
PRIORITISATION OF KEY POPULATIONS IN KENYA

AN EVIDENCE NOTE

INTRODUCTION

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 2012, there were approximately 1.2 million people living with HIV.¹ There is a mixed and geographically heterogeneous HIV epidemic with an estimated adult HIV prevalence of 5.6% percent.² National estimates and modelling indicate that 51% of new adult infections occur in eight of the 47 counties in Kenya. Within counties, there are important variations in HIV burden, with the epidemic concentrated among certain populations³. 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 has a more concentrated epidemic among key populations who are considered to be at a heightened risk of HIV acquisition and transmission. In Kenya, these key populations include female sex workers (FSW), male sex workers (MSW), men who have sex with men (MSM) and people who inject drugs (PWID).⁴ 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 at greater risk of HIV.

Interventions for key population groups have already been initiated in many counties with funding support from PEPFAR and Global Fund since the prioritization of key populations in Kenya National AIDS Strategic Plan III. NACC and NASCOP have developed few guidelines and strategy documents to clearly define the country's position and plan to work with the key populations⁵. 81 interventions with key populations spread over 28 counties report to NASCOP on a regular basis. However the need is to expand interventions to unreached locations and improve the existing programs to meet unmet needs and ensure that all members of key populations are able to access a full range of services in their area⁶. NACC and NASCOP have recently defined the Kenya HIV prevention revolution road map stressing the need to do geographic prioritization and population driven intervention with special focus on key population among other priority populations⁷.

This evidence brief reiterates the importance of these key populations to Kenya's HIV epidemic and illustrates the need to continue support and prioritize services targeting these populations.

HIGHER HIV INCIDENCE AND PREVALENCE AMONG KEY POPULATION

According to the Kenya HIV Prevention Responses and Modes of Transmission Analysis (2008) conducted by NACC, 14.1 percent of the new infections were attributed to sex workers and clients; 15.2 per cent of new infections were attributed to men who have sex with men and prison populations; while 3.8 per cent were attributed to people who inject drug. This adds up to approximately 33% of all new infections in the country that is attributed to key populations. A meta analysis conducted by Baral et al found that the HIV prevalence

¹ KIAS preliminary report, 2012c.

² KIAS preliminary report 2012

³ County HIV profiles, NACC and NASCOP, 2012

⁴ *The Kenya National AIDS Strategic Plan III (KNASP)*, 2009/10 to 2012/13.

⁵ <http://nascop.or.ke/marps/marps-guidelines.php>.

⁶ NASCOP TWG meeting, Mombasa, February 2014

⁷ Kenya HIV Prevention revolution road map- countdown to 2030, NACC and NASCOP 2013

among FSWs in Kenya was around 6 times more than adult women in general population (45% vs 7.7%)⁸. In a meta-analysis of HIV prevalence among MSM and adults of reproductive age, Baral and his team found that HIV prevalence among MSM in Kenya is higher (11%) compared to adults of reproductive age in the country (7%).⁹ In 2007 in Mombasa, HIV prevalence among MSMs/MSWs with exclusively male partners was 41 per cent.¹⁰ KIAS 2007 revealed that the overall HIV prevalence in Nairobi among MSMs was 18.2 per cent; FSWs was 29.3 per cent and PWID was 18.7 per cent.¹¹ When further disaggregated by sex, it was established that 49 percent of female injecting drug users (FIDUs) were HIV positive while only 16 percent of male injecting drug users (MIDUs) were HIV positive. A recent rapid situational analysis (RSA) of PWID in Nairobi and Coast provinces highlighted the high HIV prevalence among PWID ranging from 17 percent to 47 percent among male and female PWID, respectively (UNODC 2012).

More recently in a Nairobi based prospective cohort study with MSM conducted during 2009-12, the baseline HIV prevalence was 40%. HIV incidence was found to be 10.9 per 100 person-years (95% CI 7.4 to 15.6)¹². In another recent study it was found that HIV-1 incidence is very high among MSM in coastal Kenya. The study revealed that overall HIV-1 incidence in 449 men was 8.6 [95% confidence interval (CI) 6.7-11.0] per 100 person-years. Incidence was 5.8 (95% CI 4.2-7.9) per 100 person-years among men who reported sex with men and women, and 35.2 (95% CI 23.8-52.1) per 100 person-years among men who have sex with men exclusively¹³.

This clearly shows that key populations are at higher risk of acquiring and transmitting HIV and hence continue to be a key group for HIV prevention interventions.

ESTIMATES OF KEY POPULATIONS

Kenya has large populations of sex workers, MSM, and PWID. These populations have many connections to the general population, including sexual and drug injecting relationships which act to bridge HIV transmission between key populations and members of the general population.

The recent mapping estimates show that there are 133,675 female sex workers 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 men who have sex with men and/or male sex workers and 18,327 people who inject drugs¹⁴ in Kenya. In some cities the percentage of FSW is as high as 15% of the adult female population. Counties with a high HIV prevalence tend to have higher number of sex workers. The 8 counties identified as high priority counties in the HIV prevention revolution road map of NACC and NASCOP¹⁵ has 40% of the FSW population.

OTHER RISKS AND VULNERABILITIES FACED BY KEY POPULATION

While female sex workers in Kenya form a diverse group, they tend to have a large number of (often concurrent) sexual partners, have many sex acts, and infrequently use condoms. Client estimates are limited but the Kenya Demographic Health Survey of 2003 estimated that 15 per cent of sexually active Kenyan men

⁸ Baral, S et al, Burden of HIV Among Female Sex workers in Low-Income and Middle-Income Countries: A Systematic Review and Meta-Analysis. 2012. The Lancet.

⁹ Baral et al, Elevated Risk for HIV Infection among Men Who Have Sex with Men in Low- and Middle-Income Countries 2000–2006: A Systematic Review. Plos , 2007

¹⁰ Sanders EJ, Okuku HS, Smith AD, Mwangome M, Wahome E, Fegan G, Peshu N, van der Elst EM, Price MA, McClelland RS, Graham SM. High HIV-1 incidence, correlates of HIV-1 acquisition, and high viral loads following seroconversion among MSM. AIDS. 2013 Jan 28;27(3):437-46.

¹¹ KAIS, 2007.

¹² McKinnon LR et al, High HIV risk in a cohort of male sex workers from Nairobi, Kenya, Sex Transm Infect 2013, Dec 13

¹³ Sanders EJ et al, High HIV 1 incidence, correlates of HIV -1 acquisition and high viral loads following sero conversion among MSM, AIDS 2013, January 14

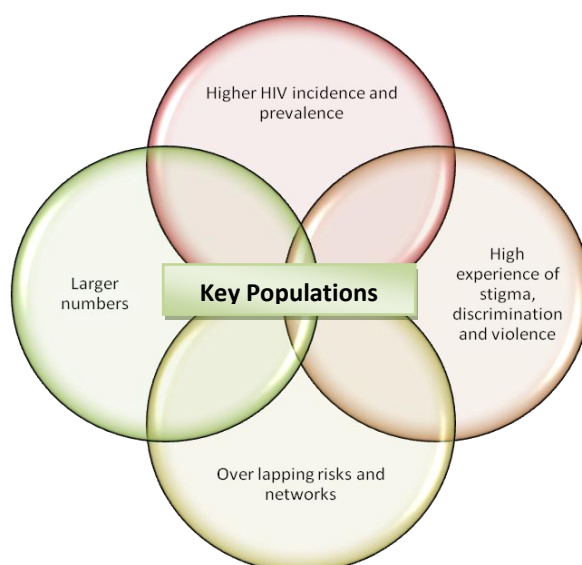
¹⁴ NASCOP mapping estimates, 2013

¹⁵ Kenya HIV prevention revolution road map – countdown to 2030, NACC and NASCOP 2013

aged between 15 and 49 years have sex with sex workers¹⁶. 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 condom¹⁷. In addition, physical and sexual violence against sex workers is high and high number of them also experience arrests by law enforcements and askaris¹⁸. It has been established now that priority interventions (peer – mediated condom promotion, risk reduction, counseling and skills building for safer sex, screening for STI and syndromic treatment) among sex workers have been effective¹⁹ and this is therefore a strategic recommendation for Kenya's HIV prevention strategy²⁰.

Sanders E et al found that HIV-1 incidence is very high among MSM in coastal Kenya, and many sero converters maintain high plasma viral loads for up to 2 years after infection²¹. Sexual and physical abuse is high among MSW (17% in Nairobi and 27% in Mombasa) and 23% of MSW have been beaten or arrested by law enforcement and/ or askaris in Nairobi and Mombasa²². The 2012 surveillance data also shows that nearly 40 per cent of all MSMs have ever been married to women and 13 per cent of all MSMs were currently married. Thus, the sexual networks of MSMs also extend into the general population.

Despite the criminalization of illegal drugs, injecting frequency was daily for approximately 80 percent of the PWID population, 75 percent reporting at least two injections per day (Geibel et al. 2011), and needles were reused approximately five times prior to disposal (Tun, Okal et al. 2011). Risky sexual behavior related to PWID in Kenya cannot be overlooked. Forty percent of the PWID population surveyed in Nairobi was sexually active in the month prior to survey, with 30 percent reporting unprotected sex acts. Approximately 30 percent of PWID reported more than one sexual partner in the last year (Geibel et al. 2011). High-risk sexual practices were common with 20 percent reporting transactional sex, and only 40 percent reporting condom use during sex (UNODC 2012).



¹⁶ Kenya National Bureau of Statistics (2003). *Kenya Democratic Health Survey 2003*.

¹⁷ Documenting Human Rights Violations of Sex Workers in Kenya, op cit.

¹⁸ Polling Booth Survey Report, NASCOP 2013

¹⁹ Chersich MF et al, Journal of the International AIDS Society 2013

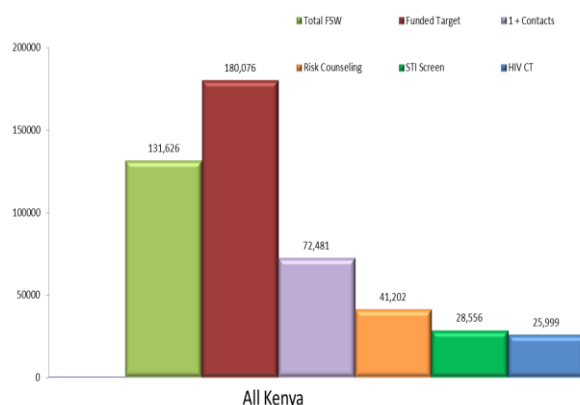
²⁰ Kenya AIDS Epidemic Update 2012, op cit.

²¹ Sanders EJ et al, High HIV 1 incidence, correlates of HIV -1 acquisition and high viral loads following sero conversion among MSM, AIDS 2013, January 14

²² NASCOP Learning Sites Polling Booth Survey results, 2013

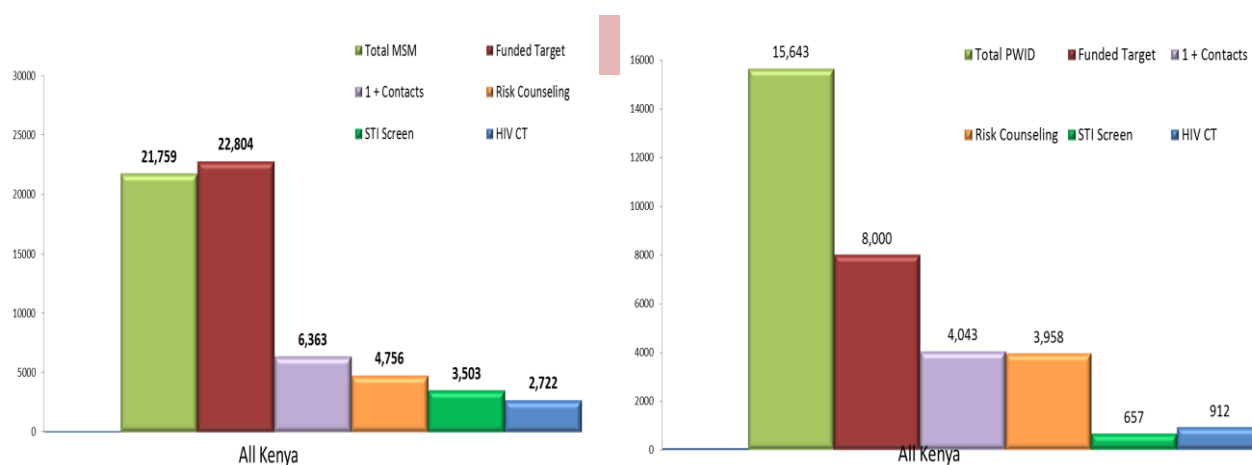
PROGRAMME COVERAGE

HIV prevention in Kenya is premised on application of evidence based interventions to achieve set targets and goals as outlined in the national strategic plans. Over the years the country has invested in interventions to reduce sexual transmission of HIV among key groups including sex workers, men who have sex with men and people who inject drugs. A mapping study was conducted by NASCOP in 2012 to estimate the number of key populations to scale up interventions. Interventions targeting key populations have been difficult to mount, given existence of societal denial and social intolerance to these populations; and criminalization of their behaviours e.g., same sex relations, sex work or drug use.



However as this population was prioritized in KNASP III, the programme with key populations have been scaled up since 2009/10. Along with PEPFAR funding, the country has also received funding from GFATM to scale up these interventions. Programme data that is regularly collected by NASCOP from 81 interventions to assess progress in coverage and service provision show that while funding support to cover the estimated population has been achieved, the focus is now in improving the quality of key population programmes through establishment of a technical support unit within NACC and NASCOP to support this objective.

The figures shows that in the last quarter (January – March 2014) 55% of the estimated female sex workers, 30% of the MSM/ MSW and 50% of the PWID were contacted to reach through programmes²³.



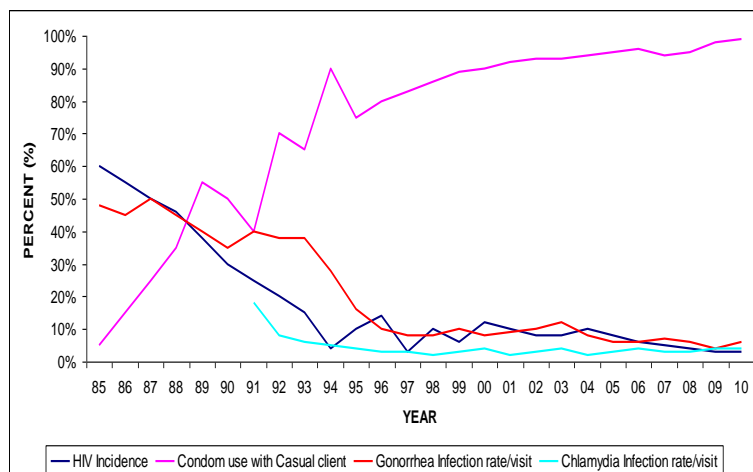
²³ Presentation in the TWG, NASCOP, November 2013

EFFECTIVENESS OF KEY POPULATION INTERVENTIONS

EVALUATION RESULTS OF EXISTING SEX WORKER INTERVENTIONS

The HIV prevention interventions targeting sex workers have been evaluated in varying ways. Data from some of the key programmes in Kenya are very optimistic.

University of Manitoba's twenty five years of work with sex workers in the Majengo Clinic, Nairobi show

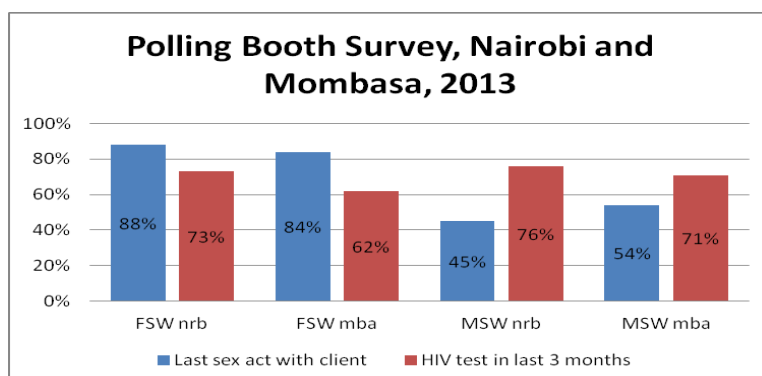


increase in self reported condom use and reduction in HIV incidence and STI. However evidence collected in 2007 suggested that only a quarter of sex workers were being reached by the programmes and hence the university expanded its Sex Workers Outreach Programme (SWOP) to 9 other locations to improve access to services for both male and female sex workers. The clinic in the central business district is now witnessing decline in HIV prevalence among FSW and MSW clinic attendees (35% HIV prevalence among FSW in 2008 to

24.8% in 2012 and 42% HIV prevalence among MSW in 2008 to 32.5 in 2012).²⁴

The International Center for Reproductive Health in partnership with the Population Council also completed an evaluation of a multilevel intervention targeting male sex workers in Mombasa. Starting with the opening of a drop-in center for men who have sex with men in Mombasa, ICRH then trained 40 peer educators in HIV prevention in 2007. These peer educators also received information about harm reduction in the context of alcohol and drugs. In addition, there was a significant effort to distribute condoms and water-based lubricants to sex workers. In total, over 100,000 condoms and 8,000 sachets of water-based lubricants were distributed. The intervention also targeted the health sector with 20 service providers receiving sensitization training as well as clinical training on the specific needs of men who have sex with men including anal STIs. This study demonstrated significant increases in the knowledge and use of condoms and lubricants. In addition, there were significant increases in the uptake of HCT and the use of male sex worker-friendly clinical services. This study also demonstrated that in bivariate analyses, consistent condom use among male sex workers was significantly associated with exposure to peer educators, the use of men who have sex with men-friendly drop-in centers, and ever having been counselled or tested for HIV (Angala, Parkinson et al.; Horizons 2006).

The Pooling Booth Surveys conducted in Nairobi and Mombasa among sex workers to measure outcomes show high condom use in last sex and high HIV testing in last 3 months²⁵. This is very optimistic keeping in mind that these are key outcome indicators of successful HIV prevention programmes among sex workers.



²⁴ Joshua Kimani, Presentation slides, 2013

²⁵ Polling Booth Survey, NASCOP 2013

NEED FOR TARGETED APPROACH TO HIV PREVENTION - MODELLING ANALYSIS

A study conducted by Imperial College used dynamic mathematical models to examine how two different approaches to resource allocation for HIV prevention generate reductions in the rate of new HIV infections in Kenya²⁶. The first approach modeled involved uniform rollout of interventions across Kenya and the second approach was to focus interventions on key geographic areas and key populations that contribute to HIV strongholds. The models incorporated the demographic, behavioural, and programme differences across sub national units and estimated the number of new infections over the next fifteen years with interventions provided to different population groups according to their risk behaviours or their geographic areas. The risk behaviours of interest included selling and buying sex, casual sex, and men having sex with men. The interventions modeled included male circumcision, behaviour change communication, early antiretroviral therapy, and pre-exposure prophylaxis.

The results of this study indicate that combination HIV prevention could reduce the number of new HIV infections by more than half over the next fifteen years. Using a targeted approach, focusing on high HIV burdened counties and key populations an additional 16% of HIV infections could be averted, leading to half as many new infections occurring each year compared to the uniform approach. This difference is greatest when budgets are limited and when costs are high, and could lead to as many as 55% of HIV infections being averted over fifteen years.

In recent years there has been a large expansion in provision of HIV and STI prevention services for Female Sex Workers (FSWs) in Nairobi. Condom promotion has been a mainstay of these prevention efforts. Currently, self-reported levels of condom use are high among FSWs accessing services provided by the Sex Worker Outreach Programme (SWOP) in Nairobi. A mathematical model was developed to represent sexual HIV transmission among the adult population of Nairobi. The scale-up of prevention interventions (male circumcision and condom promotion) and treatment provision as have occurred in Nairobi were represented in the model. A detailed representation of sex work was included in the model, guided by data from the Sex Worker Outreach Programme in Nairobi. FSW prevalence estimates over a 30 year period and recent incidence estimates were used to calibrate the model. In addition, increasing levels of condom use over time among FSW was represented. Assuming that condom use decreases from 75% to 10% over a ten year period, 2014-2024 (Figure 1A), HIV incidence would be projected to increase from 4% (in 2014) to 14% (by 2024) and continue increasing thereafter (Figure 1B). The conclusion was that high levels of condom use among FSW are likely to be 'suppressing' incidence and need to be maintained²⁷.

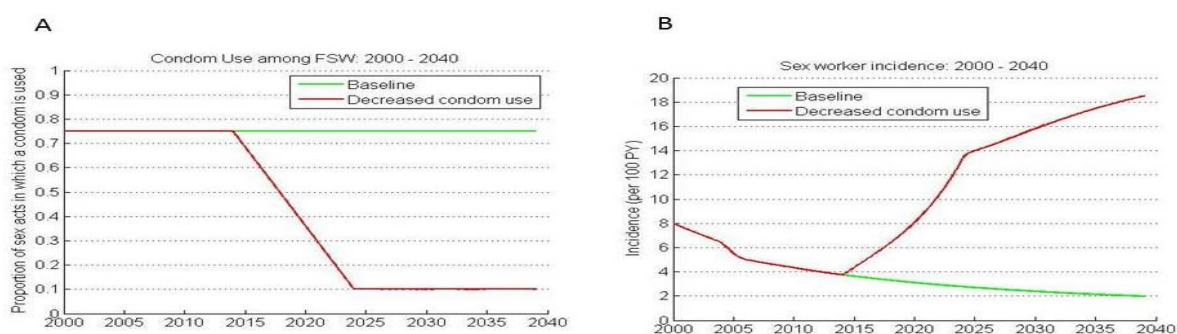
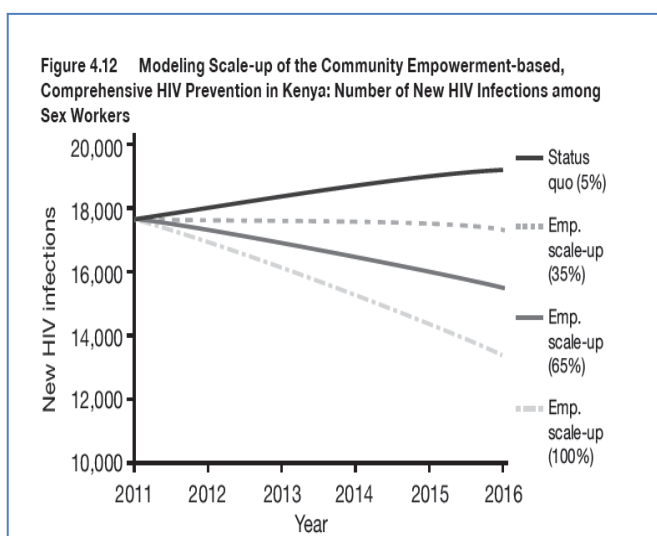


Figure 1. Projected influence of reduced condom use on incidence among FSW in Nairobi.

²⁶ Anderson S, Cherutich P, Kilonzo N, Cremin I, Fecht D, Kimanga D, Harper M, Masha RL, Bahati P, Maina W, Dybul M, Hallett TB. Enhancing the Efficiency and the Effectiveness of the AIDS Response with Priority Areas for Prevention. (In Review, 2014)

²⁷ Dr. Ide Crimin, presentation on modelling the impact and cost-effectiveness of PrEP in Nairobi, University of Manitoba and Nairobi Annual meeting, January 2014

INFECTIONS AVERTED DUE TO SCALED UP KEY POPULATION INTERVENTIONS – MODELLING ANALYSIS

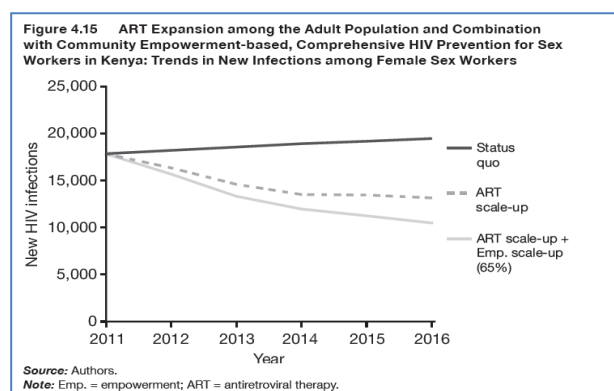


Modelling exercises conducted by Deanna Kerrigan et al depict the current HIV epidemic in Kenya and are further utilised to estimate the number of new HIV infections among sex workers and the adult population with and without the effective interventions and delivered at different levels of coverage and independently or in combination. The figure 4.12 presents the number and trends of new HIV infections among female sex workers in Kenya when the community empowerment-based, comprehensive HIV prevention²⁸ is brought to scale from a baseline coverage level of 5% to 35%, 65%, and 100% by 2016. A total of **17,000 new** infections may be averted between 2012 and 2016 among female sex workers when the intervention reaches a maximum, 100% coverage, compared to the

status quo (18% reduction).

Sex workers have endured a high burden of HIV infection in and across HIV epidemics. Meta-analysis of community empowerment interventions for HIV prevention among female sex workers suggests a potential 51% reduction in inconsistent condom use. Andrea Wirtz et al used a deterministic model, Goals, to project the impact on HIV infections when the community empowerment interventions were scaled up among female sex workers in Kenya, Thailand, Brazil, and Ukraine. Modelling scenarios included expansion of the comprehensive community empowerment-based HIV prevention intervention from baseline coverage over a 5-year period (5–65% in Kenya and Ukraine; 10–70% in Thailand and Brazil), while other interventions were held at baseline levels. A second exercise increased the intervention coverage simultaneously with equitable access to ART for sex workers. Impacts on HIV outcomes among sex workers and adults are observed from 2012–2016 and, compared to status quo when all interventions are held constant. This exercise demonstrated a range of impacts on HIV: 10,800 infections in Kenya were averted in 5 years among female sex workers. Impacts of the intervention for female sex workers extend to the adult population, cumulatively averting 20,700 adult infections in Kenya²⁹.

The figure 4.15 presents the number of new HIV infections and trends of these infections among female sex workers in Kenya when ART is expanded among eligible adults, according to national estimates, by 2016. More than 23,200 new infections among female sex workers may be averted between 2012 and 2016 when ART expands among the adult population, compared to the status quo. This represents a 25% reduction in new infections among female sex workers. With the addition of the community empowerment-based,



²⁸ This approach to HIV prevention includes sex worker organization, mobilization, and collective action to address social and structural factors related to sex worker rights, health and HIV risk. It also considers more traditional programmatic elements, including community-led peer education, condom distribution, and STI/ HIV screening and treatment.

²⁹ Andrea L Wirtz et al, Epidemic impacts of a community empowerment intervention for HIV prevention among female sex workers in generalised and concentrated epidemics, PLoS ONE 9(2): e88047. doi:10.1371/journal.pone.0088047

comprehensive HIV prevention, a total of 31,200 new infections may be averted, resulting in a 33% reduction in new infections between 2012 and 2016. In the presence of ART expansion, the community empowerment-based, comprehensive HIV prevention averts an additional 8,000 infections among female sex workers during this time period.

Kerrigan et al summarise that

- Impact of community empowerment among sex workers is greatest in countries where the prevalence and incidence of HIV is high among female sex workers, their clients and adults generally.
- Combined expansion of ART and the community empowerment intervention may avert 16 to 40% of new infections among female sex workers across these epidemics, using a model of equal access to HIV testing and treatment services.
- An expansion of ART for all adult risk groups is expected to significantly reduce transmission of HIV. The empowerment intervention could help enable ART expansion among sex workers through a community-based outreach and mobilization approach.

MODELLING ANALYSIS FOR PEOPLE WHO INJECT DRUGS

A modelling analysis conducted by Arin Dutta and his team assessed the impact of HIV prevention programs for people who inject drugs. They used data from three sources: RSA study in PWID in Nairobi and Coast provinces, baseline assessment and size estimation of key high-risk groups in Nairobi, and estimates from the National AIDS and STI Control Program (NASCOP)³⁰.

Two scenarios were created for modelling. The Status Quo scenario assumes prevention programs are not scaled up. Baseline scenario allows for increasing coverage of ART among the adult population, as per the national strategy and it assumes that PWID in need of ART have equi-proportionate access to ART. The other key interventions (NSP, MAT, and HCT for PWID) remain at their current levels, per program documentation. The expansion scenarios represent a case in which programs are extended from their current levels to reach 20 percent of PWID with NSP, MAT, and HCT among PWID. Given that programs are just beginning in Kenya, they chose targets from the “Low” range of the technical guide. The scale-up of MAT was assumed to increase from 1 percent to 20 percent of the total population of opioid-dependent PWID.

The team concluded that with no increase in the services being offered to PWID, Kenya could expect to continue to see an increase in new infections during this time period (i.e., the Status Quo). Offering access to ART as that intervention is expanded among adults should change the trajectory of the epidemic among PWID (Baseline). The comparison of Status Quo to Baseline reveals that proportionate access helps to avert approximately 900 new HIV infections in Kenyan PWID between 2012 and 2015. Expanding highly effective PWID services in combination with ART could avert over 2,000 new infections among PWID between 2012 and 2015, a 56 percent reduction compared to a Status Quo scenario.

The team also concluded that compared to the current situation of low to absent coverage, a combination package of harm reduction interventions implemented at high effectiveness is very cost-effective (ICER of US\$1,600). This is the real consideration for Kenya at this point when it attempts to address the complex needs among PWID, including non-HIV health risks such as overdose and psychosocial conditions.

³⁰ Arin Dutta et al, The global HIV epidemic among people who inject drugs, 2013, The World bank

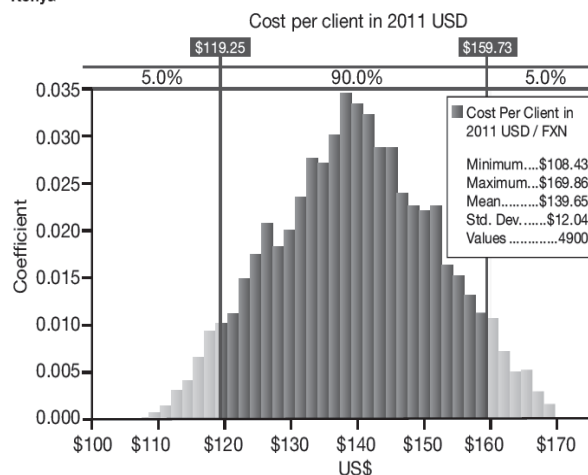
COST EFFECTIVENESS

The modelling exercise also estimated the cost-effectiveness of implementation and expansion of the community empowerment-based comprehensive HIV prevention intervention for sex workers described earlier in the modelling section. The potential impact of the empowerment intervention was explored in Kenya in two scenarios: 1) assuming static provision of ART programs at current levels; and 2) in the context of large-scale expansion of ART delivery. These analyses are intended to assist identifying optimal allocation of HIV prevention funds.

In Kenya the gross annual total program costs to reach 1,000 participants is estimated to be \$139,635 with **cost per participant of \$140**. For Kenya (Figure 5.4) when all parameters are set at their lowest (least expensive) value, the minimum cost per participant was \$108. The highest value for cost per participant was \$170. The average and most likely result was \$140 per participant.³¹

The cost per participants is either comparable or much lower than average cost per client for services like HTC (\$18 – \$501), PMTCT (\$57 – \$2164) and VMMC (\$73)³².

Figure 5.4 Distribution of Cost per Participant across Model Iterations—Kenya



Source: Authors.
Note: Std. dev. = standard deviation; FXN = function.

CONCLUSION

Reducing the transmission of HIV in the context of key population is a public health imperative due to the strategic importance of interrupting transmission to and from these subpopulations as a means of controlling STD and HIV epidemics more broadly in the country. In addition from a human rights framework, the country also has the obligation to protect and promote the health of key populations, particularly those who are marginalized and have low personal agency under the provisions of various relevant international human rights instruments to which Kenya is a party to and therefore form a part of the country's legal system by virtue of Article 2(6) of the Constitution of Kenya. Last but not least the provisions of Article 43(1)(a) of the Constitution of Kenya which states that every citizen has the right to the highest attainable standard of health, which includes the right to health care services including reproductive health care obliges Kenya to also ensure that key populations are adequately reached with quality programmes and services.

³¹ Deanna Kerrigan et al, The Global HIV epidemics among sex workers, The World Bank, 2012

³² OPHIEA presentation to NACC, November 2013