

## Opportunities for targeted HIV prevention in Kenya

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In 2007, an estimated 2.5 million persons became newly infected with HIV, most of these infections occurred in sub-Saharan Africa. Sub-populations that play an important role in fuelling the epidemic have been identified, and are among the most marginalized and discriminated people in society. Their behaviours put them at increased risk of becoming infected with HIV as well as spreading HIV to the population at large. Vulnerable groups include, but are not limited to, sex workers, men who have sex with men, migrant workers, uniformed services, victims of rape and sexual violence, intravenous drug users and discordant couples. Targeting these groups remains a key strategy for preventing HIV in both concentrated and generalized HIV epidemics. Currently, a better understanding is needed of the priorities in HIV prevention among these key populations to more effectively develop and implement targeted interventions.

This work aimed (i) to identify factors associated with unprotected sex among female sex workers, men who sell sex to men, and discordant couples, and (ii) to assess the safety, acceptability and effectiveness of HIV prevention strategies among female sex workers. The geographical focus of the research was Mombasa District in Kenya, a country with an estimated HIV prevalence of 7.8% among adults aged 15-49 years.

### Prevention among male and female sex workers

It was observed that thirty-five percent of men who sell sex to men in Mombasa did not know HIV can be transmitted via anal sex. Together with knowledge of HIV status this was a significant predictor of unprotected anal sex. The studies also showed that frequency and pattern of alcohol use was strongly associated with unprotected sex among both men who sell sex to men and female sex workers. Targeted interventions assisting sex workers to adopt safer drinking patterns could contribute significantly to HIV prevention.

The research evaluated peer-mediated interventions among sex workers that promote behavioural change through improving knowledge, attitudes and awareness of HIV serostatus, and aim to prevent HIV and other sexually transmitted infections (STI) by facilitating early STI treatment. Attendance of peer-mediated interventions was associated with an increase in protected sex. The impact of the female condom was assessed in a separate study among female sex workers and showed to have some potential for reducing unprotected sex. Given its high cost, and the marginal improvements seen here, there is limited use among populations that are already successfully using the male condom.

However, new female condom technologies and large-scale promotion and implementation in the general population could significantly reduce the cost of the female condom and provide women with a proven effective HIV prevention method.

### **Prevention among HIV infected individuals receiving antiretroviral treatment**

Among HIV infected individuals, roll-out of antiretroviral treatment (ART) raises concerns about the potential for unprotected sex: sexual activity could increase with well-being, and also when beliefs exist about reduced risk for HIV transmission with ART. In our study, unprotected sex with an HIV-negative or unknown status partner was reported by half of sexually active participants starting ART, and although no increase in risky sexual behaviour was observed after 12 months of treatment, a considerable portion did not practice safe sex. In this group, the main predictors of unsafe sex included non-disclosure of HIV status to partner; recent HIV diagnosis; perceived and experienced stigma; and signs of depression.

In conclusion, in a generalized epidemic such as in Kenya, it is important that prevention efforts are directed to the general population, but programmes for key populations, including male and female sex workers, men who have sex with men and HIV positive persons remain important. This thesis emphasises that prevention programmes should be targeted to specific populations and entail a combination prevention package of behavioural, structural and biomedical approaches.

Data supports the effectiveness of interventions which address the conditions and context of sex work, including targeted condom promotion and distribution with appropriate lubricants; specifically tailored voluntary counselling testing services; alcohol harm reduction; STI/HIV education and treatment; and skills development (such as disclosure and condom negotiation). Among men who sell sex to men, targeted interventions also focusing on anal transmission is strongly recommended. Interventions assisting persons living with HIV to adopt safer sexual behaviour and disclose the status to sexual partners will contribute to prevention of further HIV transmission. Increasing access to ART, care and support for all people living with HIV, including quality STI treatment will improve quality of life and reduce HIV infectiousness. New biomedical prevention technologies such as new female condom, diaphragm, pre-exposure prophylaxis, microbicides, and vaccines are under development and, it is anticipated, will soon add to the highly active HIV prevention packages for most-at risk populations.