

THE INJECTING DRUG USE AND HIV/AIDS NEXUS IN THE REPUBLIC OF MAURITIUS

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ABSTRACT

Mauritius has the highest per capita injection drug use in Africa and, in the last 6 years, injection drug use has become the main mode of HIV transmission. To report on the drug use, high risk injection practices, and high risk sexual behaviour among imprisoned injection drug users (IDUs), sex-worker IDUs, and non-prisoner, non-sex worker IDUs, we drew data and findings from a 2004 rapid assessment of drug use in Mauritius, and from the Mauritius Epidemiological Network on Drug Use, the AIDS Unit at Ministry of Health; and the Mauritius Prison Service. The findings showed that there are an estimated 17,000-18,000 IDUs in Mauritius of whom 4,800 are commercial sex workers and 2,871 are prisoners. Prevalence of needle sharing among IDUs is estimated at 25-50%, and 75-90% of IDUs report using condoms "seldom" or "never." Mauritius is facing a serious concentrated HIV epidemic among IDUs. The Mauritius government, through bilateral and multi-lateral collaboration, is making considerable progress in providing comprehensive services for people living with HIV/AIDS. Strengthening prevention interventions targeting IDUs will be critical to addressing this emerging epidemic.

KEY WORDS: injecting drug users, sex workers, prison inmates, HIV/AIDS, Mauritius.

INTRODUCTION

Mauritius is a country with a low national HIV prevalence, estimated between 0.1 and 0.5% (Government of Mauritius, AIDS Unit Report, 2005). However, the country has the highest prevalence of injection drug use in Africa, accounting for at least 50% of all drug users (Sulliman et al., 2004). The pattern of

injecting drug use combined with the high prevalence of drug use among sex workers and prison inmates and harmful injecting practices and risky sexual behaviour all constitute serious elements which are fuelling the country's HIV/AIDS epidemic. This article highlights the emergence of a serious concentrated epidemic among injecting drug users (IDUs) in Mauritius. Through

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review of the available data estimating the size and risk behaviours of the IDU population, and through review of the country's epidemiological history of HIV and drug trafficking patterns, this article addresses the implications of injecting drug use for the spread of HIV.

Background

The Republic of Mauritius is located in the Indian Ocean with an area of 1865 sq km. It is situated 900 km east of Madagascar. Mauritius gained independence from Great Britain in 1968 and became a Republic in 1992. Mauritius has a multi-racial population whose origins can be traced to Europe, Africa, and Asia. In 2002, the population of the Republic of Mauritius was 1,193,737 with 595,067 males and 598,130 females (Government of Mauritius, 2002). English is the official language, but Creole and French are widely spoken. Given the varied origin of the population, several other languages, including Hindi and Chinese are also spoken.

Mauritius has experienced progressive economic growth since gaining its independence, mainly due to an inter-play of economic policies and a favourable international environment. Between 1970 and 1995, the Mauritian economy grew by an average of 5.6% per year (Government of Mauritius, 2002). The past 30 years have witnessed a major shift from sugar cane cultivation to the tourism, textile, and information technology industries, moving the country into the group of upper middle income countries per World Bank classification (United Nations, 2005). With improvements in employment opportunities, living conditions, and an income per capita of US \$9,107, Mauritius ranked 62 on the 2003 UNDP Human Development Index (HDI)—a combined measure of the quality of life, educational attainment and GNP per

capita—the second highest in Sub-Saharan Africa after the Seychelles (United Nations, 2005). The country is firmly committed to the welfare state. Both primary and secondary education is free, and an extensive network of primary health care centres provides the population with easy access to free health care.

Drug Trafficking

Mauritius has extensive air and sea connections to south and south-east Asia, Australia, Africa and several capitals in Europe. Additionally its free port, offshore banking industry, and the high volume cash-turnover of its tourist industry have made Mauritius susceptible to drug trafficking. Historically, Mauritius' primary illicit drug traffic was the shipment of heroin from Mumbai, India, into the country via commercial airlines (United States Bureau for International Narcotics and Law Enforcement, 1995). However, the trafficking pattern has diversified from the south Asian axis, and an increasing number of seizures have been reported on the Nairobi and Johannesburg routes (Government of Mauritius, 2005, 2006).

Drug Use in Mauritius

Prior to the 1980s, drug abuse in Mauritius consisted mainly of locally-grown cannabis use. Cannabis is primarily smoked or used in a boiled concoction with milk, especially during a Hindu religious festival and also by a small Rastafarian community. Opium use is limited, and mainly consumed by elderly Chinese during mah-jong (Chinese dominoes) games (Rajah, 1998).

Beginning in the early 1980s, the 'brown sugar' unrefined form of heroin was introduced into the urban and peri-urban regions of the island, and was used predominantly by adult males through inhalation, known as 'chasing the dragon.'

Heroin use was initially propagated by the marketing of relatively inexpensive, 1/40 gram packet samples of high quality, brown sugar heroin which sold at approximately \$1 per packet. Within a matter of three to four years, the pattern of use expanded into the rural areas, and also shifted to include women and youth. As the market grew more established, prices rose, quality dropped, and sales were limited to larger quantities of between 1/4 and 1/8 gram packets of a lower grade heroin. The drug became unaffordable for most users who often pooled their money to purchase the drug. The rise in cost also changed the method of use from inhaling to injecting; with users often sharing with other users to avoid the loss of any drug to fumes and to maximize use.

HIV in Mauritius

The first case of HIV in Mauritius was diagnosed in 1987 in a woman who contracted the virus via sexual intercourse with a tourist. The slow spread of HIV through heterosexual transmission held

until 2000 when Mauritius experienced a dramatic shift in the mode of infection from heterosexual to injection drug use, which has emerged as the most important mode of HIV transmission in Mauritius. In 2001, 64% of new infections were transmitted heterosexually while IDU accounted for only 7% of new cases (Sulliman, 2005). From 2001-2005, there was a decrease in infection through heterosexual mode and a sharp rise in infection through IDU, which accounted for 90% of new infections in 2005, 34% of which were found among prison inmates (Sulliman, FT, 2005). Currently, Mauritius has a national HIV/AIDS prevalence of 0.1 to 0.5%, qualifying it as a low prevalence country (Government of Mauritius, AIDS Unit Report, 2005). However, IDU practice, the sharing of infected injecting equipment, the application of inappropriate methods of sterilizing the used injecting equipment, as well as unprotected sex, are contributing significantly to the propagation of HIV among IDUs populations, and by extension to the larger community (See Figure 1).

Modes of HIV Transmission in Mauritius, 2001-2005

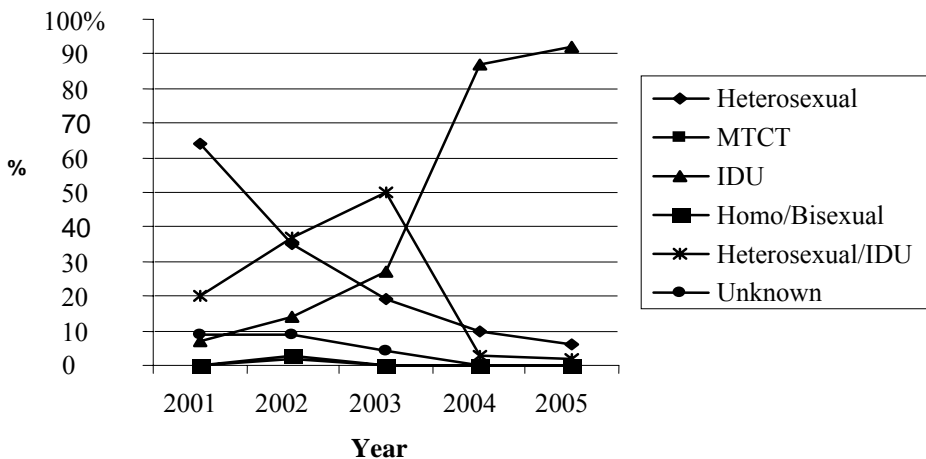


Figure 1. Modes of HIV transmission, 2001-2005

METHODS

Literature reviewed

This paper draws its data from four main sources: the 2004 Mauritius Rapid Situation Assessment; the Mauritius Epidemiology Network on Drug Use, administered by the National Agency for the Treatment and Rehabilitation of Substance Abusers; the AIDS Unit at Ministry of Health; and the Mauritius Prison Service.

The 2004 Mauritius Rapid Situation Assessment (RSA) was conducted to obtain evidence based data on the nature, extent, patterns and trends of drug abuse in Mauritius, and on the linkages between drug abuse/injection drug use and HIV/AIDS, and current interventions on HIV prevention among drug users. Data for the RSA was collected using both quantitative and qualitative methods from the following populations: out-of-treatment drug users; in treatment drug users; sex workers; secondary and tertiary level students; adult and juvenile prison inmates; and key informants. The findings of the RSA provided the basis for the development of a multi-sectoral National Drug Control Master Plan 2004-2009, which was developed using a consultative process with the major stakeholders in the country, the HIV sector, people living with HIV/AIDS and nongovernmental organizations (NGOs). (The National Drug Control Master Plan, 2004).

The Mauritius Epidemiology Network on Drug Use (MENDU), managed by the National Agency for the Treatment of Drug Abusers (NATReSA), collected data from a variety of sources, including the Ministry of Health Psychiatric Hospital, Drug Treatment Centres managed by NGOs, the police, and prisons. The data

was prepared into a report and presented to the regional meeting of the project Focal Points in Southern Africa (Sulliman, 2005). The AIDS Unit at Ministry of Health has established its own HIV surveillance system, based on data collected from anti-natal clinics for pregnant women, sexually-transmitted infections (STIs) clinics, and community outreach screening programmes targeting vulnerable populations such as injecting drug users and sex workers (Government of Mauritius, 2005). In addition, the Mauritius Prison Service (MPS), which provides Voluntary Counselling and Testing to inmates in collaboration with the AIDS Unit at Ministry of Health, runs a systematic data collection system and maintains a database on inmates' drug history and HIV/AIDS status (Government of Mauritius, 2005).

Estimation of IDU prevalence

Two estimation techniques were used to determine the prevalence of injecting drug use in Mauritius: 1) a *consensus estimate* of key informants interviewed for the study; and 2) an *indirect multiplier estimate* of the number of injecting drug users (IDUs) derived from estimates made from the number of IDUs in prisons, the number of IDUs in the community who were neither sex workers nor in prison (derived from treatment numbers), and the number of commercial sex workers (CSWs) who were also IDUs (WHO, 1998).

For the consensus estimate, key informants interviewed were asked to provide an estimate of the number of IDUs in Mauritius, as well as justification for this estimation. These estimates were averaged; the mean of these estimates was used as the mid-point, and the lower and upper limits used as a range for this data source.

Table 1. Summary of findings and methods from data sources used

Source	Year	Aims and objectives	Design and setting	Study population and procedure	Summary of findings
Rapid Situation Assessment	2004	To obtain evidence-based data on the nature, extent, patterns and trends of drug abuse in Mauritius, and on the linkages between drug abuse and HIV/AIDS.	Multi-method study conducted in population specific settings (i.e. prisons, schools, etc.)	<ul style="list-style-type: none"> • Out of treatment drug users <ul style="list-style-type: none"> • Snowball sample of 100 users from 6 sites • Drug users in treatment • Commercial sex workers <ul style="list-style-type: none"> • Convenience sample of 100 street-based CSWs • Qualitative interviews • Key informant interviews • Secondary level students <ul style="list-style-type: none"> • Convenience sample of 320 students, age 15-18 • Qualitative interviews • Tertiary level students <ul style="list-style-type: none"> • Census sample of 100 students from 5 institutions • Qualitative interviews • Adult prison inmates <ul style="list-style-type: none"> • Convenience sample of 150 inmates • Qualitative interviews • Juvenile prison inmates <ul style="list-style-type: none"> • Convenience sample of 50 inmates Qualitative interviews	<ul style="list-style-type: none"> • 17,000-18,000 IDUs in Mauritius <ul style="list-style-type: none"> • 50% report needle sharing • 80% report never using condom • 3% report using condom with CSW • 4,800 CSW/IDUs <ul style="list-style-type: none"> • 25% report needle sharing • 22% report no condom use • 77% report no condom use with regular partner • ~11,000 non-CSW, non-prisoner IDUs
Mauritius Prison Service	2003	Surveillance data	Data collection on inmates' from Beau Bassin Central Prison on drug history and HIV/AIDS status.	<ul style="list-style-type: none"> • Prison inmates 	<ul style="list-style-type: none"> • 2,871 Prisoners • 1412 IDUs <ul style="list-style-type: none"> • 5.5% report regular injection • 30% report needle sharing • 88% report never using condoms
Mauritius Epidemiology Network on Drug Use (MENDU)	2003	Surveillance data	Hospital, drug treatment centre, police, and prison data.	<ul style="list-style-type: none"> • Patients in hospitals, drug treatment centres and institutional settings 	<ul style="list-style-type: none"> • 622 IDUs treated in public drug and alcohol treatment centres • 1,000 IDUs seen by private psychiatrists • 1,000 IDUs seen by general practitioners
AIDS Unit at Ministry of Health		Surveillance data	HIV surveillance data from : <ul style="list-style-type: none"> • Anti-natal clinics • STI Clinics • Community screening programmes 	<ul style="list-style-type: none"> • Patients from antenatal and STI clinics and community screening programmes 	-

The sum of three separate estimates was used to determine the total number of IDUs in Mauritius: the number of IDUs in prison; the number of CSWs who report injecting drug use; and the number of reported IDUs in the community. IDU prevalence was calculated both for the general population and for the population aged 15-54 using the Mauritius population estimates for July 2002 (Government of Mauritius, 2002).

Data from Ghatak et al's 2002 estimation of the number of CSWs in Mauritius was used as the estimate for 2003 (2002). In this study, CSWs from the different regions across the country were asked how many CSWs were in their area; a second CSW in each area, known to the first, was asked how many CSWs they knew in that area who the first CSW did not know. Using this method, the researchers estimated a population of 6,400 CSWs in Mauritius, with 3,900 over 18 years of age and 2,500 under 18 years (Ghatak et al., 2002).

RESULTS

According to the literature estimates, there are between 17,000 and 18,000 IDUs in Mauritius, representing approximately 50% of the total drug using population. Of this population, approximately 4,800 are CSWs, and 1,400 are prisoners. A summary of these results can be found in Table 1.

The four studies reviewed reported data on the IDU prevalence among CSWs, prisoners, and the general population, as well as the prevalence of risky injecting and sexual behaviours among these IDU groups.

Commercial sex workers

In the RSA CSW sample, 74.5% of women surveyed reported injecting drugs in the past year. This estimate was

verified with key informants involved in the sex industry. Based on Gathak et al.'s estimate of 6,400 CSWs in Mauritius, with approximately 74.5% reporting injection, Mauritius has approximately 4,800 CSWs who are also IDUs (Ghatak et al., 2002). The RSA also found that 68 -75% of sex workers injected heroin regularly and 25% reported often or always sharing needles with other users. In addition, CSWs reported low condom usage, with 22% indicating never using a condom with clients, and 77% never using them when engaging in sex with a regular partner (RSA 2004).

Non-CSW, non-imprisoned IDUs

To estimate the prevalence of injection drug use among the non-CSW, non-imprisoned population in Mauritius, the RSA sample comprised those IDUs not imprisoned during 2003 and interviews and treatment data from treatment centres in Mauritius suggested to contain few, if any CSWs, and considered to be independent of the CSW population. Data on the number of IDUs treated in Mauritius were combined with data on rates of treatment among the out-of-treatment IDU sample. MENDU data indicate that 622 IDUs were treated in public drug and alcohol treatment centres in Mauritius in 2003 (Sulliman, 2005). It was estimated that another 1,000 IDUs were seen across the country by private psychiatrists and that general practitioners saw an additional 1,000 IDU clients in the same year. This produced a total of 2,622 IDUs seen by medical professionals across public and private sectors in Mauritius in 2003. This figure was verified by general practitioners and psychiatrists working with IDUs, and with those involved in the public drug and alcohol treatment system. This data was then combined with data obtained in the

RSA interviews with out of treatment IDUs in which 24% of IDUs reported receiving some treatment for their drug use in the past year and a multiplier of 4.17 was used to estimate the population of IDUs in the community.

Analysis of the RSA behavioural data reveals that 50% of IDUs in general, and 75% to 80% of out-of-treatment IDUs shared injecting equipment; 95% of IDUs reported cleaning their needles, however, 71% did so improperly with either water or vinegar; 62% of IDUs are sexually active and engage in risky sexual behaviour. Among IDUs not in treatment 80% reported never using a condom, and only 3% reported using condoms with CSWs. Additionally, only 10% of married IDUs reported using a condom with a regular partner.

Imprisoned populations

The RSA estimate of the number of IDUs in prison was derived by using 2003 data from the Mauritius Prisons Department at Beau Bassin Central Prison. In 2003, there were approximately 2,871 prisoners imprisoned, including 2,398 convicted prisoners, and 473 remand prisoners. In the RSA prison sample, inmates were asked if they had injected drugs when out of prison, and 49.2% reported injecting drugs at some point (Sulliman et al., 2004). In addition, 30% of the inmates injected heroin in prisons with 5.5% doing so regularly (Sulliman et al., 2004) Seven out of 10 convicted inmates reported a past history of drug abuse with 48% reporting ever using heroin. The sharing of injection paraphernalia is also common with 30% of prisoners reporting often or always sharing needles with other users. Further, 88% of prison inmates who engage in sexual activities reported never using condoms (Sulliman et al., 2004).

DISCUSSION

The RSA and MENDU data have revealed concentrated HIV/AIDS epidemics among IDUs, sex workers and prison inmates in Mauritius with a prevalence of 5%. A combined consensus and multiplier method estimated the total number of IDUs to be between 17,000 and 18,000, accounting for about 50% of the total number of drug users in this small island nation. The MENDU surveillance system and data from the HIV Unit indicate that injection drug use has emerged as the major mode of HIV transmission in Mauritius. However, there are limitations in the collection and sampling methods used that must be noted. While the AIDS Unit was comprehensive in its data collection, collecting from antenatal and STI clinics, as well as through outreach programmes, the RSA relied on relatively small samples and used snowballing and convenience sampling methods to recruit not-in-treatment drug users and CSWs. MENDU relied heavily on treatment centre and hospital data; thereby, capturing only a small portion of the researched population.

Although injection drug use has been prevalent in Mauritius since the early 1980s, given the low national prevalence of HIV/AIDS, the virus has only gradually begun to spread among the IDU population. This experience is a stark contrast to many other countries which have experienced rapid spread of HIV in IDU networks due to the sharing of injecting equipment and risky sex behaviours that are prevalent in these populations. In addition, with CSWs disproportionately involved in drug use, and drug-related offences accounting for about 65-70% of the total inmate population, there are indications that Mauritius is facing concentrated HIV

epidemics among IDUs, CSWs and prison inmates.

National response to illicit drug use

Private and public sector response to the drug problem in Mauritius has been a combination of supply reduction measures and demand reduction interventions, with a clear bias toward law enforcement. Demand reduction strategies encompass a wide range of awareness-raising campaigns; information, communication and education programmes targeting schools, communities and the work place; and free drug treatment and rehabilitation. The treatment and rehabilitation of drug abusers is mostly implemented by a number of NGOs with technical and financial support from the National Agency for the Treatment and Rehabilitation of Substance Abusers (NATReSA). The NGOs follow a number of therapeutic models, ranging from outpatient detoxification to inpatient rehabilitation following the therapeutic community philosophy (Abdool, 1998). A national detoxification centre will soon be operational, and detoxification for opiate users will be done on an inpatient basis. In 2004, The RSA findings paved the way for the development of the National Drug Control Master Plan which includes measures to address the drug problem by reductions of both supply and demand. This plan has been merged with the HIV/AIDS Action Plan for IDUs.

The National Response to HIV/AIDS

Mauritius' initial response to HIV occurred relatively early in the epidemic. In 1987, the government established the HIV Unit at the Ministry of Health. In the past 19 years, several educational and advocacy campaigns have been implemented to raise public awareness, a reliable surveillance system has been

established, and diagnostic testing and counselling were and are still provided free of charge for pregnant women and in STI clinics. In addition, as of April 2002, necessary blood testing for individuals who test positive for HIV— including CD4, liver function, and other tests—and antiretroviral therapy for those who meet the eligibility criteria are provided by the government at no cost.

The changing pattern of HIV infection, with injecting drug use emerging as the most important mode of transmission, has stimulated the government to take a number of drastic measures. Legislation was enacted in February 2006 which makes the introduction of methadone for detoxification or maintenance therapy for opiate users possible, and the government is currently awaiting recommendations from international experts on the best modalities for the introduction of methadone.

The government is also working with United Nations Development Programme (UNDP), United Nations Office on Drugs and Crime (UNODC) and Joint United Nations Programme for HIV/AIDS (UNAIDS), through the United Nations Country Team, and has taken a number of measures to address these emerging problems. Ministry of Health and Ministry of Social Security are currently working on the design of an intervention to prevent HIV infection among these target populations. Outreach programmes targeting drug users, especially IDUs, have started. Both the HIV Unit and a number of NGOs have initiated a number of programmes to reach out-of-treatment IDUs; provide them with risk minimization education; encourage them to access voluntary counselling and testing (VCT); and encourage them to enter drug treatment. All these services are provided free of charge. In some cases, mobile VCT clinics provide services during outreach programmes, while fully respecting the

rights of users. Drug using sex workers have also been reached in this manner. Condom distribution has been increased, and condoms are easily available in pharmacies and in health institutions. It is expected that these efforts will be scaled up and risk minimization measures will be expanded to reduce the dangers of HIV, and also hepatitis C, including the provision of prevention commodities for IDUs. The Ministry of Justice, through the State Law Office, has drafted the HIV/AIDS Preventive Measures Bill with a view to ensure that the treatment, care and support of people living with AIDS is done in confidentiality and with full regard to the maintenance of human rights. The HIV/AIDS National Strategic Plan 2006-2009 is also being currently formulated.

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