme 2014. Kenya HIV Prevention Revolution Road Map: Countdown to 2030. Nairobi: NACC and NASCOP.
\textsuperscript{14} National AIDS Control Council and National AIDS and STI Control Programme 2014. Kenya HIV Prevention Revolution Road Map: Count to 2030. Nairobi: NACC and NASCOP.
The burden of HIV prevalence among FSWs in Kenya is extremely high. FSWs’ risk of HIV infection is enhanced by a number of factors that limit their ability to control their sexual lives and sexual health. These include the illegal and criminal status of sex work, poverty, gender inequality, stigma, and sexual violence.

Consistent condom use is relatively high among sex workers who participate in peer-led HIV prevention programmes: from 70 percent to 87 percent. However, this is not universal, as not all sex workers are reached by these programmes and not all sex workers have control over their sexual lives. A key factor in risky behaviour in sex work is client resistance to condom use. A 2008 study found that among Kenyan men aged 15 to 49 years who are clients of sex workers, only 20 percent reported ever using a condom. Respondents in a 2008 Federation of Women Lawyers (FIDA) Kenya sex work survey in Nairobi, Kisumu, Busia, Mombasa, Nanyuki, and Malindi reported that most customers offer to pay higher rates for sex without a condom.

Many male clients demand anal sex from FSWs, despite knowing that anal sex carries greater risk of HIV transmission than vaginal sex. And because anal sex is better paid than vaginal sex, there is financial incentive for sex workers to practice it.

Many FSWs have non-commercial regular sexual partners, and inconsistent condom use with them increases the risk of HIV transmission from or to the non-commercial sexual partner. Further, alcohol use and abuse among FSWs increases their HIV vulnerability, as FSWs and their clients often engage in unprotected sex while intoxicated.

1.4 HIV Infections among Male Sex Workers

The typology of male sex work in Kenya includes home-based, massage parlors, road/truck stops, sex dens, street and venue-based, and escort services. Its complexities are evident from the fact that a significant number of MSWs have both male and female clients, as the 2012 mapping of MSWs/MSM revealed that 62.6 percent reported that they had sex with women and that 59 percent of these women paid for sex. Men selling sex may be homosexual, heterosexual or bi-sexual. MSWs’ inability to access health care and other support services increases their risk of contracting HIV.

1.5 HIV Infections among People Who Inject Drugs

Drug use is illegal and criminal in Kenya and contravenes the Narcotic Drugs and Psychotropic Substances (Control) Act of 1994. Mapping has revealed that there are an estimated 18,327 PWID in Kenya. Of these, 8,500 are found in Coast Province, followed by

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Nairobi, with 6,216. Between 5 and 11 percent of Kenyans who inject drugs are women. Approximately 80 percent of the PWID population inject daily, and 75 percent report at least two injections per day. Needles are reused approximately five times prior to disposal. Such behaviour significantly increases the risk of HIV transmission among PWID.

Risky sexual behaviour among PWID cannot be overlooked. Forty percent of the PWID population surveyed in Nairobi was sexually active in the month prior to the survey, with 30 percent reporting unprotected sex. Approximately 30 percent of PWID reported more than one sexual partner in the last year. High-risk sexual practices were common, with 20 percent reporting transactional sex, and only 40 percent reporting condom use during sex. Violence was also prevalent: 20 percent of those interviewed in Nairobi reported physical violence in the last year, and one percent reported sexual violence in the last year. Drug overdose was common among Nairobi and Coastal PWID—86 percent of PWID reported witnessing an overdose, 58 percent knew someone who had died of an overdose; and 37 percent of PWID had personally experienced a non-fatal overdose at least once—yet understanding of management and response to overdose was not common among PWID.

PWID-related HIV transmission and impact can best be controlled by implementing a core package of interventions which includes outreach to injecting drug users; sterile needle and syringe access and disposal; drug dependence treatment, particularly substitution treatment; voluntary counseling and testing; prevention of the sexual transmission of HIV; AIDS treatment and care, including anti-retroviral therapy (ART); hepatitis B vaccination; and vein care.

I.6 HIV Infections among Men Who Have Sex with Men

The MSM population commonly encompasses a range of sexual and gender identities, including homosexual, gay, bisexual, transgendered, and heterosexual. MSM may be married, gay, or sex workers. The Polling Booth Survey conducted in 2015 found that a significant proportion of MSM in Kenya have relationships with women as well as with men. Thus, the sexual networks of MSM also extend into the general population. The 2012 surveillance data showed that nearly 40 percent of MSM had been married, and 13 percent of MSM were currently married. MSM also have regular female sex partners. The Integrated Biological and Behavioural Surveillance 2010 found HIV prevalence of 18.2 percent among MSM in Nairobi and 11.1 percent in Kisumu. It also established that MSM in Kisumu were

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significantly younger than those in Nairobi. The HIV prevalence of MSM in Kisumu who were over 24 years old was 25 percent.  

Given the extremely high risk of HIV transmission for receptive anal sex, which is up to 18 times higher than unprotected, receptive vaginal sex, condom and appropriate lubricant use is vital for risk reduction among MSM.

A recent assessment of the health care needs of sexual minorities in Kenya illustrated that only 21.5 percent visit a health care provider when they have sexual and reproductive health (SRH) problems. The challenge is that few health care workers are trained and equipped to meet the specific HIV prevention and treatment needs of MSM, thereby deterring them from accessing crucial HIV/STI/SRH services.

Sex between men in prisons is widespread, and gang rape and sexual abuse occur frequently. The 2012 KP surveillance carried out by NASCOP also revealed an overall HIV prevalence of 8.2 percent among prison inmates.

1.7 Combination HIV Prevention Approach to Reduce HIV Risk and Vulnerability

As recommended in the KASF, NASCOP’s Key Populations Programme’s combination HIV prevention strategy addresses behavioural, biomedical, and structural factors that increase HIV risk and vulnerability among key populations. To reduce HIV risk, interventions promote HIV awareness, correct and consistent condom and lubricant use, and the use of new needles and syringes through outreach and distribution. Programmes also promote regular HIV and STI testing, counseling, and treatment because of the importance of early diagnosis and treatment. To reduce HIV vulnerability, interventions work to reduce violence, stigma, and discrimination against KPs, and to reduce alcohol abuse.

**HIV risk** is defined as the probability or likelihood that a person may become infected with HIV. Risky behaviours are those that may expose one to HIV. Examples include unprotected sex with a partner whose HIV status is unknown, multiple sexual partnerships involving unprotected sex, and injecting drugs with used needles and/or syringes.

**HIV vulnerability** is defined as reduced ability of individuals and communities to avoid HIV risk. Vulnerability results from a range of factors, most of which are structural, or outside the control of the individual. These factors may include (1) insufficient knowledge and skills required to protect oneself and others; (2) inadequate health service quality and coverage (e.g., inaccessibility of service due to distance, cost, or other factors); (3) societal factors such as poverty, violence, stigma, and gender disparity; and (4) alcohol abuse.


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OBJECTIVE AND PURPOSE OF THE SURVEY
The survey’s objective was to measure behavioural, biomedical, and structural indicators of HIV risk and vulnerability among key populations. The survey’s purpose was to enable NASCOP to assess its interventions’ outcomes—the interventions’ effects on key population behaviours that affect their HIV risk and on factors that affect key populations’ HIV vulnerability—by comparing indicators in 2017 with findings in previous years. The PBS surveys collect data that help NASCOP determine if, and by how much, programme activities are achieving their intended effects on the target populations’ risk and vulnerability.
3

METHODS
3.1 Survey Design and Sample Frame

Key design considerations for an outcomes assessment include determination of an appropriate sampling strategy (including sample size calculation and sample selection procedures), periodicity of data collection, and data collection and analysis methods. For representativeness, sampling should be based on probability sampling techniques that provide an equal chance to all programme participants meeting defined criteria to be included in the outcomes assessment study.

Accurate and reliable data on knowledge, behaviours and practices influencing HIV transmission and acquisition are critical for effective HIV prevention programme design and implementation but are often difficult to obtain due to the sensitivity surrounding sexual behaviour. Accurate reporting of sexual behaviour is heavily influenced by personal and contextual barriers, such as reservations about self-disclosure, poor recall, perceptions of confidentiality and social desirability bias, among others. For this reason, survey methods that offer a greater level of privacy for respondents and assure anonymity of their response are more likely to elicit comparatively accurate data. PBS seeks to overcome sexual behaviour reporting biases associated with face to face interviews and self-administered questionnaires. Kenya has successfully used this method to monitor programme outcomes since 2013.

Polling Booth Survey is a group interview method where individuals give their responses through a ballot box. The individual responses are anonymous and unlinked. The anonymity of the respondent is thought to increase the sense of confidentiality among respondents, thereby ensuring accurate reporting on sensitive and personal information. Participants are selected using a probability sampling procedure and organised into small homogenous groups of 10–12 people. Participants may be stratified by any factor of interest, such as key population subpopulations, type of sex work—e.g., venue-based sex workers and street-based sex workers—or by age. Being a group interview, questions need to be kept few, short and simple, and dichotomised for ease of response. The method is not individualised and is, therefore, not suitable for analysing correlates of sexual behaviour. Studies that have employed this method have confirmed its benefits over face-to-face interviews and self-administered questionnaires in eliciting sensitive sexual behaviour information.

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33 University of Manitoba and National STI and AIDS Control Project. 2014. Assessment of Female Sex Workers’ Operational Characteristics and Programme Exposure in Nairobi, Kenya.

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3.2 Measures

The following outcomes were measured in the third round of the assessment. These included the key population related outcomes stated in the KASF.

The survey measured the following indicators of key populations' HIV risk:

- Percentage of PWID who report using sterile injecting equipment the last time they injected drugs (disaggregated by sex and sites)
- Percentage of respondents reporting the use of a condom with their paying client at last sex (disaggregated by sex, sites, and key population – SW, PWID, MSM)
- Percentage of respondents reporting the use of a condom with regular, non-paying partner in last sex (disaggregated by sex, sites, and key population – SW, PWID, MSM)
- Percentage of respondents who report using a condom the last time they had anal sex (disaggregated by sex, sites, and key population – SW, PWID, MSM)

The survey measured the following indicators of key populations' HIV vulnerability:

- Percentage of respondents reporting condom non-use with sexual partner because of alcohol consumption in last month (disaggregated by sex, sites, and key population – SW, PWID, MSM)
- Percentage of respondents who could not get a condom when they needed one in the last month (disaggregated by sex, sites, and key population – SW, PWID, MSM)
- Percentage of respondents reporting condom non-use because a client offered more money in last month (disaggregated by sex, sites, and key population – SW, PWID, MSM)
- Percentage of respondents who tested for HIV in the last three months (disaggregated by sex, sites, and key population – SW, PWID, MSM)
- Percentage of respondents who enrolled in HIV care and treatment (disaggregated by sex, sites and key population – SW, PWID, MSM)
- Percentage of respondents currently on ART (disaggregated by age, sex, sites, and key population – SW, PWID, MSM)
- Percentage of respondents who tested/checked for STI in last six months (disaggregated by sex, sites, and key population – SW, PWID, MSM)
- Percentage of respondents treated for an STI in the last three months (disaggregated by sex, sites, and key population – SW, PWID, MSM)
- Percentage of respondents subjected to violence in the last six months (disaggregated by sex, sites, and key population – SW, PWID, MSM)
- Percentage of respondents forced to have sex in the last six months (disaggregated by sex, sites, and key population – SW, PWID, MSM)
- Percentage of respondents who received services in last three months from an HIV intervention (e.g., received condoms, received lubes, received information on condom use and safe sex, tested for HIV, tested for STIs) (disaggregated by sex, sites, and key population – SW, PWID, MSM)

In addition, the following outcomes were added in 2017:

- Percentage of respondents who have been met by a peer educator in last three months (disaggregated by sex, sites, and key population – SW, PWID, MSM)
- Percentage of PWID who have undergone drug rehabilitation or treatment (disaggregated by sex)
• Percentage of PWID who have received hepatitis C vaccine in the last three months (disaggregated by sex)

### 3.3 Study Sites

Keeping in mind the geographic heterogeneity of interventions, thirteen sites have been selected by NASCOP across Kenya to conduct this outcome assessment. The sites have been selected to represent different geographic locales that exist in Kenya. In each of these sites, depending on the estimates and availability of key populations, the survey was conducted with various subgroups of key populations. Twelve sites were the same sites in 2015, with the addition of Turkana, which is the 13th site. The sites have been kept the same so that results from consistent sites can be compared to measure progress.

The population groups have been revised to include young FSWs (YFSWs), young MSM (YMSM), and young PWID (YPWID) in selected sites to understand the behaviour outcomes in these groups. The inclusion of young key populations in the survey is in line with Kenya AIDS Strategic Framework 2014/15 – 2018/19, which prioritized young people. Young key populations were between the ages of 15 and 24, whereas the other key population groups surveyed were 18 and above. Table 1 explains the selected sites.

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<td>Turkana</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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There were 13 sites for assessments with FSWs, six sites for assessment with MSM/MSWs, and four sites for assessments with PWID. Of the 13 sites for FSWs, three sites had assessment with YFSWs. Of six sites for MSM, three sites had assessment with YMSM. Of four sites for PWID, two sites had assessment for YPWID.

### 3.4 Sampling

To be representative, a sampling strategy for outcomes assessment should be based on probability sampling techniques that provide an equal chance to all programme participants meeting defined criteria to be included in the study. The determination of an appropriate sample size for a single study domain is usually based on the following considerations:

- a) the number of measurement units in the population;
- b) the initial or baseline level of the indicator of interest;
- c) the magnitude of change between one time-point and another (e.g., a baseline and follow-up survey) or difference between groups that is expected to be detected;
- d) the degree of confidence by which it is expected to rule out chance as the explanation for the magnitude of change or difference observed between groups (level of statistical confidence); and
- e) the degree of accuracy with which it is expected to be certain that the magnitude of change or difference will be detected (statistical power).  

In addition to these factors, practical considerations, such as available time and financial resources, also have a bearing on an appropriate study sample size. An optimal sample size is obtained when the baseline indicator is set at 50 percent or less.

#### 3.4a Sample size determination

For the outcomes assessment, the following sampling parameters were set: it was assumed that the objective was to detect a 15 percent change in any of the indicators of interest between the second survey and this survey (e.g., 15 percent increase in condom use with casual clients from 92 percent), with 95 percent statistical confidence and 80 percent statistical power. The calculated sample for all, including young key populations, was 4466 FSW, 1649 MSW/MSM, and 1161 PWID to account for non-response. The sample was stratified by age for three sites (Mombasa, Nairobi, and Kisumu) and further by sex/gender in case of PWID.

For sampling frame, programme data as on January 2017 was used. The programme data was validated by the field officers of NASCOP/TSU and the programme monitoring reports.

Respondents were selected using a systematic random sampling method based on the list of FSWs, MSW/MSM, and male and female PWID that was prepared by peer educators of the implementing organizations at the spots. Table 2 displays the sample calculated/proposed for each site vs. coverage.

---

Sample size has been calculated using the following formula:

\[ n = \frac{2(\bar{p})(1-\bar{p})(Z_{\alpha/2})^2}{(p_1 - p_2)^2} \]

\[ nf = \frac{(n^*N)}{(n+N-1)} \]

\( n \) = sample size required

\( N \) = Population size

\( nf \) = sample size adjusting fpc

The study conducted analysis stratified by young vs. 18+ in three sites for YFSWs and YMSM/MSWs (Kisumu, Nairobi and Mombasa), and in two sites for YPWID (Nairobi and Mombasa). The programme data showed that about 10 percent of the key populations enrolled are young. Hence a random selection of key populations was unlikely to adequately represent the young ones to estimate any parameters. In order to adequately represent YFSWs, YMSM/MSWs, and YPWID, the sample size for these groups was boosted, and separate PBS sessions were conducted in selected sites to conduct analysis stratified by young and 18+ key populations. We boost the young key populations by 40 in each key population group in these sites. This is in addition to the proportionate sample allocation of the original sample for the young key populations.

### Table 2. Sample: proposed vs. covered

<table>
<thead>
<tr>
<th>Site</th>
<th>Sample size for 18+ respondents</th>
<th>Sample size for young respondents</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>FSWs Proposed</td>
<td>Covered</td>
</tr>
<tr>
<td>Nakuru</td>
<td>336</td>
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<tr>
<td>Kisumu</td>
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<tr>
<td>Nyeri</td>
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</tr>
<tr>
<td>Thika</td>
<td>318</td>
<td>274</td>
</tr>
<tr>
<td>Eldoret</td>
<td>302</td>
<td>274</td>
</tr>
<tr>
<td>Nairobi</td>
<td>623</td>
<td>274</td>
</tr>
<tr>
<td>Mombasa</td>
<td>523</td>
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</tr>
<tr>
<td>Homa Bay</td>
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</tr>
<tr>
<td>Meru</td>
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<td>274</td>
</tr>
<tr>
<td>Kitui</td>
<td>209</td>
<td>274</td>
</tr>
<tr>
<td>Bungoma</td>
<td>235</td>
<td>274</td>
</tr>
<tr>
<td>Kilifi</td>
<td>318</td>
<td>274</td>
</tr>
<tr>
<td>Turkana</td>
<td>223</td>
<td>274</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4156</strong></td>
<td><strong>4113</strong></td>
</tr>
</tbody>
</table>
The survey had 4,393 FSW respondents (98 percent of proposed sample), 1,645 MSM/MSW respondents (100 percent of the proposed sample), and 1,131 PWID respondents (97 percent of the proposed sample).

### 3.4b Selection of individual respondents

The implementing agencies sent the finalized list of hotspots from the select 13 sites to NASCOP. These hotspot lists were separate for FSWs, MSM, and PWID. A random sample of hotspots was selected for the PBS. Peer educators / outreach workers were trained to recruit a random sample of individual key populations from the sampled hotspots. Separate PBS sessions were conducted for different subpopulations of key populations. In three sites, separate sessions were conducted for young key populations.

There is evidence to show that YFSWs, YMSM, and YPWID frequent the same hotspots as adult key populations. However, as we had assumed that we would not be able to recruit enough young key populations for a PBS session from one hotspot, we allocated the required PBS sessions to an equal number of randomly sampled hotspots distributed across different geographies and typologies. YFSWs, YMSM, and YPWID were sampled from these

---

**Table 2. continued...**

<table>
<thead>
<tr>
<th>Site</th>
<th>Total</th>
<th>Proposed 18+ respondents</th>
<th>Covered 18+ respondents</th>
<th>Proposed young respondents</th>
<th>Covered young respondents</th>
</tr>
</thead>
<tbody>
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<td>Nakuru</td>
<td>610</td>
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<tr>
<td>Kisumu</td>
<td>748</td>
<td>748</td>
<td>151</td>
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<tr>
<td>Nyeri</td>
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<td>266</td>
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<tr>
<td>Thika</td>
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<td>587</td>
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<tr>
<td>Eldoret</td>
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<td>Homa Bay</td>
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<tr>
<td>Meru</td>
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<tr>
<td>Kitui</td>
<td>209</td>
<td>210</td>
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<tr>
<td>Bungoma</td>
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<td><strong>6512</strong></td>
<td><strong>669</strong></td>
<td><strong>657</strong></td>
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</table>

The survey had 4,393 FSW respondents (98 percent of proposed sample), 1,645 MSM/MSW respondents (100 percent of the proposed sample), and 1,131 PWID respondents (97 percent of the proposed sample).

37 MSWs were not separately surveyed. MSWs were included in the MSM PBS sessions, and YMSWs were included in the YMSM sessions.
clusters, thus we planned one PBS session for each key population type from each cluster.

A schedule was developed for inviting individual key populations from the selected spots to the survey venues. Survey venues were agreed in consultation with peer educators. Up to 12 individuals were organized by spot typology into homogenous groups, making up a total of approximately 589 PBS group sessions (360 for FSWs, 137 for MSM, and 92 for PWID).

Peer educators were trained on the sampling procedure by the researchers, site coordinators, and research assistants in their sites. Peer educators developed a list of individuals frequenting the sampled hotspots using their outreach tools, and selected those to participate in the PBS using systematic random sampling. The recruitment of PBS participants was arranged to coincide with the peak days and hours when a large number of key populations were at the selected spots. Those selected were provided with information on the day, time, and venue for their PBS session. Throughout this mobilization process, it was emphasised to the participants that participation in the PBS would be by free consent, and that non-participation would not jeopardise their access to services provided by interventions. Further, peer educators and supervisors were instructed to follow a random selection procedure rather than focus only on those individuals who have enrolled in interventions. This ensured that those individuals who are not enrolled in programmes but frequented the spots had an equal chance of being selected for the assessment, thus reducing bias towards those who attend clinics or are enrolled in interventions.

All key populations living, working, cruising, or using drugs in the hotspots were eligible to participate in the PBS.

3.5 Steps in Conducting a PBS

Participants were invited to the PBS in groups of up to 12 individuals, organized by subgroups and typology within the subgroups, on specific days and time. The PBS sessions proceeded as follows:

1. Participants invited to the PBS were given an individual polling booth in the study venue. The polling booths were separated by at least one meter from each other to provide privacy to each individual respondent and to assure them of the confidentiality of their responses. Such an arrangement increases the potential for genuine responses to the questions from the respondents.

2. Each participant was given three boxes, coloured red, green, and white.

3. Each participant received a pack of cards. The cards were numbered corresponding to the number of questions in the questionnaire.

4. The cards were stacked in sequential order. The moderator confirmed that each participant had the right number of cards arranged in the correct order before starting to administer the questions.

5. The moderator asked questions, one at a time, and ensured that they were clearly understood by the respondents.

6. In terms of responses, the moderator gave the following instructions:
• If the response to the question was YES, the respondent was to put the card with the number corresponding to the question into the green box.
• If the response to the question was NO, the respondent was to put the card with the number corresponding to the question into the red box.
• If the question did not apply to the respondent, the respondent was to put the card with the number corresponding to the question into the white box.
• If the person did not want to answer the question, the corresponding card was kept outside of the provided boxes.

7. The moderator explained the PBS with an example and a practice session. This example was to assure participants that their responses would remain anonymous and unlinked.

8. The moderator read the questions one by one. While doing so, the moderator
    • made the exercise lively;
    • read each question clearly, slowly, and loudly, so that each participant heard the question clearly;
    • read out the questions in a clearly understood language, including Kiswahili translation, if necessary;
    • repeated the question, if necessary;
    • used situations/stories while asking the questions;
    • used local terms; and
    • gave sufficient pause and took care not to hurry through the questions.

9. At the end of administering the questions, the moderator collected the cards separately for each of the boxes, counted the number of cards in each box for each question, and recorded the tallies in a prescribed reporting form.

10. The moderator shared the polling booth results with the respondents in a group discussion, verifying some responses. A repeat polling was done where necessary.

11. The moderator and the assistant documented the group discussion points.

12. All data generated through the entire PBS process was then handed to the supervisor.

3.6 Duration of the Survey

The survey took place between May and September 2017. Training and data collection took place between May and June 2017. All sites collected data simultaneously. Data cleaning, analysis, and report writing took three months.

3.7 Ethical Considerations

The PBS is not a research activity but rather a programme monitoring and evaluation tool. Data collected through the process was anonymous and unlinked. No risks from participation in the PBS were anticipated. Individuals participated in the study voluntarily, without coercion or undue influence. No incentives were provided to participants for taking part. Participants were reimbursed only the return costs (KSh 500) of travelling for the PBS.

3.8 Data Collection

There were three different sets of questionnaires targeting the three key population groups: PWID, FSWs, and MSM/MSWs. The questionnaires elicited information on
combination prevention approaches—namely, biomedical, behavioural, and structural components.

The PBS questionnaire gathered basic demographic data from the participants, including age, sex, hotspot typology, and town. In addition, the tool included questions regarding condom use behaviour, HIV testing, HIV and STI knowledge, hepatitis C screening, sexual orientation, drug and substance abuse, HIV care and treatment, and other health related issues.

The final questionnaires were translated from English to Kiswahili and translated back to English to ensure accuracy and consistency. The questionnaires were further refined after the experience of the previous surveys.

3.9 Informed Consent

All key population members living, working, cruising, or using drugs in the hotspots were eligible to participate in the PBS, provided they gave verbal or written informed consent.

3.10 Survey Implementation

3.10a Selection and training of the survey team

The teams that conducted the PBS consisted of researchers, a NASCOP site coordinator, a key population community researcher, data entry operators, and national site supervisors. The researchers were not staff members of the implementing organizations. A three-day training on the PBS methodology with classroom and practical sessions was conducted for each team. All PBS questions were translated into Kiswahili for ease of administration and thereafter pilot tested.

3.10b Mobilization of respondents

Mobilization of respondents was done by peer educators from the targeted hot spots, where participants were selected using a probability sampling procedure and organized into small homogenous groups of 8 to 12 people.

3.10c Fieldwork supervision

Supervision was conducted by NASCOP staff who gave technical guidance and support to ensure efficiency, quality, and improvement of the survey. The field teams worked closely with a centralized coordination team based at NASCOP. After collection, the data was relayed to the central team at NASCOP for entry and analysis.

Materials required for the PBS
- Three colored boxes—green, red, and white
- Card sets
- Sample list
- Questionnaires
- Polling booth cartons
- Reporting forms
- Pens

3.10d Data processing and analysis

Data was entered using Microsoft Access and Excel and then exported to SPSS for analysis. The PBS-generated descriptive data was analyzed to show numbers, proportions, and comparative statistics pertaining to a particular indicator. The data was weighted using key population size estimates. The data generated from the multiple PBS sessions was aggregated to provide site-wide estimates for specific indicators, with town and site typology breakdowns.

The data collected from the PBS provided follow-up data against which comparisons were done with the 2014 baseline survey and 2015 follow-up survey to determine changes likely to have resulted from programme activities.
METHODS
4

FINDINGS OF THE 2017 POLLING BOOTHS SURVEY
**Age summary**

**FSWs:** Overall, the median age for FSWs who participated is 28 years (Table 3). Further stratification shows that the median age is 22 for those who are 15 to 24, and that it is 28 for those who are 18 and above.

**MSM:** Overall, the median age for MSM who participated is 23 years. Further stratification shows that the median age is 22 for those who are 15 to 24, and that it is 23 for those who are 18 and above.

**PWID:** Overall, the median age for PWID who participated is 30 years. Further stratification shows that the median age is 23 for those who are 15 to 24, and that it is 31 for those who are 18 and above.

<table>
<thead>
<tr>
<th>Table 3. Age profiles of the respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>All ages</td>
</tr>
<tr>
<td>Ages 15 to 24</td>
</tr>
<tr>
<td>18 years and above (18+)</td>
</tr>
</tbody>
</table>

**Risk profiles**

PBS results reveal that the average number of sex acts per week for all FSWs (YFSWs and 18+ FSWs) is 19, making a total of 76 sex acts per month, while that of all MSM is seven per week, making a total of 28 sex acts per month (Figure 1).
On average, PWID inject 19 times per week, which comes to 76 injections per month (Figure 2).

**Figure 2. Average number of needles and syringes used per week by PWID by study site**

![Figure 2. Average number of needles and syringes used per week by PWID by study site](image)

### 4.1 Female Sex Workers – Ages 18 and Above

**Age distribution of FSW respondents by study site**

Overall, 56 percent of FSWs who participated were 25–34 years old, and 26 percent were 18–24 years old (Figure 3).

**Figure 3. Age distribution of FSW respondents by study (%)**

![Figure 3. Age distribution of FSW respondents by study (%)](image)

### BEHAVIOURAL OUTCOMES

#### 4.1a Condom use behaviour with a paying client

The study found that, overall, 92 percent of the FSWs used a condom at last sex with a paying client (Figure 4), the same proportion as in 2015. Increases in condom use with a paying client at last sex were significant across all sites (p<0.001), across consistent sites (p<0.001), and in Eldoret (p<0.001), Mombasa (p<0.001), Nairobi (p<0.05), Nakuru (p<0.01), Thika (p<0.01), Homa Bay (p<0.001), Bungoma (p<0.01), and Meru (p<0.05). Turkana reported the lowest condom use with a client at last sex, at 78 percent.
Figure 4. FSWs who reported condom use at last sex with a paying client by study and year (%)

* p<0.05; ** p<0.01; *** p<0.001

4.1b FSWs with regular, non-paying partners

Just over half (57 percent) of the FSW respondents reported having a regular, non-paying partner at the time of the study (Figure 5). Decreases in the proportion of FSWs having a regular, non-paying partner were significant for all sites (p<0.01), for consistent sites (p<0.01), and in Kisumu (p<0.05), Mombasa (p<0.001), Thika (p<0.01), and Meru (p<0.01). Increases were significant in Eldoret (p<0.01) and Nakuru (p<0.05). Eldoret had the highest proportion of FSWs who reported having a regular, non-paying partner in 2015 and 2017.
### 4.1c Condom use behaviour with regular, non-paying partners

Overall, 58 percent of FSWs used a condom with their regular, non-paying partner at last sex (Figure 6). Declines in condom use at last sex with regular, non-paying partners were significant in four consistent sites—Eldoret (p<0.001), Kisumu (p<0.001), Thika (p<0.01), and Bungoma (p<0.001). The decline was most pronounced in Eldoret. Increases were significant in Nairobi (p<0.01), Meru (p<0.01), and Homa Bay (p<0.001). Among all sites, Eldoret had the lowest condom use at last sex with a regular, non-paying partner, at 40 percent.

*Figure 6. FSWs who used a condom at last sex with regular, non-paying partner by study site and year (%)*

*\*p<0.05; **p<0.01; ***p<0.001*

### 4.1d Condom use behaviour: Inconsistency

Just over one-quarter (27 percent) of the FSWs had an occasion of unprotected sex with a paying client in the preceding month (Figure 7). The proportion of respondents reporting an occasion of unprotected sex with a paying client in the last month decreased for all sites (p<0.001), for consistent sites (p<0.001), and in Kisumu (p<0.001), Mombasa (p<0.01), Nairobi (p<0.001), Nyeri (p<0.05), Thika (p<0.001), and Bungoma (p<0.01). Kitui showed a worrying significant increase in unprotected sex with a paying client (p<0.05). Turkana had the highest proportion of FSWs who reported unprotected sex with a client in the past month, at 44 percent.

*Figure 7. FSWs who had at least one occasion of unprotected sex with a paying client in the past month by study site and year (%)*

*\*p<0.05; **p<0.01; ***p<0.001*
Nearly one-quarter (23 percent) of the FSWs had an incident of unprotected sex in the last month because a condom was not available at the time and place, an increase from 19 percent in 2015 (Figure 8). Significant declines of the proportion of FSWs reporting condom unavailability were noted in Eldoret (p<0.001), Mombasa (p<0.001), Bungoma (p<0.001) and Thika (p<0.01), but significant increases occurred in Kitui (p<0.01) and Nakuru (p<0.001). Among all sites, condom unavailability when needed was most prevalent among FSWs in Turkana, at 40 percent.

Over one-quarter (28 percent) of the FSWs had unprotected sex in the past month because a partner refused to use a condom (Figure 9). Decreasing trends were identical and significant for all sites and consistent sites (p<0.01). Eldoret (p<0.001), Mombasa (p<0.05), Nairobi (p<0.05), Bungoma (p<0.001), and Thika (p<0.001) recorded significant declines in unprotected sex due to partner refusal. More messaging on condom negotiation needs to be done in locations where significant increases occurred: Homa Bay (p<0.05), Nakuru (p<0.001), and Kitui (p<0.01). Meru recorded the highest proportion of FSWs having partners who refused to use a condom during sexual intercourse in 2015 (45 percent) and in 2017 (43 percent).

Figure 8. FSWs who wanted to use a condom in the past month but could not because of condom unavailability by study site and year (%)

Figure 9. FSWs who wanted to use a condom in the past month but could not because partner refused by study site and year (%)
Twenty-eight percent of FSWs had unprotected sex in the past month because they and/or their partner consumed alcohol (Figure 10). Significant declines were noted in Eldoret (p<0.001), Thika (p<0.05), and Bungoma (p<0.001), while Homa Bay (p<0.01), Kitui (p<0.001), and Meru (p<0.01) recorded significant increases in FSWs engaging in unprotected sex because of alcohol. Overall, Meru recorded the highest incidence of unprotected sex because of alcohol, at 45 percent.

The findings revealed that 23 percent of FSWs had an incident of unprotected sex in the previous month because a client offered more money, a significant increase (p<0.05) (Figure 11). Increases were observed in Homa Bay (p<0.01), Mombasa (p<0.01), Nakuru (p<0.05), and Kitui (p<0.05). Among consistent sites, significant declines were noted in Nyeri (p<0.01), Thika (p<0.001), and Bungoma (p<0.05).

4.1e Anal sex

Overall, 12 percent of FSWs reported having engaged in anal sex in the month preceding the survey, a significant increase at aggregate (p<0.001) and consistent sites (p<0.001).
majorly driven by increases at Eldoret (p<0.05), Mombasa (p<0.01), Nairobi (p<0.001), and Kitui (p<0.001) (Figure 12). Bungoma (p<0.001) recorded a significant decline in the share of FSWs reporting anal sex. FSWs in Kitui reported the highest proportion, at 20 percent, while Nyeri reported the lowest, at five percent.

**Figure 12. FSWs who had anal sex in the past month by study site and year (%)**

* p<0.05; ** p<0.01; *** p<0.001

4.1f Anal sex and condom use

Around half (52 percent) of the FSW respondents reported using a condom at last anal sex (Figure 13). Significant declines in condom use at last anal sex were observed in Kisumu (p<0.01), Thika (p<0.01), Nairobi (p<0.05), and consistent sites (p<0.01), whereas significant increases were observed in Mombasa (p<0.05) and Kitui (p<0.05). The incidence of condom use at last anal sex was lowest at Turkana (19 percent) and highest at Bungoma (78 percent).

**Figure 13. FSWs who used a condom during last anal sex by study site and year (%)**

* p<0.05; ** p<0.01; *** p<0.001

4.1g Condom mishap

Overall, 24 percent of FSW respondents reported an experience of condom burst or slippage at last sex, a significant decline over the years (Figure 14). Eldoret (p<0.001), Kisumu (p<0.01), Mombasa (p<0.001), and Nairobi (p<0.05) recorded significant declines, while Homa Bay (p<0.01), Kitui (p<0.01), Thika (p<0.05), and Nakuru (p<0.001) recorded significant increases in condom burst or slippage. Among all sites, Nakuru had the highest proportion, at 38 percent, and Eldoret had the lowest, at eight percent.

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FINDINGS OF THE 2017 PBS
4.1h Injecting drug use

The survey’s findings revealed that eight percent of FSWs had ever injected heroin in their lifetime, a significant increase from 2015 (p<0.01) (Figure 15). The proportion of FSWs who reporting having injected in their lifetime increased in Thika (p<0.05), Mombasa (p<0.05), and Kitui (p<0.001), and decreased in Nyeri (p<0.001) and Nakuru (p<0.01). Of the FSWs who had injected in their lifetime, almost half (46 percent) reported that they had injected heroin or other narcotic drugs in the three months preceding the survey (Figure 16). The proportions were highest in Kilifi (100 percent), Meru (70 percent), and Homa Bay (59 percent).

* p<0.05; ** p<0.01; *** p<0.001
STRUCTURAL OUTCOMES

4.1i Peer educator contact

The proportion of FSWs met by a peer educator in the last three months increased significantly (p<0.001), from 79 percent to 88 percent (Figure 17). Among the consistent sites, significant declines were noted in Kisumu (p<0.01) and Thika (p<0.05). Overall, Eldoret recorded the highest proportion met by a peer educator, at 97 percent, while Kitui recorded the lowest, at 74 percent.

Figure 17. FSWs met by a peer educator in the last three months by study site and year (%)

4.1j Experience of violence

Survey findings revealed significant increases in the proportion of FSWs who experienced violence in the last six months in Kitui (p<0.01) and Nakuru (p<0.001) (Figure 18). Significant decreases were observed in Kisumu (p<0.01), Nyeri (p<0.01), Thika (p<0.01), and Bungoma (p<0.01). Among all sites, Meru recorded the highest proportion of FSWs who had experienced violence in the last six months, at 42 percent.

Figure 18. FSWs forced to have intercourse in the past six months by study site and year (%)

* p<0.05; ** p<0.01; *** p<0.001

FINDINGS OF THE 2017 PBS
Forty-eight percent of FSWs reported having been arrested or beaten by police or askaris in the past six months (Figure 19). Five out of the 11 consistent sites—Eldoret (p<0.001), Mombasa (p<0.001), Nakuru (p<0.001), Thika (p<0.01), and Kitu (p<0.05)—recorded significant increases in the proportion of FSWs who experienced physical violence across the years. More than half of the FSW respondents in Nairobi, Eldoret, Nakuru, Thika, and Meru reported having experienced physical violence from law enforcers in the past six months.

**Figure 19. FSWs arrested or beaten by police or askaris in the past six months by study site and year (%)**

* *p<0.05; **p<0.01; ***p<0.001

### 4.1k Response to violence

Overall, half of the FSWs who experienced violence were supported by the interventions (Figure 20). In six out of the 13 sites, more than half of the FSWs were supported. Bungoma recorded the lowest support, at 17 percent.

**Figure 20. FSWs who were supported by the intervention/clinic/DIC after they experienced violence in the past six months by study site (%)**
BIOMEDICAL OUTCOMES

4.1 HIV testing

Overall, 96 percent of FSWs reported that they had ever been tested for HIV, with significant increases in Eldoret (p<0.001), Thika (p<0.001), Bungoma (p<0.01), and Homa Bay (p<0.01) (Figure 21). Decreases were observed among FSWs in Nyeri (p<0.05) and Meru (p<0.05). Some 85 percent of FSWs underwent testing for HIV in the last three months, with significant increases in the proportion tested in Eldoret (p<0.001), Nakuru (p<0.001), Nyeri (p<0.01), Thika (p<0.001), Mombasa (p<0.001), Bungoma (p<0.01), and Homa Bay (p<0.01) (Figure 22). FSWs in Meru recorded the lowest proportion tested in the three months preceding the survey (77 percent), while Nakuru and Homa Bay recorded the highest proportions (92 percent).

*p<0.05; **p<0.01; ***p<0.001

Figure 21. FSWs ever tested for HIV by study site and year (%)

Figure 22. FSWs tested for HIV in the past three months by study site and year (%)

*p<0.05; **p<0.01; ***p<0.001
4.1m HIV infection, care, and treatment

Overall, 26 percent of FSWs reported that they are living with HIV (Figure 23). Of those, 79 percent had ever been enrolled in an HIV care and treatment programme, and 73 percent were taking ART at the time of the study. HIV burden was highest in Homa Bay (49 percent). High attrition rates from HIV care and treatment were observed in Mombasa, where over half of FSWs stopped taking drugs (data not shown). Of the FSWs taking ART, 29 percent have not attended an ART clinic appointment for 30 days or more (Figure 24). Bungoma, with the highest proportion of FSWs currently taking drugs, at 97 percent, has the lowest proportion overdue for an ART appointment, at three percent.

Figure 23. FSWs living with HIV, FSWs enrolled in an HIV care and treatment programme, and FSWs taking ART by study site (%)

4.1n Pre-exposure prophylaxis

The findings revealed that 13 percent of FSWs were taking PrEP at the time of the study (Figure 25). Homa Bay recorded the highest proportion, at 29 percent, while Turkana recorded the lowest, at one percent.

Figure 24. FSWs who missed ART/clinic appointment by site (%)

4.1n Pre-exposure prophylaxis

The findings revealed that 13 percent of FSWs were taking PrEP at the time of the study (Figure 25). Homa Bay recorded the highest proportion, at 29 percent, while Turkana recorded the lowest, at one percent.

Figure 25. FSWs taking PrEP by site (%)

Third National Behavioural Assessment of Key Populations in Kenya
### 4.1.4 Sexually transmitted infections

Eighteen percent of FSWs were experiencing an STI symptom at the time of the survey, a significant reduction from 23 percent in 2014 (p<0.001) (Figure 26). Decreases in the proportion of FSWs reporting STI symptoms were significant in Eldoret (p<0.01), Mombasa (p<0.001), Kisumu (p<0.001), Thika (p<0.01), and Meru (p<0.05). A significant increase was observed in Homa Bay (p<0.01), which had the highest incidence of FSWs reporting STI symptoms (35 percent). Nakuru recorded the lowest proportion of FSWs with an STI symptom, at eight percent.

**Figure 26. FSWs currently experiencing STI symptoms by study site and by year (%)**

*Overall, 34 percent of FSW respondents reported being diagnosed with an STI in the three months preceding the survey, with Mombasa recording the highest proportion (57 percent) and Kilifi recording the lowest (17 percent) (Figure 27). Of those diagnosed with an STI, 46 percent received treatment in the last three months, with Turkana recording the highest proportion, at 63 percent, and Kitui recording the lowest, at 32 percent.**

**Figure 27. FSWs diagnosed with an STI in the last three months and treated in the last three months by study site (%)**
**4.1 Visit to a DIC/clinic/intervention**

A significant increase (p<0.001) was observed in the proportion of FSWs who reported visiting or receiving services from a DIC/clinic/project site in the three months preceding the survey (Figure 28). This trend was observed for consistent sites (p<0.001), with significant increases in Eldoret (p<0.001), Mombasa (p<0.001), Nairobi (p<0.001), Nakuru (p<0.001), Nyeri (p<0.001), Thika (p<0.001), Homa Bay (p<0.001), Kitui (p<0.001), and Meru (p<0.001). Two sites, Kisumu (p<0.01) and Bungoma (p<0.01), recorded significant decreases. Among all sites, Kitui recorded the lowest proportion of FSWs visiting the DIC/clinic clinic, at 52 percent.

**Figure 28. FSWs who visited or received services from the intervention, a DIC, or a project clinic in the last three months by study site and by year (%)**

![Bar chart showing visitation trends](chart.png)

*p<0.05; **p<0.01; ***p<0.001

**4.2 Young Female Sex Workers**

**Age distribution of YFSW respondents by study site**

The findings revealed that 95 percent of YFSWs were 18–24 years old, whereas only five percent were 15–17 years old (Figure 29).

**Figure 29. Age distribution of YFSW respondents by study site (%)**

![Age distribution chart](chart.png)
BEHAVIOURAL OUTCOMES

4.2a Condom use behaviour with a paying client

Overall, 90 percent of the YFSWs reported using a condom at last sex with a paying client (Figure 30).

Significant variation was not observed across the sites. YFSWs in Kisumu reported the lowest condom use with a client at last sex, at 89 percent.

4.2b FSWs with regular, non-paying partners

Just over half (59 percent) of the YFSW respondents reported having a regular, non-paying partner at the time of the study (Figure 31). Nairobi had the highest proportion of YFSWs who reported having a regular, non-paying partner, at 65 percent.
4.2c Condom use behaviour with regular, non-paying partners

Overall, 44 percent of YFSWs used a condom with their regular, non-paying partner at last sex (Figure 32). Nairobi and Mombasa reported the highest proportions of YFSWs who used a condom at last sex with a regular, non-paying partner, at 45 percent.

![Figure 32. YFSWs who used a condom at last sex with a regular, non-paying partner by study site (%)](chart)

4.2d Condom use behaviour: Inconsistency

A quarter of the YFSWs had an occasion of unprotected sex with a paying client in the preceding month (Figure 33). Unprotected sex was most prevalent among YFSWs in Mombasa, at 31 percent, and least prevalent in Kisumu, at 17 percent.

![Figure 33. YFSWs who had at least one occasion of unprotected sex with a paying client in the past month by study site (%)](chart)

Just over a quarter (26 percent) of the YFSWs had an incident of unprotected sex in the last month because a condom was not available at the time and place (Figure 34). This was most reported in Mombasa, at 29 percent, and least reported in Nairobi, at 23 percent.
A third of the YFSWs had unprotected sex in the past one month because a partner refused to use a condom (Figure 35). Nairobi recorded the highest proportion, at 38 percent, while Kisumu recorded the lowest proportion, at 25 percent.

Thirty-eight percent of YFSWs reported that they had unprotected sex because of alcohol in the month preceding the survey. Almost half of the YFSW respondents in Nairobi (47 percent) reported having engaged in unprotected sex due to alcohol consumption (Figure 36). Kisumu recorded the lowest incidence of unprotected sex due to alcohol, at 25 percent.
Twenty-seven percent of YFSWs reported having unprotected sex in the previous month because the client paid more for money (Figure 37). This was highest in Mombasa, at 35 percent, and lowest in Kisumu, at 17 percent.

**Figure 37. YFSWs who had unprotected sex in the past month because their client offered more money by study site (%)**

![](image)

**4.2e Anal sex**

Overall, 14 percent of YFSWs reported having anal sex in the past month (Figure 38). This was highest in Mombasa, at 20 percent, and lowest in Nairobi, at 12 percent.

**Figure 38. YFSWs who had anal sex in the past month by study site (%)**

![](image)

**4.2f Anal sex and condom use**

Some 58 percent of YFSWs reported that a condom was used when they last had anal sex (Figure 39). Condom use at last anal sex was most prevalent in Mombasa, at 67 percent, and least prevalent in Nairobi, at 43 percent.

**Figure 39. YFSWs who used a condom during last anal sex by study site (%)**

![](image)
4.2g Condom mishap

Eighteen percent of YFSWs reported condoms bursting or slipping at last sex (Figure 40). This was highest in Nairobi, at 23 percent, and lowest in Kisumu, at 12 percent.

Figure 40. YFSWs who experienced condom burst or slippage during last sex by study site (%)

<table>
<thead>
<tr>
<th>Sites</th>
<th>Kisumu</th>
<th>Mombasa</th>
<th>Nairobi</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>12</td>
<td>16</td>
<td>23</td>
<td>18</td>
</tr>
</tbody>
</table>

4.2h Injecting drug use among YFWs

Seven percent of YFSWs reported ever injecting heroin or other narcotic drugs (Figure 41). Of YFSWs in Mombasa who had ever injected, all had done so in the last three months (Figure 42).

Figure 41. YFSWs who have injected heroin or other narcotic drugs by study site (%)

<table>
<thead>
<tr>
<th>Sites</th>
<th>Kisumu</th>
<th>Mombasa</th>
<th>Nairobi</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>4</td>
<td>8</td>
<td>9</td>
<td>7</td>
</tr>
</tbody>
</table>

Figure 42. YFSWs who injected heroin or other narcotic drugs in the last three months by study site (%)

<table>
<thead>
<tr>
<th>Sites</th>
<th>Kisumu</th>
<th>Mombasa</th>
<th>Nairobi</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>67</td>
<td>100</td>
<td>50</td>
<td>65</td>
</tr>
</tbody>
</table>
4.2i Peer educator contact

The proportion of YFSWs met by a peer educator in the last three months stood at 87 percent (Figure 43). This was highest in Mombasa, at 95 percent, and lowest in Kisumu, at 75 percent.

![Figure 43. YFSWs met by a peer educator in the last three months by study site (%)](chart)

4.2j Experience of violence

The proportion of YFSWs forced to have intercourse in the past six months stood at 24 percent, with incidences ranging from 14 percent in Kisumu to 33 percent in Nairobi (Figure 44).

![Figure 44. YFSWs forced to have intercourse in the past six months by study site (%)](chart)

Forty-seven percent of YFSWs reported having been arrested or beaten by police or askaris in the past six months (Figure 45). This was highest in Nairobi, at 64 percent, and lowest in Kisumu, at 25 percent.

![Figure 45. YFSWs arrested or beaten by police or askaris in the past six months by study site (%)](chart)
4.2k Response to violence

Of YFSW respondents who experienced violence in the preceding six months, 40 percent reported that they received support from the intervention/DIC/clinic (Figure 46). Mombasa reported the highest, at 50 percent, and Nairobi reported the lowest, at 32 percent.

Figure 46. YFSWs who were supported by the intervention/clinic/DIC after they experienced violence in the last six months by study site (%)

<table>
<thead>
<tr>
<th>Site</th>
<th>Support (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kisumu</td>
<td>48</td>
</tr>
<tr>
<td>Mombasa</td>
<td>50</td>
</tr>
<tr>
<td>Nairobi</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
</tr>
</tbody>
</table>

BIOMEDICAL OUTCOMES

4.2l HIV testing

The findings revealed that 97 percent of the YFSW respondents had ever been tested for HIV (Figure 47). During the three months preceding the survey, 84 percent of the YFSWs had been tested for HIV (Figure 48). This was highest in Mombasa, at 89 percent, and lowest in Kisumu, at 76 percent.

Figure 47. YFSWs ever tested for HIV by study site (%)

<table>
<thead>
<tr>
<th>Site</th>
<th>Tested (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kisumu</td>
<td>96</td>
</tr>
<tr>
<td>Mombasa</td>
<td>96</td>
</tr>
<tr>
<td>Nairobi</td>
<td>98</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
</tr>
</tbody>
</table>
4.2m HIV infection, care, and treatment

Overall, 18 percent of YFSWs reported that they were living with HIV (Figure 49). Of those, 65 percent had ever been enrolled in an HIV care and treatment programme, and 63 percent of YFSWs living with HIV were taking ART at the time of the study. Self-reported HIV burden was highest in Kisumu, at 27 percent, and lowest in Mombasa, at 12 percent. Of the YFSWs taking ART, 37 percent were overdue for an appointment at the ART clinic, with 100 percent of YFSWs in Mombasa overdue, and 21 percent in Kisumu overdue (Figure 50).
4.2n Pre-exposure prophylaxis

The findings revealed that 29 percent of YFSWs were currently taking PrEP at the time of the study (Figure 51). Mombasa recorded the highest proportion, at 46 percent, while Kisumu recorded the lowest, at 18 percent.

Figure 51. YFSWs taking PrEP by study site (%)

4.2o Sexually transmitted infections

Sixteen percent of YFSWs were experiencing an STI symptom at the time of the survey (Figure 52). Kisumu recorded the highest proportion of YFSWs experiencing symptoms, at 17 percent. Little variation was observed across sites.

Figure 52. YFSWs currently experiencing STI symptoms by study site (%)

Overall, 32 percent of YFSW respondents reported being diagnosed with an STI in the three months preceding the survey (Figure 53). In Kisumu, where almost half of the YFSW respondents (47 percent) had been diagnosed with an STI, 26 percent of those diagnosed received treatment in the last three months. Nairobi recorded the highest proportion treated, at 52 percent, and Kisumu recorded the lowest proportion treated, at 26 percent.

Figure 53. YFSWs diagnosed with an STI in the last three months and YFSWs treated for an STI in the last three months by study site (%)
4.2p Visit to a DIC/clinic/intervention

Findings revealed that 69 percent of YFSWs visited or received services from the intervention, a DIC, or project clinic in the three months preceding the survey (Figure 54). This was highest in Mombasa, at 73 percent, and lowest in Nairobi, at 67 percent.

**Figure 54. YFSWs who visited or received services from the intervention, a DIC, or a project clinic in the last three months by study site (%)**

![Bar chart showing visit rates in Kisumu, Mombasa, Nairobi, and total sites.](chart)

4.3 Men Who Have Sex with Men – Ages 18 and Above

**Age distribution of MSM respondents by study site**

Overall, 62 percent of MSM respondents were 18–24 years old, and 35 percent were 25–34 years old (Figure 55).

**Figure 55. Age distribution of MSM respondents by study site (%)**

![Age distribution bar chart](chart)
BEHAVIOURAL OUTCOMES

4.3a Condom use

Participants were asked if they used a condom the last time they had anal sex. Significant change in the proportion of MSM who used a condom during last anal sex occurred only in Nairobi, where such condom use increased from 71 percent in 2014 to 81 percent in 2017 (p<0.01) (Figure 56).

* p<0.05; ** p<0.01; *** p<0.001

4.3b Lubricant use

Participants were asked if they used lubricant during the last time they had anal sex. Significant change in the proportion of MSM who reported lubricant use at last anal sex occurred only in Thika, where such use increased from 79 percent in 2014 to 88 percent in 2017 (p<0.01) (Figure 57).

* p<0.05; ** p<0.01; *** p<0.001
4.3c Sex work

Participants were asked if they had ever exchanged anal sex for money or goods with men. Overall, 62 percent in 2017 reported that they had exchanged sex for money or goods compared to 69 percent in 2015 (Figure 58). Significant increases in the proportion of men who had exchanged sex with men for goods or money were observed in Nakuru (p<0.001) and Mombasa (p<0.01). Kisumu (p<0.001) and Nairobi (p<0.05) reported significant decreases. Thika had the lowest proportion of MSM who had ever exchanged anal sex for money or goods, at 50 percent.

Figure 58. MSM who have ever exchanged anal sex for money or goods with men by study site and year (%)

![Chart showing the percentage of MSM who have exchanged anal sex for money or goods by study site and year]

* p<0.05; ** p<0.01; *** p<0.001

The proportion of MSM who had exchanged sex for money or goods with a man in the last month decreased significantly (p<0.05), from 60 percent in 2015 to 55 percent in 2017 (Figure 59). The proportion of MSM who exchanged sex for money or goods with a man was highest in Mombasa in 2015 and 2017, at 65 and 66 percent respectively. Consistent sites reported significant decline (p<0.05) in paid anal sex in the last month, with Nakuru recording significant decline (p<0.01).

Figure 59. MSM who exchanged anal sex for money or goods with a man in the past month by study site and year (%)

![Chart showing the percentage of MSM who exchanged anal sex for money or goods in the past month by study site and year]

* p<0.05; ** p<0.01
4.3d Condom and lubricant use with male clients

The proportion of MSM who reported that they used a condom the last time they had sex with a paying client was 77 percent in 2017, a significant increase (p<0.001) since 2014 (Figure 60). Kisumu (p<0.01), Nairobi (p<0.001), Mombasa (p<0.001), and Thika (p<0.001) recorded significant increases in condom use. Kisumu had the highest proportion of MSM who reported condom use at last sex with a male client, at 86 percent, while Kilifi had the lowest, at 62 percent.

Figure 60. MSM who used a condom during last sex with a male client by study site and year (%)

* 2014 2015 2017

Total 58 58 58
Consistent sites 77 77 77
Kisumu 72 79 86
Nairobi 33 35 70
Mombasa 78 70 66
Thika 81 81 80
Nakuru 80 71 76
Kilifi 62

*p<0.05; **p<0.01; ***p<0.001

The proportion of MSM who reported that they used lubricant the last time they had sex with a paying client was 73 percent; the highest being Kisumu, at 86 percent, and the lowest being Kilifi, at 55 percent (Figure 61).

Figure 61. MSM who used lubricant during last sex with a male client by study site (%)
Participants were asked whether they used a condom during last anal sex with a paying client in the last month and whether they used lubricant during last anal sex with a paying client in the last month. Nearly three-quarters (74 percent) of MSM respondents used a condom during anal sex with a paying client in the past month (Figure 62), and 74 percent of respondents used lubricant (Figure 63).

Kisumu had the highest proportion of MSM who used condoms and the highest proportion of MSM who used lubricant, at 85 percent and 86 percent respectively. Kilifi had the lowest proportions of MSM who used condoms and who used lubricant, at 58 percent and 53 percent respectively.

**Figure 62. MSM who used a condom during last anal sex with a paying client in the past month by study site (%)**

**Figure 63. MSM who used a lubricant during last anal sex with a male client in past month by study site (%)**
Overall, the proportion of MSM who had an occasion of unprotected anal sex with any male sexual partner in the past month was 32 percent, with Mombasa having the highest proportion, at 41 percent, while Kisumu had the lowest proportion, at 26 percent (Figure 64).

**Figure 64. MSM who had unprotected anal sex with a male partner during the past month by study site (%)**

Overall, 26 percent of MSM reported that they exchanged unprotected sex for money or goods with a man in the past month, a significant decrease (p<0.01) across the years (Figure 65). Consistent sites reported significant reduction (p<0.001), from 31 percent in 2014 to 23 percent in 2017, with significant decreases in Kisumu (p<0.001) and Nairobi (p<0.001). A significant increase was observed in Thika (p<0.05).

Kilifi had the highest proportion of MSM who received money or goods for unprotected sex with a man in the last month, at 41 percent, while Kisumu had the lowest, at 14 percent.

**Figure 65. MSM who exchanged unprotected sex with a man for money or goods in the past month by study site and year (%)**

*p<0.05; **p<0.01; ***p<0.001*
4.3e Regular partnership

Overall, 64 percent of MSM respondents had regular, non-paying male partners (Figure 66). Significant increases in regular partnerships were recorded in Nairobi (p<0.05) and Nakuru (p<0.05). Nakuru had the highest proportion of MSM with regular, non-paying partners, at 78 percent, while Mombasa had the lowest, at 43 percent.

![Figure 66. MSM who have a regular, non-paying male partner by study site and year (%)](image)

*p<0.05

Participants were asked if they have a regular female sexual partner. Overall, 48 percent of MSM participating in the survey in 2017 reported having regular female partners, a significant decrease since 2014 (p<0.01) (Figure 67). Reductions in the proportions of MSM with regular female partners were significant in Nairobi (p<0.05) and Thika (p<0.01).

Kisumu had the highest proportion of MSM with regular female partners (61 percent), and Nairobi had the lowest (35 percent).

![Figure 67. MSM who have a regular/live-in female sexual partner by study site and year (%)](image)

*p<0.05; **p<0.01
4.3f Condom use in regular partnership

Overall, 70 percent of MSM reported that they used a condom during last sex with their regular female sexual partner. Change was significant in consistent sites (p<0.05), with Nairobi (p<0.001) recording significant increase (Figure 68). A significant decrease was observed in Mombasa (p<0.05). Nairobi had the highest proportion of MSM reporting condom use during last sex with their regular female partner, at 93 percent, and Mombasa and Kilifi had the lowest proportions, at 54 percent.

**Figure 68. MSM who used a condom during last sex with regular female sexual partner by study site and year (%)**

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sites</td>
<td>70</td>
<td>68</td>
<td>70</td>
</tr>
<tr>
<td>Consistent sites</td>
<td>70</td>
<td>68</td>
<td>72</td>
</tr>
<tr>
<td>Kisumu</td>
<td>76</td>
<td>75</td>
<td>99</td>
</tr>
<tr>
<td>Mombasa</td>
<td>68</td>
<td>50</td>
<td>68</td>
</tr>
<tr>
<td>Nairobi Site</td>
<td>63</td>
<td>69</td>
<td>93</td>
</tr>
<tr>
<td>Nakuru</td>
<td>75</td>
<td>66</td>
<td>71</td>
</tr>
<tr>
<td>Thika</td>
<td>67</td>
<td>48</td>
<td>69</td>
</tr>
<tr>
<td>Kilifi</td>
<td>54</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05; ***p<0.001

Overall, condom use at last sex with regular, non-paying male sexual partners increased from 69 percent in 2015 to 71 percent in 2017, with significant increases in consistent sites (p<0.05), Kisumu (p<0.01), and Nairobi (p<0.01) (Figure 69). Kisumu had the highest condom use with regular, non-paying male sexual partners, at 83 percent, while Kilifi had the lowest, at 50 percent. MSM in Mombasa have reported low condom use with regular male sexual partners in all three survey rounds, with a high of 57 percent in 2015.

**Figure 69. MSM who used a condom during anal last sex with a regular, non-paying male partner by study site and year (%)**

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sites</td>
<td>70</td>
<td>69</td>
<td>71</td>
</tr>
<tr>
<td>Consistent sites</td>
<td>70</td>
<td>69</td>
<td>73</td>
</tr>
<tr>
<td>Kisumu</td>
<td>72</td>
<td>81</td>
<td>83</td>
</tr>
<tr>
<td>Mombasa</td>
<td>55</td>
<td>57</td>
<td>55</td>
</tr>
<tr>
<td>Nairobi Site</td>
<td>68</td>
<td>73</td>
<td>81</td>
</tr>
<tr>
<td>Nakuru</td>
<td>75</td>
<td>63</td>
<td>67</td>
</tr>
<tr>
<td>Thika</td>
<td>50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05; **p<0.01
4.3g Self-efficacy of condom use

Findings reveal that, overall, 20 percent of MSM had unprotected sex in the past month because their sexual partner did not want to wear a condom, a significant decrease (p<0.05) across the years (Figure 70). Significant reductions in unprotected sex because of partner refusal were recorded in two consistent sites: Kisumu (p<0.05) and Nairobi (p<0.001). Nairobi had the lowest incidence of unprotected sex because of partner refusal, at 14 percent, while Mombasa had the highest, at 27 percent.

Figure 70. MSM who had unprotected sex in the last month because sexual partner refused to use a condom by study site and year (%)

Overall, the proportion of participants who reported that they had unprotected sex in the last month because the client paid more money remained at 19 percent (Figure 71). Kilifi had the highest percentage of MSM who had unprotected sex because the partner paid more money, at 27 percent, while Kisumu and Thika had the lowest percentage, at 13 percent.

Figure 71. MSM who had unprotected sex in the last month because a client paid more money by study site and year (%)

*p<0.05; **p<0.01; ***p<0.001
Unprotected sex due to alcohol consumption by the MSM and/or the sexual partner declined significantly overall (p<0.01), from 30 percent in 2014 to 24 percent in 2017 (Figure 72). Consistent sites recorded even greater decline (p<0.001). Three consistent sites showed significant decline in unprotected sex due to alcohol: Kisumu (p<0.001), Nairobi (p<0.01), and Thika (p<0.01). In 2017, Kilifi had the highest proportion of MSM reporting unprotected sex due to alcohol consumption, at 36 percent.

Figure 72. MSM who had unprotected sex in the last month because either consumed alcohol by study site and year (%)

The proportion of MSM who reported that they had unprotected sex in the last month because a condom was not available declined significantly overall (p<0.001), from 33 percent in 2014 to 22 percent in 2017, and in consistent sites, from 33 percent in 2014 to 20 percent in 2017 (Figure 73). Three consistent sites recorded significant decrease in unprotected sex: Kisumu (p<0.001), Nairobi (p<0.05), and Thika (p<0.01). Kilifi reported the highest proportion (35 percent) of MSM who had unprotected sex in the past month because a condom was not available.

Figure 73. MSM who had unprotected sex in the last month because condom was unavailable by study site and year (%)

*p<0.05; **p<0.01; ***p<0.001
4.3h Condom mishap

Overall, MSM reporting condom burst or slippage stood at 14 percent in 2017, compared to 16 percent in 2015 and 20 percent in 2014, a significant decrease (p<0.001) (Figure 74). Significant declines were also reported in two consistent sites: Kisumu (p<0.001) and Thika (p<0.05). Condom mishaps were most prevalent in Kilifi in 2017, at 22 percent, and least prevalent in Kisumu, at 11 percent.

Figure 74. MSM who experienced condom burst or slippage during last condom use with any male partner by study site and year (%)

*4.3i Injection drug use

The proportion of MSM who had ever injected heroin or other narcotic drugs stood at 11 percent in 2017 (Figure 75). Significant increase in the proportion of MSM who had ever injected drugs was observed in Nakuru (p<0.05). Thika reported the lowest proportion of MSM who had injected, at five percent.

Figure 75. MSM who have injected heroin or other narcotic drugs by study site and year (%)

*p<0.05; **p<0.01; ***p<0.001
Among the MSM who had ever injected heroin or other narcotic drugs, 55 percent reported that they injected in the three months preceding the survey (Figure 76). A higher proportion of MSM in Kilifi and Kisumu (73 percent) injected in the last three months. The lowest proportion was observed in Nairobi, at 44 percent.

**Figure 76. MSM who have injected heroin or other narcotic drugs in the last three months by site (%)**

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Consistent sites</th>
<th>Kisumu</th>
<th>Mombasa</th>
<th>Nairobi Site</th>
<th>Nakuru</th>
<th>Thika</th>
<th>Kilifi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>55</td>
<td>53</td>
<td>73</td>
<td>56</td>
<td>44</td>
<td>45</td>
<td>58</td>
<td>73</td>
</tr>
</tbody>
</table>

**STRUCTURAL OUTCOMES**

4.3j Peer educator contact

Findings reveal that 80 percent of MSM were met by a peer educator in the three months preceding the survey, a significant increase (p<0.001) from 73 percent in 2015 (Figure 77). One consistent site (Mombasa) recorded significant increase (p<0.001) in peer educator contact, while Kisumu (p<0.01) and Nairobi (p<0.001) recorded significant declines. Nakuru reported the highest proportion of MSM contacted by a peer educator, at 94 percent, while Thika had the lowest, at 73 percent.

**Figure 77. MSM met by a peer educator in the preceding three months by study site and year (%)**

* p<0.05; ** p<0.01; *** p<0.001
4.3k Experience of violence

Overall, 14 percent of MSM reported that they experienced sexual violence in the preceding six months, a significant decrease (p<0.05) over the years (Figure 78). Reductions the proportions of MSM reporting violence were significant in Kisumu (p<0.001) and Thika (p<0.05), while significant increase (p<0.001) was reported in Nakuru. Kisumu recorded the least sexual violence, at six percent, while Nakuru recorded the highest, at 23 percent, in 2017.

Figure 78. MSM who were forced to have sex in the preceding six months by site and year (%)

The proportion of MSM who reported experiencing violence from police and city askaris declined from 24 in 2014 percent to 20 percent in 2017, a significant decline (p<0.05) (Figure 79). Mombasa recorded a significant increase (p<0.001) in the proportion of MSM reporting violence by law enforcers. Significant declines were recorded in Kisumu (p<0.001) and Thika (p<0.01). In 2017, Mombasa had the highest incidence of violence by law enforcers, at 49 percent, and Kisumu had the lowest, at eight percent.

Figure 79. MSM beaten or arrested by police or city askaris while cruising or doing sex work in the past six months by site and year (%)

*p<0.05; **p<0.01; ***p<0.001
FINDINGS OF THE 2017 PBS
4.3l Response to violence

Overall, 39 percent of MSM who experienced violence reported that they were assisted by the intervention, a clinic, or a DIC (Figure 80). In Kisumu and Nakuru, 47 percent of the MSM who experienced violence were supported, while Kilifi had the lowest proportion of MSM assisted after a violent incident, at 20 percent.

Figure 80. MSM who were supported by the intervention/clinic/DIC after they experienced violence in the past six months by study site (%)​

<table>
<thead>
<tr>
<th>Site</th>
<th>Total</th>
<th>Consistent sites</th>
<th>Kisumu</th>
<th>Mombasa</th>
<th>Nairobi</th>
<th>Nakuru</th>
<th>Thika</th>
<th>Kilifi</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sites</td>
<td>39</td>
<td>41</td>
<td>47</td>
<td>46</td>
<td>39</td>
<td>47</td>
<td>25</td>
<td>20</td>
</tr>
</tbody>
</table>

BIOMEDICAL OUTCOMES

4.3m HIV testing

Overall, 95 percent of respondents had ever been tested for HIV, a significant increase (p<0.01) over the years (Figure 81). Two consistent sites—Kisumu and Thika—reported significant increases in HIV testing (p<0.01), while Nairobi showed a significant decrease (p<0.05). Kilifi reported the lowest coverage of HIV testing, at 91 percent.

Figure 81. MSM who reported having ever been tested for HIV by study site and year (%)​

<table>
<thead>
<tr>
<th>Site</th>
<th>2014</th>
<th>2015</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sites</td>
<td>92</td>
<td>94</td>
<td>95</td>
</tr>
<tr>
<td>Consistent sites</td>
<td>92</td>
<td>94</td>
<td>96</td>
</tr>
<tr>
<td>Kisumu</td>
<td>93</td>
<td>96</td>
<td>99</td>
</tr>
<tr>
<td>Mombasa</td>
<td>94</td>
<td>86</td>
<td>97</td>
</tr>
<tr>
<td>Nairobi</td>
<td>95</td>
<td>96</td>
<td>95</td>
</tr>
<tr>
<td>Nakuru</td>
<td>97</td>
<td>92</td>
<td>97</td>
</tr>
<tr>
<td>Thika</td>
<td>95</td>
<td>96</td>
<td>95</td>
</tr>
<tr>
<td>Kilifi</td>
<td>91</td>
<td>92</td>
<td>91</td>
</tr>
</tbody>
</table>

*p<0.05; **p<0.01
In consistent sites, the proportion of MSM tested for HIV in the preceding three months increased to 79 percent in 2017 from 74 percent in 2014, though the change was not significant (Figure 82). In 2017, Kisumu had the highest HIV testing rate, at 85 percent, while Kilifi had the lowest, at 57 percent.

**Figure 82. MSM who reported having been tested for HIV in the past three months by study site and year (%)**

![HIV testing rates by site and year](image)

**4.3n HIV infection, care, and treatment**

Overall, 17 percent of MSM reported that they are living with HIV (Figure 83). Nairobi recorded the highest proportion of MSM living with HIV, at 27 percent, while Nakuru had the lowest proportion of MSM living with HIV, at nine percent.

**Figure 83. MSM living with HIV by study site (%)**

![HIV prevalence by site](image)
The survey asked respondents who reported that they are living with HIV whether they had ever enrolled in HIV care and treatment and whether they were on ART at the time of the survey. Of those living with HIV, 69 percent had ever been enrolled in care and treatment, and 63 percent were currently on ART (Figure 84). Thika had the highest proportions of MSM enrolled in care and treatment and currently on ART, at 76 percent and 74 percent respectively, while Mombasa had the lowest, at 48 percent and 43 percent respectively. Kisumu reported the biggest gap—12 percentage points—between those enrolled in care and treatment and those currently on ART, indicating a larger drop-out rate compared to other sites.

Overall, the proportion of MSM on ART who had missed an ART clinic appointment and 30 days had passed since their last appointment stood at 38 percent (Figure 85). Kilifi had the highest proportion of MSM overdue for an ART appointment, at 82 percent. Nakuru had the lowest proportion of MSM overdue, at 22 percent.
4.3o Pre-exposure prophylaxis

The survey found that 12 percent of the MSM were taking PrEP (Figure 86). Mombasa had the highest proportion of MSM on PrEP, at 28 percent, while Nakuru had the lowest, with only two percent taking PrEP.

4.3p Sexually transmitted infections

Participants were asked if they were experiencing any symptoms of STI at the time of the survey. Overall, 13 percent of MSM in 2017 reported experiencing STI symptoms, a significant decrease (p<0.01) from 17 percent in 2014 (Figure 87). Two consistent sites recorded significant decrease in MSM experiencing STI symptoms: Kisumu (p<0.001) and Thika (p<0.01). Nairobi and Thika had the highest proportion of MSM experiencing symptoms, at 16 percent, while Nakuru had the lowest, at seven percent.
Participants were asked if they had been diagnosed with an STI and whether they had been treated for an STI in the three months preceding the survey. Overall, 23 percent of MSM in 2017 reported having been diagnosed with an STI (Figure 88). Mombasa had the highest proportion diagnosed with an STI, at 54 percent, and Kisumu had the lowest, at 23 percent. Overall, 37 percent of STI cases diagnosed were treated in the last three months. Nakuru had the highest proportion of STI cases treated, at 89 percent, while Kisumu had the least, at 23 percent.

**Figure 88. MSM diagnosed with an STI in the last three months and MSM treated for an STI in the last three months by study site (%)**

![Graph showing the percentage of MSM diagnosed with an STI and treated for an STI by study site.](image)

**4.3q Visit to a DIC/clinic/intervention**

As per the national guidelines, MSM should visit a programme DIC or clinic quarterly for biomedical interventions, such as HIV testing, STI screening, and other services. Overall, 68 percent of MSM visited a DIC or a clinic for biomedical intervention in the last three months, a significant increase (p<0.05) over the years (Figure 89). Consistent sites also recorded significant increase in visits, with three of five sites recording significant increases: Mombasa (p<0.001), Nairobi (p<0.001), and Nakuru (p<0.01). Kisumu recorded a significant drop (p<0.01). Nakuru had the highest proportion of MSM who had visited a DIC or clinic, at 83 percent, while Kilifi had the lowest, at 35 percent.

**Figure 89. MSM who visited or received services from the intervention, a DIC, or a project clinic in the last three months by study site and year (%)**

![Graph showing the percentage of MSM who visited a DIC or clinic by study site and year.](image)

*p<0.05;**p<0.01;***p<0.001*
4.4 Young Men Who Have Sex with Men

Age distribution of YMSM respondents by study site

Overall, 97 percent of YMSM were 18–24 years old (Figure 90).

BEHAVIOURAL OUTCOMES

4.4a Condom and lubricant use

Overall, the proportion of YMSM reporting condom use at last anal sex stood at 85 percent (Figure 91). Nairobi and Kisumu recorded the highest proportion of YMSM reporting condom use, at 88 percent, compared to Mombasa, with 75 percent.
The proportion of YMSM reporting the use of lubricant at last anal sex stood at 77 percent (Figure 92). Nairobi recorded the highest proportion of YMSM reporting lubricant use, at 79 percent, while Mombasa recorded the lowest, at 71 percent.

### Figure 92. YMSM who used lubricant during last anal sex by study site (%)

![Bar chart showing lubricant use by study site]

<table>
<thead>
<tr>
<th>Site</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mombasa</td>
<td>71</td>
</tr>
<tr>
<td>Kisumu</td>
<td>78</td>
</tr>
<tr>
<td>Nairobi</td>
<td>79</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
</tr>
</tbody>
</table>

#### 4.4b Sex work

Overall, 63 percent of YMSM reported that they had exchanged anal sex for money or goods, Mombasa had the highest proportion who had done so, at 78 percent, and Kisumu had the lowest proportion, at 51 percent (Figure 93).

### Figure 93. YMSM who have ever exchanged sex for money or goods with men by study site (%)

![Bar chart showing exchange for money or goods]

<table>
<thead>
<tr>
<th>Site</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mombasa</td>
<td>78</td>
</tr>
<tr>
<td>Kisumu</td>
<td>51</td>
</tr>
<tr>
<td>Nairobi</td>
<td>63</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
</tr>
</tbody>
</table>

Overall, the proportion of YMSM reporting exchange of anal sex for money or goods with men in the past month was 61 percent, the highest being in Mombasa, at 74 percent, and the lowest being in Kisumu, at 50 percent (Figure 94).
4.4c Condom and lubricant use with clients

Condom use in paid partnerships among YMSM stood at 84 percent (Figure 95). The proportion of YMSM reporting condom use in last sex with a male client was highest in Kisumu, at 95 percent, and lowest in Nairobi, at 78 percent.

Overall, 78 percent of YMSM used lubricant in last anal sex with a male client, the highest being in Nairobi, at 84 percent, and the lowest being in Mombasa, at 67 percent (Figure 96).
Overall, 78 percent of YMSM reported having used a condom during last anal sex with a client in the past month (Figure 97). Kisumu had the highest incidence of condom use, at 87 percent, while Mombasa had the lowest, at 67 percent.

![Figure 97. YMSM who used a condom during last anal sex with a paying client in the past month by study site (%)](image)

Just over three-quarters (76 percent) of YMSM reported that they used lubricant the last time that they had anal sex with a client in the past month (Figure 98). Kisumu recorded the highest lubricant use, at 81 percent, while Mombasa had the lowest lubricant use, at 70 percent.

![Figure 98. YMSM who used lubricant during last anal sex with a male client in the past month by study site (%)](image)

Overall, 26 percent of YMSM had an occasion of unprotected sex in the past month with a male sexual partner (Figure 99). Mombasa reported the highest rate of unprotected sex with a male partner in the past month, at 35 percent, while the lowest rate was among YMSM in Kisumu, at 18 percent.
Overall, 16 percent of YMSM reported that they engaged in unprotected sex with a man for money or goods in the last month (Figure 100). Mombasa reported the highest incidence, at 27 percent, while only four percent of YMSM in Kisumu exchanged unprotected sex with a man for goods or money in the past month.

**Figure 100. YMSM who exchanged unprotected sex with a man for money or goods in the last month by study site (%)**

4.4d Regular partnerships

Overall, 63 percent of YMSM reported having a regular male partner (Figure 101). Nairobi had the highest proportion of YMSM in regular relationships, at 70 percent, and Mombasa had the lowest, at 47 percent.

**Figure 101. YMSM who have a regular, non-paying male partner by study site (%)**
Overall, 51 percent of YMSM reported having a regular female sexual partner (Figure 102). In Mombasa and Kisumu, 56 percent of YMSM reported having a regular female partner, and Nairobi had the lowest proportion of YMSM with regular female partners, at 44 percent.

Figure 102. YMSM who have a main/live-in female sexual partner by study site (%)

Some 82 percent of YMSM reported that they used a condom during last anal sex with regular, non-paying male partners (Figure 103). YMSM in Kisumu reported the highest rate of condom use at last anal sex with a regular male partner, at 94 percent, while YMSM in Mombasa had the lowest rate, at 63 percent.

Figure 103. YMSM who used a condom during last anal sex with a regular, non-paying male partner by study site (%)

Nearly four out of five (78 percent) YMSM reported that they used a condom during last sex with their regular female partner (Figure 104). YMSM in Nairobi had the highest rate of condom use at last sex with a regular female partner, at 95 percent, and YMSM in Mombasa had the lowest, at 53 percent.

Figure 104. YMSM who used a condom during last sex with regular female partner by study site (%)
### 4.4e Self-efficacy of condom use

Overall, 14 percent of YMSM reported an occasion of unprotected sex in the past month because no condom was available (Figure 105). Mombasa had the highest rate of unprotected sex because of condom unavailability, at 24 percent, while YMSM in Kisumu reported the lowest rate of unprotected sex due to unavailability, at 3 percent.

**Figure 105. YMSM who had unprotected sex in the last month because condom was unavailable by study site (%)**

Twenty percent of YMSM reported an occasion of unprotected sex in the past month because the sexual partner did not want to wear a condom (Figure 106). Unprotected sex because of partner refusal to wear a condom was most common among YMSM in Mombasa, at 41 percent, and least common in Nairobi, at 11 percent.

**Figure 106. YMSM who had unprotected sex in the last month because sexual partner refused to use a condom by study site (%)**
Overall, 17 percent of YMSM reported that they engaged in unprotected sex in the last month because of alcohol consumption (Figure 107). YMSM in Mombasa reported the highest incidence, at 27 percent, and YMSM in Kisumu reported the lowest incidence of unprotected sex due to alcohol, at 11 percent.

**Figure 107. YMSM who had unprotected sex in the last month because of alcohol consumption by study site (%)**

Fourteen percent of YMSM reported that they had unprotected sex in the last month because the partner paid more money (Figure 108). YMSM in Mombasa had the highest rate of unprotected sex because of more money, at 31 percent, while YMSM in Kisumu reported the lowest rate, at two percent.

**Figure 108. YMSM who had unprotected sex in the last month because a client paid more money by study site (%)**
4.4f Condom mishap

Eleven percent of YMSM experienced condom burst or slippage the last time a condom was used (Figure 109). Condom failure was more common among YMSM in Mombasa, 18 percent, than among YMSM in Kisumu and Nairobi, at 8 percent.

![Figure 109. YMSM who experienced condom burst or slippage during last condom use with any male partner by site (%)](image)

4.4g Injecting drug use

Overall, 13 percent of YMSM had ever injected heroin or other narcotic drugs (Figure 110). Mombasa reported the highest percentage of YMSM who had ever injected, at 22 percent, compared to 10 percent of YMSM in Nairobi and Kisumu.

![Figure 110. YMSM who have ever injected heroin or other narcotic drugs by study site (%)](image)
Sixty-five percent of YMSM who had ever injected heroin or other narcotic drugs reported that they injected in the last three months (Figure 111). Of YMSM in Nairobi who had ever injected, 100 percent had injected in last three months.

**Figure 111. YMSM who have injected heroin or other narcotic drugs in the last three months by study site (%)**

<table>
<thead>
<tr>
<th>Study Site</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mombasa</td>
<td>43</td>
</tr>
<tr>
<td>Kisumu</td>
<td>57</td>
</tr>
<tr>
<td>Nairobi</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
</tr>
</tbody>
</table>

**STRUCTURAL OUTCOMES**

**4.4h Peer educator contact**

Overall, 78 percent of YMSM reported that they had been contacted by a peer educator with a prevention service at least once in the last three months (Figure 112). Mombasa reported the highest, at 94 percent, and Kisumu reported the lowest rate of peer educator contact, at 71 percent.

**Figure 112. YMSM met by a peer educator in the last three months by study site (%)**

<table>
<thead>
<tr>
<th>Study Site</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mombasa</td>
<td>94</td>
</tr>
<tr>
<td>Kisumu</td>
<td>71</td>
</tr>
<tr>
<td>Nairobi</td>
<td>72</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
</tr>
</tbody>
</table>
4.4i Experience of violence

Overall, 13 percent of YMSM reported that they had been forced to have sex in the last six months, with Mombasa having the highest incidence, at 26 percent, and Kisumu the lowest, at five percent (Figure 113).

Figure 113. YMSM who were forced to have sex in the preceding six months by study site (%)

Overall, 27 percent of YMSM reported that they had been beaten or arrested by police or city askaris while cruising or doing sex work in the last six months (Figure 114). Mombasa had the highest proportion of YMSM who had experienced violence from law enforcers, at 58 percent, while Kisumu recorded the lowest incidence of such violence, at 10 percent.

Figure 114. YMSM beaten or arrested by police or city askaris while cruising or doing sex work in the past six months by study site (%)

4.4j Response to violence

Overall, 41 percent of YMSM who experienced violence received assistance from the intervention (Figure 115). YMSM who had experienced violence in Nairobi reported the least support, at 21 percent, while YMSM who experienced violence in Mombasa reported the highest, at 58 percent.
BIOMEDICAL OUTCOMES

4.4k HIV testing

Ninety-five percent of YMSM reported having ever taken an HIV test (Figure 116). Mombasa had the lowest proportion of YMSM who had ever been tested for HIV, at 92 percent, and Kisumu had the highest, at 99 percent.

Eighty-two percent of YMSM reported that they had taken an HIV test in the three months preceding the survey (Figure 117). HIV testing in the last three months was most common among YMSM in Kisumu, 88 percent, and least common among YMSM in Mombasa, at 73 percent.
4.4.1 HIV infection, care, and treatment

YMSM participating in the study were asked if they are living in HIV. Overall, 20 percent of YMSM reported that they are living with HIV, with Nairobi having the highest proportion living with HIV, at 31 percent, and Kisumu having the lowest proportion, at 10 percent (Figure 118).

Of the YMSM living with HIV, 77 percent had enrolled in care and treatment, while 68 percent were currently on ART (Figure 119). All YMSM living with HIV in Kisumu reported that they had enrolled in HIV care and treatment and that they were on ART. Mombasa had the lowest proportion of YMSM living with HIV who had ever enrolled in HIV care and treatment, at 40 percent, and the lowest proportion of YMSM living with HIV taking ART, at 30 percent.
Overall, 34 percent of YMSM taking ART reported that they had missed an ART clinic appointment and that 30 days had passed since their last appointment (Figure 120). Nairobi reported the highest proportion of YMSM overdue for an ART appointment, 41 percent, while Kisumu had the lowest overdue rate, 14 percent.

**Figure 120. YMSM living with HIV who missed an ART clinic appointment and 30 days have passed since their last appointment by study site (%)**

![Bar chart showing percentage of YMSM living with HIV who missed an ART clinic appointment by study site.](image)

<table>
<thead>
<tr>
<th>Location</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mombasa</td>
<td>33</td>
</tr>
<tr>
<td>Kisumu</td>
<td>14</td>
</tr>
<tr>
<td>Nairobi</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
</tr>
</tbody>
</table>

### 4.4m Pre-exposure prophylaxis

Thirteen percent of YMSM reported that they were on PrEP (Figure 121). Mombasa had the highest proportion of YMSM on PrEP, at 21 percent, whereas Kisumu and Nairobi reported 10 percent.

**Figure 121. YMSM who are currently taking PrEP by study site (%)**

![Bar chart showing percentage of YMSM taking PrEP by study site.](image)

<table>
<thead>
<tr>
<th>Location</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mombasa</td>
<td>21</td>
</tr>
<tr>
<td>Kisumu</td>
<td>10</td>
</tr>
<tr>
<td>Nairobi</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
</tr>
</tbody>
</table>
4.4n Sexually transmitted infections

The survey respondents were asked if they were experiencing STI symptoms. Overall, 11 percent of the YMSM reported experiencing STI symptoms at the time of survey (Figure 122). In Mombasa and Kisumu, 14 percent of YMSM were experiencing STI symptoms, whereas in Nairobi eight percent were experiencing STI symptoms.

![Figure 122. YMSM currently experiencing STI symptoms by study site (%)](image1)

4.4o STI diagnosis and treatment

Twenty-seven percent of YMSM reported having been diagnosed with an STI in the last three months (Figure 123). Mombasa had the highest proportion diagnosed with an STI, at 51 percent, and Kisumu had the lowest, at 10 percent. Overall, 24 percent of YMSM diagnosed with an STI were treated in the last three months. Mombasa had the highest proportion of YMSM reporting that they were treated in the last three months, at 38 percent, and Kisumu had the lowest proportion, at 21 percent.

![Figure 123. YMSM diagnosed with an STI in the last three months and YMSM treated for an STI in the last three months by study site (%)](image2)
4.4p Visit to a DIC/clinic/intervention

Findings show that 75 percent of YMSM had visited a DIC, project site, or clinic in the three months before the survey (Figure 124). Nairobi had the highest proportion of YMSM who had visited, at 83 percent, and Kisumu had the lowest proportion, at 67 percent.

Figure 124. YMSM who visited or received services from the intervention, project clinic, or DIC in the last three months by study site (%)

4.5 People Who Inject Drugs – Ages 18 and Above

Age distribution of PWID respondents by site

Overall, 48 percent of PWID were 25–34 years old, and 33 percent were 35–44 years old (Figure 125).
4.5a Heroin and other narcotic drug use

The study found that 90 percent of PWID had injected heroin or other narcotics in the month preceding the study, a slight reduction from 92 percent in 2014 (Figure 126). In the consistent sites the reduction was significant (p<0.05). There were slight variations among regions, with Kilifi and Mombasa in the coast reporting that 95 percent of PWID injected heroin and other narcotics in the past month, compared to 87 percent of PWID in Nairobi, and 83 percent in Kisumu. Significantly (p<0.05) more women (95 percent) than men (89 percent) injected in the preceding month.

Figure 126. PWID who injected heroin or narcotic drugs in last month by study site, year, and gender (%)

* p<0.05

BEHAVIOURAL OUTCOMES

4.5b Use of new needle and syringe

Eighty-eight percent of PWID reported that they used a new needle and syringe when they last injected heroin or other narcotics, which was a slight decrease from 89 percent in 2015 (Figure 127). Mombasa had the highest proportion of PWID who reported use of a new needle and syringe, at 96 percent. Kisumu had the lowest, at 82 percent. However, Kisumu had the greatest increase in the proportion of PWID who reported using a new needle and syringe, from 62 percent in 2015 to 82 percent in 2017 (p<0.001). Slightly more women (91 percent) than men (88 percent) used a new needle and syringe when they last injected.
4.5c Sharing of needle and syringe

The findings showed that 15 percent of PWID shared needles/syringes the last time they injected (Figure 128). The consistent sites showed a significant reduction, from 17 percent in 2014 to 13 percent in 2017 (p<0.05). Kisumu recorded the greatest decrease in needle/syringe sharing, from 63 percent in 2015 to 15 percent in 2017 (p<0.001). Significant difference also was observed in Mombasa, which recorded a reduction from 17 percent in 2014 to 4 percent in 2017 (p<0.001). Significant difference was not observed between the proportion of men and the proportion of women who reported having shared needle/syringes.

4.5c Sharing of needle and syringe

The findings showed that 15 percent of PWID shared needles/syringes the last time they injected (Figure 128). The consistent sites showed a significant reduction, from 17 percent in 2014 to 13 percent in 2017 (p<0.05). Kisumu recorded the greatest decrease in needle/syringe sharing, from 63 percent in 2015 to 15 percent in 2017 (p<0.001). Significant difference also was observed in Mombasa, which recorded a reduction from 17 percent in 2014 to 4 percent in 2017 (p<0.001). Significant difference was not observed between the proportion of men and the proportion of women who reported having shared needle/syringes.

4.5c Sharing of needle and syringe

The findings showed that 15 percent of PWID shared needles/syringes the last time they injected (Figure 128). The consistent sites showed a significant reduction, from 17 percent in 2014 to 13 percent in 2017 (p<0.05). Kisumu recorded the greatest decrease in needle/syringe sharing, from 63 percent in 2015 to 15 percent in 2017 (p<0.001). Significant difference also was observed in Mombasa, which recorded a reduction from 17 percent in 2014 to 4 percent in 2017 (p<0.001). Significant difference was not observed between the proportion of men and the proportion of women who reported having shared needle/syringes.

4.5c Sharing of needle and syringe

The findings showed that 15 percent of PWID shared needles/syringes the last time they injected (Figure 128). The consistent sites showed a significant reduction, from 17 percent in 2014 to 13 percent in 2017 (p<0.05). Kisumu recorded the greatest decrease in needle/syringe sharing, from 63 percent in 2015 to 15 percent in 2017 (p<0.001). Significant difference also was observed in Mombasa, which recorded a reduction from 17 percent in 2014 to 4 percent in 2017 (p<0.001). Significant difference was not observed between the proportion of men and the proportion of women who reported having shared needle/syringes.

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4.5d Availability of new needles

The survey found a significant reduction (p<0.01) in the proportion of PWID who reported at least one occasion in the past month of wanting to use a new needle but being unable to obtain one (Figure 129). Decreases in PWID wanting to use a new needle but being unable to obtain one were significant in Kisumu (p<0.001) and Mombasa (p<0.01). The difference between the proportions of women (28 percent) and men (27 percent) wanting to use a new needle but being unable to get one was not significant.

**Figure 129. PWID who were unable to get a new needle when needed at least once in the past month by study site, year, and gender (%)**

**p<0.01; ***p<0.001

4.5e Condom use with regular partner

Overall, 45 percent of PWID used a condom the last time they had sex with a regular sexual partner (Figure 130). There was variation across counties, with Kisumu recording the smallest percentage (38 percent) of PWID using condoms with regular partners and Kilifi recording the highest percentage (51 percent). More men (46 percent) than women (40 percent) used a condom with regular partners. None of the differences were significant.

**Figure 130. PWID who used a condom the last time they had sex with a regular sexual partner by study site, year, and gender (%)**
4.5f Condom use with non-regular partner

Overall, 76 percent of PWID used a condom last time they had sex with a non-regular partner (Figure 131). Nairobi had the lowest percentage (66 percent) of PWID who used a condom at last sex with non-regular partners, and Mombasa and Kilifi had the highest percentage (83 percent). The difference between the proportions of women (77 percent) and men (76 percent) who used a condom at last sex with non-regular partners was not significant.

4.5g Condom availability

The proportion of PWID who had unprotected sex in the preceding month because of condom unavailability stood at 30 percent in 2017, which was a significant decrease from 35 percent in 2014 (p<0.05) (Figure 132). There was variation across counties, with 37 percent in Kisumu, followed by 35 percent in Nairobi, 25 percent in Kilifi, and 21 percent in Mombasa. Kisumu showed the greatest decline of PWID reporting an occasion of unprotected sex because of condom unavailability, from 57 percent in 2015 to 37 percent in 2017 (p<0.01). More women (37 percent) than men (28 percent) had unprotected sex in the preceding month because of condom unavailability, and the difference was significant (p<0.05).
4.5h Condom mishap

There was a significant decrease in the number of PWID who reported condom burst or slippage during most recent sex, from 23 percent in 2014 to 18 percent in 2017 (p<0.05) (Figure 133). Kisumu reported the greatest decline, from 37 percent in 2015 to 16 percent in 2017 (p<0.001). More women (28 percent) than men (15 percent) reported condom burst or slippage the last time they had sex, and the difference was significant (p<0.001).

**Figure 133. PWID who reported condom burst or slippage during most recent sex by study site, year, and gender (%)**

* p<0.05; *** p<0.001

**STRUCTURAL OUTCOMES**

4.5i Peer educator contact

In the three months preceding the survey, 84 percent of the PWID were met by a peer educator (Figure 134). Between 2015 and 2017, significant change was observed only in Kilifi, where the proportion of PWID who reported peer educator contact reduced from 96 percent to 88 percent (p<0.01). More women (87 percent) than men (83 percent) were met by a peer educator in 2017.

**Figure 134. PWID met by a peer educator from the intervention in the last three months by study site, year, and gender (%)**

** p<0.01
4.5j Experience of violence

Findings revealed that 12 percent of PWID were forced to have sexual intercourse in the six months preceding the study, which was a significant increase from eight percent in 2014 (p<0.01) (Figure 135). Nairobi had the highest proportion reporting such violence, at 22 percent, which was a significant increase from nine percent in 2014 (p<0.001). Significant change recorded in Mombasa indicates improvement (p<0.05). Forced sex was more common among women (15 percent) than men (12 percent), though the difference was not significant.

Figure 135. PWID forced to have sexual intercourse in the last six months by study site, year, and gender (%)

Overall, 44 percent of PWID experienced violence from law enforcers while injecting drugs in the six months preceding the study. This was a significant reduction in all sites and consistent sites (p<0.001) (Figure 136). In 2017, the proportion of PWID reporting violence from law enforcers was highest in Nairobi County, at 52 percent, despite a significant decrease from 65 percent in 2014 (p<0.001). A higher proportion of male PWID (44 percent) than femalePWID (41 percent) reported experiencing violence from law enforcers, but the difference was not significant.

Figure 136. PWID beaten by police and/or city askaris when injecting drugs in the last six months by study site, year, and gender (%)

*p<0.05; **p<0.01; ***p<0.001

***p<0.001
**4.5k Response to violence**

The survey found that 51 percent of the PWID who experienced violence in the six months preceding the study received assistance from the intervention, a clinic, or a DIC (Figure 137). The proportion of PWID who received assistance after violence was highest in Nairobi, at 65 percent, and lowest in Kilifi, at 38 percent. A higher share of women (61 percent) than men (48 percent) received assistance (p<0.05).

**Figure 137. PWID who were supported by the intervention/clinic/DIC after they experienced violence in the past six months by study site and gender (%)**

**BIOMEDICAL OUTCOMES**

**4.5l Experience of drug overdose**

Drug overdose is a serious problem among the PWID surveyed, with 40 percent having overdosed in the six months preceding the survey (Figure 138). Kisumu had the highest incidence of overdose, at 58 percent, and Mombasa had the lowest, at 30 percent. Decreases were significant overall (p<0.001), in consistent sites (p<0.001), in Kilifi (p<0.05), in Nairobi (p<0.01), and in Mombasa (p<0.001). Overdose was more prevalent among men (42 percent) than among women (32 percent) (p<0.05).

**Figure 138. PWID who experienced an overdose in the last six months by study site, year, and gender (%)**

*p<0.05; **p<0.01; ***p<0.001
4.5m Drug rehabilitation/treatment

Significant declines were observed overall and in consistent sites in the proportion of PWID who reported having undergone drug rehabilitation or treatment, from 63 percent in 2014 to 30 percent in 2017 (p<0.001) (Figure 139). Declines were significant in all sites (p<0.001). The difference between the proportions of women (31 percent) and of men (29 percent) who had undergone drug rehabilitation or treatment was not significant.

4.5n Ever taken HIV test

Some 94 percent of the PWID had ever been tested for HIV (Figure 140). Significant change in the proportion of PWID ever tested occurred only in Kisumu, which recorded an increase from 87 percent in 2015 to 95 percent in 2017 (p<0.01). More men (95 percent) than women (93 percent) had been tested for HIV.
4.5o HIV test in the past three months

The proportion of PWID who reported that they had taken an HIV test in the last three months remained constant at 74 percent in 2015 and 2017 (Figure 141). In Kilifi, PWID who had taken an HIV test in the last three months decreased from 78 percent in 2015 to 64 percent in 2017 (p<0.01). However, in Kisumu and Nairobi, the percentage of PWID who had taken an HIV test in the last three months significantly increased (p<0.05 and p<0.001 respectively). Equal proportions of men and women (74 percent) had been tested for HIV in the last three months.

*Figure 141. PWID who have been tested for HIV in the last three months by study site, year, and gender (%)*

![Graph showing HIV test rates by site, year, and gender](image-url)

*p<0.05; **p<0.01; ***p<0.001

4.5p Reported HIV positivity

Of the PWID respondents, 20 percent reported that they were living with HIV (Figure 142). Kisumu County recorded the highest HIV prevalence, at 23 percent, while Mombasa recorded the lowest prevalence, at 18 percent. HIV prevalence of female PWID was more than double (36 percent) that of male PWID (17 percent).

*Figure 142. PWID who reported that they are living with HIV by study site and gender (%)*

![Graph showing HIV prevalence by site and gender](image-url)
4.5q HIV care and treatment

Overall, 78 percent of PWID living with HIV reported having ever been enrolled in care, and 68 percent of PWID living with HIV reported that they were currently taking ART (Figure 143). HIV care and treatment coverage varied across counties. Kilifi registered the highest proportions of PWID linked to care and on ART, at 94 percent and 84 percent respectively. Mombasa reported the lowest proportions enrolled in care and on ART, at 76 percent and 62 percent respectively. There were more female PWID than male PWID linked to care (82 percent vs. 76 percent) and on ART (74 percent vs. 65 percent).

4.5r Missed appointment with ART clinic

Overall, 58 percent of PWID on ART reported that they had missed an ART clinic appointment and that 30 days had passed since their last appointment, with Kilifi having the highest proportion overdue, at 77 percent, and Nairobi recording the lowest proportion, at 46 percent (Figure 144). There was no difference between male and female PWID.
4.5s STI symptoms

During the survey, STI signs and symptoms were read aloud and the respondents were asked if they were presently experiencing any of the signs or symptoms. Their responses revealed that 10 percent of the PWID were currently experiencing STI symptoms (Figure 145). Little variation was observed across sites, with Kisumu reporting the highest prevalence of STI, at 11 percent, followed by Kilifi and Mombasa, at 10 percent, and Nairobi, at 8 percent. More female PWID (13 percent) than male PWID (nine percent) were experiencing STI symptoms.

Figure 145. PWID currently experiencing any sign or symptom of an STI by study site and gender (%)  

![Figure 145](image)

4.5t STI diagnosis and treatment

Overall, 24 percent of PWID were diagnosed with an STI in the three months preceding the survey, with Mombasa recording the highest proportion diagnosed, at 34 percent, and Kilifi recording the lowest proportion diagnosed, at 14 percent (Figure 146). More women (46 percent) than men (19 percent) were diagnosed with an STI in the last three months.

Figure 146. PWID diagnosed with an STI in the last three months by study site and gender (%)  

![Figure 146](image)
Only 28 percent of the PWID who were diagnosed with an STI received treatment in the last three months (Figure 147). Mombasa had the highest proportion treated, at 55 percent, and Kilifi had the lowest proportion treated, at 17 percent. More women (33 percent) than men (26 percent) were treated for an STI in the last three months.

**Figure 147. PWID having an STI who received treatment in the last three months by study site and gender (%)**

![Chart showing treatment rates by site and gender]

**4.5u Hepatitis C diagnosis and treatment**

Overall, 16 percent of PWID had been diagnosed with hepatitis C (Figure 148). Mombasa had the highest percentage of PWID diagnosed with hepatitis C, at 30 percent, and Kisumu had the lowest, at 4 percent. More women (23 percent) than men (15 percent) were diagnosed with hepatitis C.

**Figure 148. PWID who have been diagnosed with hepatitis C by study site and gender (%)**

![Chart showing hepatitis C diagnosis rates by site and gender]

Treatment of hepatitis C post diagnosis was low, at 20 percent overall (Figure 149). While 43 percent of PWID at Nairobi and Kisumu who were diagnosed with hepatitis C received treatment, only nine percent received treatment in Mombasa. Only 20 percent of men and 28 percent of women diagnosed with hepatitis C were treated.
4.5v Pre-exposure prophylaxis

Uptake of PrEP among PWID was low, at three percent overall (Figure 150). The proportion of PWID on PrEP was lowest in Kilifi, at one percent, and highest in Kisumu, at seven percent. More female PWID (seven percent) than male PWID (three percent) reported that they were taking PrEP.
4.5w Visit to a DIC/clinic/intervention

In the three months preceding the survey, 72 percent of the PWID visited or received services from a clinic, intervention, or DIC (Figure 151). The proportion of PWID who visited or received services from a clinic, DIC, or intervention in the three months preceding the survey was lowest in Kisumu, at 60 percent. Mombasa recorded the highest proportion of PWID who had made such a visit, at 76 percent, a significant increase from 63 percent 2014 (p<0.001). Significantly more female (77 percent) than male (70 percent) PWID visited or received services from the intervention, a clinic, or a DIC (p<0.05).

![Figure 151](image)

*p<0.05; ***p<0.001

4.6 Young People Who Inject Drugs

Age distribution of YPWID by study site

Findings revealed that 92 percent of YPWID were 18–24 years old, and that eight percent were 15–17 years old (Figure 152).

![Figure 152](image)

TOTAL 92% 8%
Mombasa 92% 8%
Nairobi 93% 7%
4.6a Heroin and other narcotic drug use

In the month preceding the study, 87 percent of YPWID injected heroin or other narcotics (Figure 153). More YPWID injected in the last month in Mombasa (89 percent) than in Nairobi (86 percent).

![Figure 153. YPWID who injected heroin or other narcotic drugs in the last month by study site (%)](image)

**BEHAVIOURAL OUTCOMES**

4.6b Use of new needles, sharing of needles, and availability of needles and syringes

The findings of this survey showed that 88 percent of YPWID used a new needle in their last injecting event (Figure 154), and that 14 percent of YPWID shared needles and/or syringes (Figure 155). Overall, 29 percent of YPWID reported an occasion in the past month of being unable to get a new needle at the moment and place that they wanted one (Figure 156). More YPWID in Nairobi (37 percent) than in Mombasa (20 percent) reported being unable to get a new needle when wanted in the preceding month.

![Figure 154. YPWID who used a new (unused) needle and syringe the last time they injected by study site (%)](image)
4.6c Condom availability

The proportion of YPWID respondents who had unprotected sex in the preceding month because of condom unavailability was 35 percent (Figure 157). YPWID in Nairobi reported a higher incidence of unprotected sex because of condom unavailability (37 percent) than PWID in Mombasa (31 percent).
4.6d Condom mishap

Some 26 percent of YPWID reported that they experienced condom burst or slippage the last time they had sex. Condom mishap was more common in Mombasa (27 percent) than in Nairobi (25 percent) (Figure 158).

**Figure 158. YPWID whose condom burst or slipped the last time they had sex by study site (%)**

![Bar chart showing the percentage of respondents with condom mishap by study site. All sites: 26%, Mombasa: 27%, Nairobi: 25%.]

**STRUCTURAL OUTCOMES**

4.6e Peer educator contact

In the three months preceding the survey, 79 percent of the YPWID were met by a peer educator, with Nairobi recording a higher percentage (84 percent) than Mombasa (72 percent) (Figure 159).

**Figure 159. YPWID met by a peer educator from the intervention in the last three months by study site (%)**

![Bar chart showing the percentage of respondents met by peer educators by study site. All sites: 79%, Mombasa: 72%, Nairobi: 84%.]
4.6f Experience of violence

Findings revealed that 20 percent of YPWID were forced to have sexual intercourse in the six months preceding the study (Figure 160). Forced intercourse was reported by more YPWID in Nairobi (30 percent) than in Mombasa (eight percent).

Figure 160. YPWID physically forced to have sexual intercourse in the last six months by study site (%)

Overall, 53 percent of YPWID had experienced violence from law enforcers while injecting drugs in the six months preceding the study (Figure 161). Violence from law enforcers was reported by more YPWID in Nairobi (55 percent) than in Mombasa (51 percent).

Figure 161. YPWID beaten by police and/or city askaris when injecting drugs in the last six months by study site (%)

Third National Behavioural Assessment of Key Populations in Kenya
4.6g Response to violence

The findings revealed that 56 percent of the YPWID who experienced violence in the six months preceding the study were assisted by the projects/interventions (Figure 162). More YPWID in Nairobi who experienced violence received support than in Mombasa (61 percent vs. 48 percent).

Figure 162. YPWID who were supported by the intervention/clinic/DIC after they experienced violence in the past six months by study site (%)

![Bar chart showing percentage of respondents supported by study site. All sites: 56%, Mombasa: 48%, Nairobi: 61%.]

BIOMEDICAL OUTCOMES

4.6h Experience of drug overdose

Drug overdose is a serious problem among the YPWID surveyed, with 43 percent having overdosed in the six months preceding the survey (Figure 163). Nairobi recorded the higher percentage of young people who experienced an overdose in the six months preceding the study, at 47 percent, compared to 38 percent in Mombasa.

Figure 163. YPWID who experienced a drug overdose in the last six months by study site (%)

![Bar chart showing percentage of participants who overdosed. All sites: 43%, Mombasa: 38%, Nairobi: 47%.]
4.6i Drug rehabilitation / treatment by year and county

Some 27 percent of YPWID reported that they had ever undergone drug rehabilitation/treatment, with Nairobi reporting the higher percentage, at 41 percent, compared to 10 percent in Mombasa (Figure 164).

Figure 164. YPWID who have undergone drug rehabilitation / treatment by study site (%)

<table>
<thead>
<tr>
<th>Percentage of respondents</th>
<th>Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All sites</td>
</tr>
<tr>
<td></td>
<td>27</td>
</tr>
</tbody>
</table>

4.6j Ever taken HIV test

In this survey, 93 percent of the YPWID had ever been tested for HIV, with only a slight difference between HIV testing rates in Nairobi (93 percent) and Mombasa (92 percent) (Figure 165).

Figure 165. YPWID who have taken an HIV test by study site (%)
4.6k HIV test in the past three months

The share of YPWID who reported that they had taken an HIV test in the three months preceding the study was 74 percent (Figure 166). Mombasa recorded a lower proportion, at 63 percent, compared to 83 percent in Nairobi.

**Figure 166. YPWID tested for HIV in the past three months by study site (%)**

<table>
<thead>
<tr>
<th>Sites</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sites</td>
<td>74</td>
</tr>
<tr>
<td>Mombasa</td>
<td>63</td>
</tr>
<tr>
<td>Nairobi</td>
<td>83</td>
</tr>
</tbody>
</table>

4.6l Reported HIV positivity

Of the YPWID respondents, 19 percent reported that they were living with HIV. YPWID in Nairobi reported the higher percentage, at 23 percent, compared to 13 percent in Mombasa (Figure 167).

**Figure 167. YPWID who reported that they are living with HIV by study site (%)**

<table>
<thead>
<tr>
<th>Sites</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sites</td>
<td>19</td>
</tr>
<tr>
<td>Mombasa</td>
<td>13</td>
</tr>
<tr>
<td>Nairobi</td>
<td>23</td>
</tr>
</tbody>
</table>
4.6m HIV care, treatment, and missed appointment with the ART clinic

The findings showed that 78 percent of YPWID living with HIV had registered in an HIV care and treatment programme, with 100 percent linkage in Mombasa compared to 69 percent in Nairobi (Figure 168). Overall, 65 percent of YPWID living with HIV were on ART, with Mombasa recording the higher percentage, at 71 percent, compared to 63 percent in Nairobi. However, 100 percent of respondents who were on ART in Mombasa and 60 percent of respondents on ART in Nairobi had missed an ART clinic appointment and 30 days had passed since their last appointment, indicating very low adherence (Figure 169).

Figure 168. YPWID living with HIV who have ever enrolled in HIV care and treatment, and YPWID living with HIV who are taking ART by study site (%)

Figure 169. YPWID on ART who have missed an ART clinic appointment and gone over 30 days without an appointment by study site (%)

Third National Behavioural Assessment of Key Populations in Kenya
4.6n Sexually transmitted infections

During the survey, STI signs and symptoms were read aloud and the respondents were asked if they were presently experiencing any of the signs or symptoms. The responses revealed that 13 percent of YPWID were currently experiencing STI symptoms, with Mombasa County recording a higher percentage, at 18 percent, compared to 8 percent in Nairobi (Figure 170).

**Figure 170. YPWID currently experiencing an STI symptom by study site (%)**

![Bar chart showing percentage of respondents experiencing STI symptoms by study site. Mombasa has 18%, Nairobi has 8%, and all sites have 13%.]

4.6o STI diagnosis and treatment

Overall, 35 percent of YPWID were diagnosed with an STI in the preceding three months, with Mombasa recording the higher proportion diagnosed, at 38 percent, compared to 30 percent in Nairobi (Figure 171).

**Figure 171. YPWID diagnosed with an STI in the last three months by study site (%)**

![Bar chart showing percentage of respondents diagnosed with an STI by study site. Mombasa has 38%, Nairobi has 30%, and all sites have 35%.]
In the three months preceding the survey, 37 percent of YPWID diagnosed with an STI received treatment (Figure 172). A higher proportion of YPWID received treatment in Nairobi (40 percent) than in Mombasa (33 percent).

**Figure 172. YPWID with an STI who received treatment in the last three months by study site (%)**

<table>
<thead>
<tr>
<th>Sites</th>
<th>All sites</th>
<th>Mombasa</th>
<th>Nairobi</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>37</td>
<td>33</td>
<td>40</td>
</tr>
</tbody>
</table>

**4.6p Visit to a DIC/intervention/clinic**

In the three months preceding the survey, 67 percent of the YPWID visited or received services from a clinic, intervention site, or DIC (Figure 173). More YPWID in Nairobi (74 percent) than in Mombasa (59 percent) visited or received services from a clinic, intervention site, or DIC in the three months preceding the survey.

**Figure 173. YPWID who visited or received services from the intervention/ clinic/DIC in the last three months by study site (%)**

<table>
<thead>
<tr>
<th>Sites</th>
<th>All sites</th>
<th>Mombasa</th>
<th>Nairobi</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>67</td>
<td>59</td>
<td>74</td>
</tr>
</tbody>
</table>
5

PROGRAMME IMPLICATIONS
Recommendations based on analysis of the PBS III findings are categorized under the following thematic areas:

- Programmatic
- Policy

5.1 Programmatic Implications

- **Condom use**
  Condom use with paying partners improved or plateaued across all key population types. However, condom accessibility among PWID needs improvement. The PWID programmes need to make more effort in providing condoms to PWID and to YPWID as per the need.

- **Needle and syringe programme**
  More PWID are able to obtain clean needles when needed, with Kisumu and Mombasa showing significant gains in needle accessibility. Needle sharing has decreased, but a worrying trend is evident in Nairobi County, which seemed to be doing well in the past. Increases in FSWs having injected in the past three months point to a need to integrate harm reduction services within FSW programming.

- **Exposure to programmes /mobilization**
  Significant increases have occurred in the proportions of FSWs and MSM being contacted by peer educators and using programme services. However, more needs to be done to ensure that the majority of the key populations are mobilized to DICs, where they can receive comprehensive care.

- **Violence**
  Most of the counties have plateaued in the overall prevalence of cases of violence by law enforcers and of sexual violence. However, it is worrying that violence is not reducing. It is even more worrying that only 50 percent of the respondents who experienced violence received assistance or support. This indicates that only half of the programmes had response mechanisms. Violence has a direct impact on service access and utilization. Programmes need to invest in providing strategies to cope with violence to improve service uptake.

- **Regular partnerships**
  The overall findings across the key population types indicate a need to focus more on the regular, non-paying partners. More than half of all MSM and FSWs have a regular, non-paying partner. Many do not always use condoms with those partners. This is therefore a constant risk amid all the interventions. Programmes should focus on prevention interventions for the regular, non-paying partners, including PrEP for the negatives, promotion of self-testing for partners, and other partner-driven interventions.

- **Overlapping risks**
  Results also show that there is risk of transmitting HIV beyond the main risk of each subtype; MSM reported sexual relationships with women, FSWs have contact with their clients and with non-paying partners, and PWID have sexual relationships. Additionally,
some MSM and sex workers inject drugs, and some drug users engage in sex work. Therefore, the national HIV response should consider tailored programmes and services as part of an overall comprehensive response and allocate resources accordingly.

• **Appropriate targeting by age**
  This round of PBS is the first to bring out issues related to access of HIV services for at-risk young persons, which are similar to the issues faced by all young persons. Programmes need to be tailored to the young key populations—especially for YMSM, young people who sell sex, and YPWID—as a priority.

• **Gender inequity in risk and response**
  Gender inequity in relation to risky practices, behaviour, and responses are of concern in this round of PBS. Female PWID are disproportionately more predisposed to a myriad of risky behaviours, ranging from individual risk behaviours to access of services: condom use with regular partners is low, condom bursts are a risk, condom availability is uneven, higher HIV, STI and hepatitis positivity, and higher sexual violence. Men on the other hand experience more police violence. Programmes need to be tailored towards being gender sensitive, based on the type of gender with increased vulnerabilities.

• **Transition in injecting behaviour**
  PBS III findings point to the need to start prevention programmes early, before risk happens. As YPWID start sharing needles early their cumulative risk for HIV is higher. Therefore, programmes should make deliberate efforts to target YPWID to reduce the transition from smoking to injecting drugs, which is a riskier practice.

• **Hepatitis**
  PBS III specifically explored self-reported screening and treatment of viral hepatitis and found that PWID are slowly getting aware of hepatitis and are seeking treatment. However, the availability of treatment needs to be scaled up.

• **Drug overdose**
  Drug overdose still remains a challenge, especially among the YPWID. More efforts need to be employed to create awareness among this population and to scale up the community naloxazone programme.

• **Continuum of care**
  While registration in treatment across programmes seems to be improving, more strategies need to be employed to improve testing and linkage to care, including test and treat. The programmes are still registering low numbers of HIV positive key populations in treatment programmes. More than a third of the key populations had missed an appointment in the last 30 days, depicting poor retention/adherence. Programmes need to deliberately define strategies that will ensure that more are registered to care and treatment and that adequate follow-up is done to retain them in treatment.
5.2 Policy Implications

Based on the gaps identified, the following guidance documents and SOPs are proposed for development to support programming:

• Guidelines for young key populations
  The findings from PBS III show that YFSWs, YMSM, and YPWID have specific vulnerabilities that need special programming. The current national key population guidelines focus only on adults (18 years and above) and hence do not provide guidance for working with young key populations. The PBS III results clearly bring out the need to develop policy guidelines to work with young key populations. This is in line with Kenya’s Fast-Track Plan to End HIV and AIDS among Adolescents and Young People, which prioritizes young key populations.

• SOPs for linkage to HIV care, retention, and adherence
  The PBS III results show that ART adherence is a challenge that needs to be addressed. While HIV testing is high, linkage to ART and adherence are low. Implementing partners who provide ART seem to be linking key populations well, and are following up consistently. However, implementing partners who refer key populations to ART centres—either government or private—seem to do poor follow up. To ensure adherence, NASCOP needs to develop a standard operating procedure that gives the Key Populations Programme specific standards for linkage to ART and for follow up. The Key Populations Programme needs to take responsibility for ensuring that HIV positive key populations get treatment and adhere to it, whether the programme offers ART service or not.
6

LIMITATIONS
Polling booth methodology has certain limitations. This is a group interview process, hence the response cannot be linked with an individual's characteristics. Though we have tried to address this by stratifying participants into sites, age and gender, limitation still exists. The method offers only binary responses (yes/no), hence we get limited information. Unlike face-to-face interviews, only a limited number of questions can be asked in a PBS, as more questions tend to produce biased results.