FORMATIVE RESEARCH ON THE NATURE AND EXTENT OF INJECTING DRUG USE IN KHARTOUM, SUDAN

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Abstract
Little is known about the extent and nature of injecting drug use, and the factors that put injecting drug users at risk of acquiring HIV in Sudan. This formative research/pre-surveillance assessment was intended to provide information on the nature and extent of injecting drug use in Khartoum to assist with the implementation of HIV surveillance and intervention programs. For collection of data relevant to assessing the nature and extent of injecting drug use (IDU) in Sudan, face-to-face interviews were conducted utilizing a questionnaire with 19 Tertiary Key Informants (TKI), and another with 11 Primary Key Informant (PKI).Results relevant to the TKI's confirmed the existence of Persons Who Inject Drugs(PWID's) in Khartoum, more than half of them (52.63%) believe that their size is small, the IDU's are upper socioeconomic class (68.42%) and largely of young age (13-30 Yrs.). The PKI's (among whom there were 4 females) asserted that the IDU's in Khartoum is large (63.63%), and the majority (54.55%) revealed that Khartoum is the locality which harbors them. It is also to be noted that all of the PKI's (100%) are aware that injecting drugs is one of the modes of HIV transmission, and that IDU is becoming a public health issue. This research concluded with the assertion that the presence of IDUs in the Sudanese society; with a notable growth in numbers and variety of its victims, is both worrying and alarming. The scarcity of the declared victims is matched by a growing concern that what is revealed represents only the tip of an iceberg.
Keywords: *Injecting Drug Use, Primary Key Informants, Tertiary Key Informants, HIV*

Background
Drugs can be taken in a variety of ways, but it is the injection of drugs that has the biggest risk of HIV transmission. Injecting drug use is fueling the HIV epidemic in many countries around the world. Evidence shows that such epidemics can be averted, halted, and reversed if comprehensive HIV programs targeting drug users are implemented correctly (Stoicescu, 2012).

Blood transfer, through the sharing of drug taking equipment, particularly unsterilized needles, carries a high risk of HIV transmission. Around 30 percent of global HIV infections outside of sub-Saharan Africa are caused by injecting drugs, and it accounts for an ever-growing proportion of those living with HIV (Stoicescu, 2012). The illegal nature of injecting drugs can also create barriers to accessing adequate HIV prevention, testing and treatment services, making people who inject drugs more vulnerable to HIV and its effects. Without adequate access to these services, there is a high risk that HIV will also be transmitted to their sexual partners (UNDP, 2012). It is

estimated that there are around 15.9 million PWID worldwide (Stoicescu, 2012). Globally around three million, or 13.1 percent, of PWID are living with HIV (UNODC, 2014). Between five and ten percent of new HIV infections worldwide result from sharing used needles (UNAIDS, 2013).
Available study among IDUs in Sudan was carried out in 2005 (Bayoumi, 2013). The study concluded that IDUs do not represent a hidden threat to the HIV epidemic in Sudan since injectable narcotic drugs are expensive and therefore not readily available in the drug market. The most recent data on injecting drug use was provided by the 2010/2011 IBBS. The proportion of FSW who injected drugs during the last 12 months was found to be 0.9% (0 – 5%) with the highest proportions of 5%, 1.6%, 1.5% and 0.9% reported by North Darfur, White Nile, Northern, and both Blue Nile and Kassala states, respectively. Similarly, the proportion of MSM who are injecting drugs was found to be 2.1% (0 – 8.2%) with the highest proportions of 8.2% in Northern state, 3.9% in South Darfur, 3.5% in Gezira, 2.4% in River Nile, and 1.4% in Red Sea. On the other hand, zero percent of both FSW and MSM in Khartoum State reported injecting drugs (CNCDCD, 2011).

Almost a decade has elapsed since the last attempt was made to unravel the magnitude of the problem. Though many African countries are on drug transit routes, and it has been found that International drug traffickers are currently importing a broad range of drugs to many African countries, the extent of drug-related problems in Africa is not clear (Assefa etal. 2005).
This formative research/ pre-surveillance assessment is intended to provide information on the nature and extent of injecting drug use in Khartoum to assist with the implementation of HIV surveillance and intervention programs, with focused interest in determining the nature and extent of injecting drug use, estimating the population size of PWID in Khartoum State, identifying the geographical distribution and social characteristics of PWID, and determining the potential for it to occur in light of credible evidence of its existence.

Relevant Literature

Globally, the definitions for IDU/PWID vary according to the extent and nature of the phenomenon as well as the intensity of risk. Route of injection may be intravenous, intramuscular, or subcutaneous. Also, the cut-off period for defining a person who injects drugs may be one month, 6 month or 12 months. For example, EMRO RDS Module (2013) defines IDUs as injection of illicit drugs in the past six months, while a Yemeni study defines them as persons who use or have used needles or syringes to inject drugs to get "high" (PSA & MPSE, Yemen, 2010). Also, a Surveillance in MENA defined High-Risk Groups for HIV/STI Surveillance in MENA: Men/women who injected more than once a non-therapeutic drug in the last month (HIV surveillance in MENA, 2013).
Regarding the association between substance abuse and HIV infection, below is a review of some studies in different parts of the world:
Drug abuse, in all different methods of intake is one of the primary ways of HIV spread. More than 5% of all HIV infections are related to injecting drug use with infected needles. Drugs, that can be swallowed or inhaled, normally alter people's judgment, and can lead to risky sexual behaviors, such as unprotected sex, having multiple sexual partners and prolonged and traumatic sex, which can also result in HIV transmission (Assefa etal. 2005). Therefore, in addition to being at risk of

contracting HIV through sharing needles, PWID are also at high risk due to altered sexual behaviors because of drug abuse.

It is perceived that little is known about the epidemiology of HIV infection among PWID in the Middle East and North Africa (MENA). The primary objective of the study which was carried out in 23 MENA countries, was to determine prevalence and incidence of HIV among PWID living in those countries. The results of the study showed the following: there are 626,000 PWID in MENA (range: 335,000-1,635,000, prevalence of 0.24 per 100 adults); evidence of an HIV epidemic among PWID in at least one-third of MENA countries, and HIV prevalence was calculated in the range of 10%-15%. The study concluded a relatively high prevalence of sharing needles/syringes and high levels of risk behavior were indicative of the potential for more and larger HIV epidemics; identified a large volume of HIV-related biological and behavioral data among PWID in the MENA region. Therefore, lack of sufficient evidence in some MENA countries does not preclude the possibility of hidden epidemics among PWID in these settings (UNAIDS, UNODC, 2014).

This study aimed to measure HIV prevalence and related risk behaviors among male IDUs in Cairo, Egypt. Given the hidden nature of injection drug use, the peer-referral methodology of respondent-driven sampling in a cross-sectional study was used to recruit a sample of 413 male IDUs. Behavioral data were collected through face to face interviews and serum was obtained for HIV antibody testing. The population estimated HIV prevalence was 0.6% (95% confidence interval 0.1-1.8). More than half (53.0%) reported injecting drugs with used needles or syringes and nearly one-third (32.4%) shared their used needle or syringe with one or more persons in the preceding month. Overall, 70.5% had sex in the preceding year, of which 9.4% reported sex with male partners and 13.2% reported sex with commercial sex workers in the preceding 12 months. Condom use during sex was low with all partner types and only 5.8% ever had an HIV test. Results indicated that there was a relatively low prevalence of HIV infection among PWID (0.6%) compared to global estimates (20-40%), though the figure was many times higher than the general population(Egypt ministry of health, 2010).
In Iran, there are an estimated 200,000 IDUs accounting for transmission of more than two-thirds of HIV infections. The study aimed to describe a range of characteristics of IDUs in Tehran, to examine their injecting-related HIV risk behaviors, and to suggest necessary interventions to prevent HIV transmission among IDUs and their families and sex partners.
A total of 81 key informants from different sectors and 154 IDUs were selected by purposeful, opportunistic and snowball sampling, then interviewed.
Evidence of injecting drug use and drug-related harm was found in 5 of 6 study districts. Several profiles of IDUs were identified: depending on their socioeconomic status and degree of stability, IDUs employed different injecting behaviors and syringe hygiene practices. The prevalence of sharing injection instruments ranged from 30–100%. Varied magnitudes of risk were evident among the identified IDU typologies in terms of syringe disinfection methods, level of HIV awareness, and personal hygiene exhibited (Razzaghi etal, 2006).
A cross-sectional survey among 328 PWID was conducted to assess HIV prevalence and related risk factors among PWID in Tripoli using respondent-driven sampling. Behavioral data and blood samples for HIV testing were collected. The results have shown an estimation of HIV prevalence

of 87%. They detected injecting drug use-related and sexual risk factors in the context of poor access to comprehensive services for HIV prevention and mitigation. Again, a high level of needle sharing was discovered with 85% of the respondents carrying out this behavior.

This first bio-behavioral survey among PWID in Libya, detected one of the highest (or even the highest) levels of HIV infection worldwide in the absence of a comprehensive harm-reduction program (Mirzoyan etal, 2013).

Facts about Drug Use and the Spread of HIV

Up to 10 percent of global HIV infections are due to injecting drug use. If Sub-Saharan Africa is excluded, up to 30 percent of global HIV infections are due to injecting drug use, since the main mode of transmission in Sub-Saharan Africa is through sexual intercourse.

Of an estimated 15.9 million people who inject drugs worldwide, up to 3 million are infected with HIV. The highest concentrations of HIV-positive injecting drug users are in Eastern Europe, East and South-East Asia and Latin America. Over 40 percent of IDUs are HIV positive in parts of these regions.

Sharing needles and injection equipment is thought to be three times more likely to transmit HIV than sexual intercourse.

Although IDUs often have little or no access to HIV prevention and treatment services, research shows that an HIV epidemic among injecting drug users can be prevented, halted, and even reversed(UNAIDS, 2014).

Methodology

Definitions

The following definitions were used in this formative research:

- **IDUs**: Adult men and women, who are currently injecting or have injected more than once a non-therapeutic/ illicit drug in the last 12 months.
- **Primary key informants (PKIs)**: Persons engaged in risk activities themselves (PWID).
- **Tertiary key informants (TKIs)**: Persons involved with high risk activities in a professional capacity, e.g. police and customs authorities, health care providers in psychiatric and rehabilitation facilities, prison authorities, and NGO working among drug users.

Study area

Khartoum is one of the eighteen states of Sudan with an area of 22,142 km^2 and a total population of approximately 5,274,321 million in 2008 census. The state is divided into seven localities; Khartoum, Khartoum North, Omdurman, GabalOwlia, Blue Nile, Ombada and Karari localities. Khartoum is the capital of the state as well as the national capital of Sudan. (5th Sudan Population and Housing Census, 2008).

Study Design

This formative research used quantitative methods and different techniques for sampling research subjects to unveil the current situation of IDUs in Khartoum state.

Formative Research Implementation

Several meetings were held with the Surveillance Technical Working Group (STWG) in which the following was accomplished:

- Desk review of existing information,

- Questionnaires for TKI and PKI were designed and agreed upon,
- Letters of permission were issued to relevant authorities (e.g. SNAP, MOH of Khartoum State, and Police Headquarters)
- Tertiary key informants were listed, and appointments fixed,
- Data collectors were selected and trained.

Overview of Data Collection

Strategies for reaching these key informants included personal or direct contacts, nominations, and snowball sampling. Data was collected through interviews with key informants using a semi structured questionnaire and interview guides designed to suite the different categories. The Data was collected from TKIs by the core study team, while the Data from PKIs were collected by 3 data collectors chosen from TKIs. As for the training of the Data collectors, a one-day meeting was held for the data collectors who participated in interviewing primary key informants.

Data collection and field work

Interviewing tertiary key informants:

- In consultation with the SNAP focal point, the list of tertiary key informants was updated, and appointments fixed.
- The core study team conducted face-to-face interviews with the agreed upon tertiary key informants using the tertiary key informant questionnaire.

Interviewing Primary key informants:

- A team of 3 data collectors was selected from TKIs after finishing with their interviews with previous experience in surveys and have had access in the past to PKIs in a professional capacity.
- Face-to-face interviews were conducted using the primary key informant questionnaire.

Data Collection Tools

The data collection tools were adapted from the tools used for mapping PWID in Yemen (2011).

- Two different questionnaires were used to cover: TheTertiary key informant questionnaire, andThe Primary key informant (IDUs questionnaire).
- Following are the main sections in the different questionnaires (tertiary, and primary):
    - General background information
    - Major characteristics of injecting drug use and PWID
    - Existence of the sub-population and population size.
    - Geographic distribution (residential/venues)
    - Accessibility and Social Networking

Data Management and Statistical Analysis

Double data entry was done using SPSS designed to fit different questionnaires, and the Data was cleaned and validated.

Limitations of the study

Given the hidden nature of injection drug use due to cultural, traditional, and law enforcement aspects of the country, the study encountered a scarcity of PKIs. Although venues were mapped, PKIs were unwilling to participate in fear of disclosure.

Ethical Considerations

Protection of primary key informants: The overall aim is to protect primary key informants. The study team explained the objectives of this study and ensured getting necessary approvals and clearance.

- ***Informed consent:*** verbal consent was sought from study participants. Consent contained information about the study objectives, voluntary participation, confidentiality issues and expected benefits.
- ***Confidentiality of the information:*** Measures will be taken to ensure and maintain participants' confidentiality. No names will be recorded or used. Little data will be collected concerning the residence of participant (only locality and neighborhood). Reports will contain no information that would potentially identify a participant.
- *Compensation:* no compensation was paid to tertiary key informants. Also, primary key informants were provided with information about existing HIV & STI related services.
- Circumspection on the dissemination of the findings.

Results and Discussion

Regarding TKIs

19 tertiary key informants were interviewed in this formative research; 5 respondents from health centers and hospitals representing health care providers, 4 respondents from different governmental institutes, 4 respondents from NGOs, 6 respondents from universities. 8 of the 19 were medical practitioners, and the remaining 11 had administrative roles.

Results showed the following; regarding existence, distribution and PSE of injecting drug use in Khartoum all TKI's affirm the existence of PWIDs in Khartoum State, however more than half (52.63%) believe their size is small. Most TKI's (63.16%) thought that they are a visible group and mainly living in Khartoum locality; concerning the characteristics of IDUs, TKI's believe that the IDU's are upper socioeconomic class (68.42%), largely young in age (63.16%) between 13 – 30 years, however they are unaware of type of injectable narcotics (57.89%) that are available or are being used. They also specified that change in appearance and attitude may be the strongest indicator of injecting drug use (63.16%). It is interesting to note, that while IDUs represent a public health concern, their access to health centers is minimal (15.79%); TKI's believe that most commonly abused drugs are cannabinoids and psychoactive/sedative pills (26.32%) and they believe they are sourced from abroad (68.42%); prostitutes are the most common population with which PWIDs associate (78.95%); TKI's had very little information regarding hospitalization, incarceration, and prosecution of IDUs.

Regarding PKIs

11 primary key informants were interviewed in this formative research; although all localities in Khartoum state were mapped, 7 were found in Khartoum and 4 in Bahri (Khartoum North).

Socio-Demographic characteristics of PKIs (Table 1)

Most PKIs are males (63.63%) ranging in age from 15-25 years (63.63%), and they are mostly students (63.63%).

Table 1: Socio-demographic characteristics of PKI respondents in Khartoum State

Question	Answers	Frequency	Percentage %
1. Gender distribution of PKIs.	Male	7	63.63
	Female	4	36.36
2. Age distribution of PKIs.	15 – 25 years	7	63.63
	26 – 35 years	3	36.36
	36 – 45 years	1	9.09
3. Occupation of PKIs.	Student	7	63.63
	Medical personnel	2	18.18
	Unemployed	2	18.18

Existence and Distribution of IDU

In response about what the IDU size was in Khartoum, 63.63% answered "large" and only 36.36% believed it was small. With a clear majority 54.55% answering that Khartoum was the most famous locality or neighborhood harboring them. Regarding famous venues where IDUs can socialize and inject drugs, most common answer was at private homes (36.36%), followed by public places (restaurants and Nile street) (27.27%), and lastly at universities (18.18%).

General Characteristics of IDU (Table 2)

Regarding the characteristics of IDUs, the PKIs think that most IDU's belong to the higher social classes (45.45%), aged between (25-35 y/o) (63.63%), and are students (45.45%). Though most PKIs were unable to determine the purpose for injecting drug use (54.55%), pleasure and availability seemed to be common answers (18.18% and 27.27%) respectively. Hostility and behavior change were identified as the most important outward indicator of injecting drug use (45.45%) followed by isolation (27.27%) and physical change (9.09%). Social contacts that were identified included women who make tea and singers (45.45%) and policemen (9.09%).

Drugs and injecting practices

Regarding the most commonly used drugs, PKI's responded that cannabis, pills and injections were most commonly used, followed by cannabis and pills, opioids, and benzodiazepines. Along with injectable drugs, PKI's used pills (tramadol, benzodiazepines, and akizol), cannabis, and cannabis and alcohol and pills; however, their preferred drugs included tramadol and morphine or mix of them (9/11). Few admitted to their sources, but the vast majority (10/11) affirmed it was easy to purchase. Drug use commenced for the majority either from 2007-2009 (36.36%) or after year 2013 (36.36%). Stress and frustration was the most common answer to reasons for drug use, while the frequency of use was largely daily (7/11). Subcutaneous injects were the preferred mode of drug use 7/11 and there was a high prevalence of needle sharing (7/11) and only 3/11 self-injected. There were many instances of group use 8/11. All PKIs said that they are financially able to buy drugs; and this is achieved mainly through financing from the family (7/11), followed by work (3/11) and one admitted to selling drugs (1/11).

Table 2: Characteristics of IDUs in Khartoum according to PKI respondents

Question	Answers	Frequency	Percentage %
1. In Khartoum, to which economic classes do the majority of IDUs belong?	High class	5	45.45
	Moderate class	1	9.09
	High and moderate class	3	27.27
	All classes	2	18.18
2. In Khartoum, to which age groups do the majority of IDUs belong?	15 -25	2	18.18
	25 – 35	7	63.63
	> 35	2	18.18
3. What/who are the common types of people who inject drugs? (By occupation, race, etc).	Students	5	45.45
	Doctors	2	18.18
	I don't know	4	36.36
4. In your opinion what are the reasons for injecting drugs?	Pleasure	2	18.18
	Drugs are easy to find	3	27.27
	I don't know	6	54.55
5. Which group/s commonly injects drugs?	Students	5	45.45
	Doctors	2	18.18
	I don't know	4	36.36
6. In many countries IDU can be identified through their appearance or behavior, how can PWID be identified in this city/neighborhood?	Hostility and behavioral changes	5	45.45
	Isolation	3	27.27
	Physical changes	1	9.09
	I don't know	2	18.18
7. Usually there are groups in the society who have more contact with IDU; could you please give us some of those contacts in order to help us reach these sub-populations?	Women who make tea and singers	5	45.45
	Police men	1	9.09
	I don't know	5	45.45

Specific questions

100% of the PKIs were aware of the HIV risk associated with IDUs and the health issues associated with injectable drugs. Though PKIs answered overwhelmingly that they do not socialize, eight of them (73%) admitted using drugs with others.

Discussions

The demographic characteristics of the PKIs in 2005 and the PKIs in this study are a point of great change, and this is likely reflecting a social horizontal shift of injecting drug use. Though the age groups have remained relatively the same, with the majority of the respondents between the ages of 25-35, it is the sex distribution that has changed, with the current study revealing four cases of female IDUs (n=11) as compared to only one in the 2005 study (n=9). And though previously there was equal distribution of IDUs amongst students, professionals, and those who are self-

employed, the current study indicates that the problem is primarily found in students who represent approximately 64% of the PKIs.

Much like the Baseline survey of 2005, the current study has shown that all respondents consider injecting drug use as a serious public health concern, a view shared by both TKIs and PKIs. The study also reinforces the findings from the Baseline survey of 2005 (Bayoumi, 2005) that there is an absolute understanding that the practices of PWIDs regarding injection procedure and the aseptic conditions under which they occur may contribute a significant health risk, especially regarding HIV transmission. These findings are in line with the MENA study (HIV surveillance in MENA, 2013), Egyptian study (Egypt ministry of health, 2010), and Iranian study Razzaghi etal, 2006) amongst others.

There was unanimous agreement that persons using these drugs were of the higher socioeconomic status, and compared to 2005, frequency of use has increased with most PKIs in this study using drugs daily (64%) as compared to 2005 respondents who were abusing 2-3 times/week (50%). This complicates the current situation as the rate of abuse is directly proportional to the risk of HIV transmission and frequency of risk taking behaviors as described by the Ethiopian group and the Baseline study of 2005.

The current study attempts to assess both the knowledge and attitudes of those PWID and those persons who are professionally bound to associate with IDUs. However, several discrepancies have emerged, namely the following:

- The TKIs were unaware of possible venues, distribution practices, nor even the type of drugs that IDUs are able source; only one TKI mentioned alcohol as a drug of abuse, though in the Baseline study of 2005, seventy percent of the respondents admitted to using alcohol at least once a week. Further studies into this is important, since alcohol and marijuana are commonly referred to as "gateway" drugs representing a starting point for deeper involvement with the criminal element and eventual use of "hardcore" drugs like cocaine and heroin. This presents an immediate problem for TKIs who are tasked with the responsibility of dealing with this issue.
- Both TKIs and PKIs agreed that behavior changes were noticeable in IDUs. The Baseline survey 2005 described this as risk taking behavior, and the Addis Ababa study indicated a change in sexual behavior amongst IDUs particularly traumatic sex and risky sexual practices. All of these may increase the possibility of HIV transmission as poor hygiene, aggression, and sexual behaviors are risk factors that increase HIV infection rates.
- While the PKIs believed tramadol and morphine and hashish to be the most likely abused drugs, and the Baseline survey of 2005 includes alcohol with hashish use as the culprit behind increasing HIV transmission behaviors, the TKIs thought that most drugs were being sourced from abroad (n=13, 68%).In the Baseline survey 2005, most drugs seized by customs officials at the various ports of the country mainly KIA (Khartoum International Airport) and Port Sudan were on their way to illicit drug markets in neighboring countries. The Baseline survey 2005 also clearly stated that risky sexual behavior was associated with the use of hashish and alcohol, both of which it claimed were sourced domestically. This leaves the pills issue unaccounted for and since there is no local production of Tramadol and morphine, then they are sourced from abroad, but whether this is legally or illegally, that is undetermined. Proponents of pills being sourced illegally from regulated pharmacies may find some support from the two PKI respondents who disclosed that medical sources

were a source. Unfortunately, most PKIs refused to name the source of their drugs (n=6, 55%), most (n=7, 64%) admitted to having a drug dealer.

- Socially the current study reveals that the PKIs are likely to share or use drugs together (n=8, 73%), but when asked whether PKIs met PWIDs at social events eight answered that they do not socialize (n=8, 73%). TKIs believe that family are aware of the problem, and this is worrisome since most PKIs source their finances for drugs from the family (n=7, 64%).
- IDUs admit to being sexually active in the Baseline study of 2005, and this is an important issue to address since risky sexual behaviors occur under the influence of particular drugs; especially cannabis and alcohol and injectable narcotics. In the current study the TKIs indicated the presence of interactions with FSW, while most PKIs did not interact with FSW (n=7, 64%)
- In the Baseline study of 2005, only four reported performing an HIV test (40%) and one was found to be positive (25% prevalence). This is in line with expected estimates from Sub-Saharan Africa which was reported to be 30% of HIV infections are caused by IDU, 10% worldwide, and 87% in the Libyan experience.

Conclusion

In conclusion the presence of IDUs in Sudanese society is worrying, and it is growing not only in numbers but in the variety of its victims. While females were not a large portion of IDU's in 2005, our results indicate there is a growing number. The scarcity of its declared victims is only matched by the growing concern that what has been revealed is only the tip of a very large iceberg. Though social restraints and economic hardships prevent most ordinary Sudanese from affording such drugs, recent revelations have shown that the drugs themselves are being produced in a variety of ways and come from a variety of sources; and they are being designed for every available budget. The previous notion that poverty protects from drugs, is no truer than the notion that drugs protect from poverty. The best protection from such an epidemic is education and surveillance. This means that the Sudan must come together as a nation and face this problem, and like cancer the process of treatment in some cases may be more difficult to bear than the disease. But the outcome far outweighs the risks posed by this potential epidemic.

Recommendations

Injecting drug use is a phenomenon that must be confronted usingmultiple strategies, for whichthe collaboration of the national and international agencies, community awareness and participation, is imperative. Hence, orchestrated, and highly organized collaborative efforts are strongly recommended.

Health education, health promotion, and health protection;

1. Religious authorities should also be involved in the prevention and education regarding drugs and HIV.
2. Information dissemination regarding drugs and HIV should be made public during academic life and through available media.
3. Combating gateway drugs like cannabis and alcohol and strengthening judicial systems to deal with the problem of distribution effectively

SNAP

1. Successive measures to identify and treat PWID as well as implement, expand, and promote HIV/AIDS surveillance and treatment programs.
2. The urgent need for a behavioral and biological survey targeting PWIDs.

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