

Changes in HIV Related Risk Behaviour among Injecting drug users in three States of India

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Abstract

The study aims to understand the changes in HIV related risk behavior among IDUs between two points of time. Analyses are based on 2075 and 1977 respondents aged above 18 years who participated in round I and II of the **Integrated Behavioral and Biological Assessment**. The Gap between transitions from drug to injecting drug use is very narrow as a substantial proportion of drug users initiate injecting drug use within a year. In all the states, the transition plays a key role and those initiated injecting drug use within one year of taking drugs are more likely to have HIV sero-positivity than the others. And those who's multiple sexual partners as IDUs are more likely to have HIV sero-positivity. Interventions should be designed to identify, reach and work with the potential IDUs through network based approach to ably suspend the transition those initiated injecting within first years of drug use.

Background

In the current stage of HIV epidemic, an increasing advocacy for strategic shift from 'prevention, control and care & support' to 'treatment as prevention' is rooted in the fact that addressing HIV/AIDS is a priority issue in achieving MDGs. In fact, HIV/ AIDS impact negatively almost all the other MDGs and hence in a larger frame work of achieving MDGs, combating HIV/AIDS is a goal in itself as it underpins other developmental goals. However, any structural changes required to adopt the strategy of treatment as prevention may have inter as well as intra country variation in view of *recourse of the epidemic, nature of high risk group (HRG), variation in*

modes of HIV transmission, nature of discordance among couples, adherence to ART for prevention etc. It is within this context, Injecting drug users (IDUs) across the globe who are at dual risk of HIV infection due to sharing of infected needles as well as unsafe sexual behaviour, may require a distinct approach of treatment prior to ART though treatment as prevention has been advocated uniformly for all HRGs.

It is worth mentioning that millions of people worldwide are injecting drug users (IDUs), and blood transfer through the sharing of drug taking equipments, particularly infected needles, is an extremely important means of transmitting HIV. The illegal nature of injection drug use can also create barriers to accessing adequate treatment and prevention services making IDUs more vulnerable to HIV and its effects. The crossover with prostitution further means they are in positions to transmit the virus among other at-risk population (People who inject drugs and HIV, 2012). Injecting drug users (IDUs) are vulnerable to HIV infection both because of the sharing of contaminated injection equipment and their practice of high risk sexual behaviors. HIV is transmitted through injecting when drug users share injection syringes that have been contaminated with small amount of infected blood (Huizhen et al. 2009).

According to UNAIDS 2011, At the end of 2010, an estimated 34 million people [31.6 million–35.2million] were living with HIV worldwide, up 17 percent from 2001. Approximately, 10 percent of HIV infections worldwide are attributable to injecting drug use (Mathers et al. 2010), and many countries in Asia, including Thailand, Myanmar, Indonesia, Bangladesh, Nepal and India are confronting serious HIV epidemics among IDUs (Sharma et al. 2009). According to estimates from NACO, an estimated 2.31 million people in India were living with HIV/AIDS in the year 2009 (88.7 percent adults in 15-49 years, 7.5 percent aged 50 and above and 3.5 percent children below 15 years). The data revealed that about 0.1 per cent of adult males from the

general population reported having injected drugs for non-medical reasons at least once in their lifetime.

Nagaland and Manipur are two states that consistently report of a high risk of HIV prevalence, and in the case of Manipur, the highest in India according to 2009 sentinel surveillance figures, HIV prevalence among general population in Manipur was 1.4 percent, and in Nagaland was 0.8 percent. Integrated Biological and Behavioural Assessment (IBBA) conducted in 2006-2007, in Manipur and Nagaland reported comparable HIV prevalence figures 23 percent and 32 percent in Bishnupur and Churachandpur in Manipur and 1.1 percent and 1.8 percent in Phek and Wokha in Nagaland (Mahanta J et al. AIDS 2008). The HIV epidemic in Manipur is older than in Nagaland. Data from the facility –based targeted intervention surveillance system in India documented HIV prevalence among IDU in Manipur over 20 percent since 2003; whereas in Nagaland it ranged from 8 percent in 2003 to 2 percent in 2006 (Avahan India AIDS Initiative 2009, NACO, 2008). In Mumbai, the 2006 surveillance data indicated an HIV prevalence of 20 percent among IDU compared with 20 percent for female sex workers (FSW) and 16 percent for men who have sex with men (NACO, 2008). Most IDU in Mumbai /Thane reported first injection drug use at older ages than in northeast, with one third being newer injectors.

IDUs which were focused in the golden horizon of the country and concentrated mostly in the two north eastern states, Nagaland and Manipur, are gradually expanding in the other parts of the country mostly in metro cities. Recent estimates show that currently there are approximately 30,000 IDUs in 3 major metropolitan cities of Mumbai, Delhi, and Chennai. IDUs are at the dual risk of needle sharing and risky sexual behaviour, becoming more vulnerable to STI and HIV. Thus, studying the interface of injecting drug use and risky sexual behaviour is important to curb the pace of HIV epidemic among IDUs. The aim of this study is to understand HIV related risk

behavior and prevalence of HIV/AIDS among IDUs in three states of India. More specifically, 1) To analyze the changes in the initiation of injecting drug use and dynamics of transition from drug abuse to injecting drug use in three states, 2) To examine the changes in HIV related risk behaviours among IDUs at two point of time and 3) To study the socioeconomic and behavioural correlates of HIV sero-positivity also the observed changes overtime among IDUs.

Methods

In order to understand Changes in HIV related risk behavior and prevalence of HIV/AIDS among IDUs, data from *Integrated Behavioral and Biological Assessment (IBBA)* round 1 and round 2 is used. The first round of IBBA was conducted in year 2005-07 and second round was done in 2009-10 by the Indian Council of Medical Research, National AIDS Research Institute, in partnership with Family Health International and was implemented in close collaboration with National AIDS Control Organization (NACO) and State AIDS Control Societies (SACS). The IBBA is funded by the Bill and Melinda Gates Foundation (BMGF) and was conducted in Avahan project states of Andhra Pradesh, Maharashtra, Tamil Nadu, Karnataka, Manipur and Nagaland and along the selected stretch of National Highways.

IBBA collects the information of IDUs from the six districts that were purposely selected because of their socio-cultural background and size of IDUs from among the districts where Avahan was intervening. The district were selected, Churachandpur and Bishnupur in Manipur, Phek and Wokha in Nagaland, and Mumbai and Thane in Maharashtra. IDUs from these six districts were recruited from a cross sectional survey on HIV risk behaviours and HIV and STI biological markers. IDUs were selected on the criteria of those who were 18 years or older, who injected addictive substances/drugs for non-medical purposes at least once in past six month.

The sample size for each district was approximately 400 (a combined sample size of 400 was used for Mumbai and Thane (termed ‘Mumbai/Thane’) and respondent driven sampling was the method used to sample eligible respondents. A total of 2,075 IDUs in round one and 1,977 in round two were interviewed in the IBBA.

The study employs quantitative techniques using standard statistical tools to achieve the above objectives. All results presented in this article are unweighted univariate measures.

Results and Discussion

Demographic Profile of Injecting Drug Users

More than one third of the injecting drug users in the northeast were in the 21-25 years of age group in the round-1 (2006-2007) whereas in round-2(2009-2010) approximately one fourth injecting drug users were in this age group. On the other hand, it highlights the fact that the entry into IDU behavior is still happening at the younger age despite of all the efforts made by various programmes with this group. In Phek and Wokha, 38 percent and 18 percent of the drug users belonged to the age group 18-20 years in round-1 while In round-2 it was observed that only 24 percent and 6 percent. In Mumbai/ Thane, almost half of the injecting drug users belonged to age group 31 years or older in both the round. Interestingly, in the age group 26-30, there was an increasing trend seen in the all district from round -1 to round-2.

There is an increasing trend seen in the use of IDU with increasing educational level for majority of districts. However it is not true for Mumbai and Thane where more than half of IDUs are illiterate but in rest of the districts in Manipur and Nagaland majority of IDUs are having at least secondary or higher secondary education. In Manipur, approximately half of the injecting drug users had more than 11 years of schooling in Round-2, whereas, in Mumbai/Thane more than

55percent of the respondents were illiterate and in the northeast state combined it is less than 16percent.

In all districts of Manipur, Nagaland and Maharashtra majority of IDUs reported to be unmarried in both the round. However, it is important to highlight here that a large proportion of these men from all the districts reported to be married too, which puts the spousal partners of these men at risk. Further, analyzing the living arrangement of these men shows that more than 60 percent of IDUs were living with their partner or spouse. This fact underlines the above-motivated fact of increased risk to their spousal partners. A district analysis of living status shows that in Phek 75 percent IDUs were living with their partner in round-2 as compare to 83 percent in round-1. It is seen in the background characteristics analysis that the profile of IDUs in Mumbai/Thane is quite different from the IDUs from Nagaland and Manipur. Adding to this difference is the Occupation, where the majority of IDUs in Nagaland and Manipur reported as not working whereas this proportion was very small in Mumbai/Thane where a large majority reported other occupations in their work category.

The IDU behavior demands for a great deal of mobility from a drug user for acquiring/buying drugs to using drugs. As the behavior is illegal it involves lot of secrecy and constant efforts to keep the behavior concealed there is a regular change in the places or joints where these groups meet and use the drugs. Thus, making studying their mobility is very critical. As expected, mobility is extremely high among the groups from all the districts except for the districts from Nagaland.

Dynamics of Injecting Drug Use Behavior

A comparison between round -1 and round -2 clearly brings out the fact that in all the districts the drug use is initiated at younger ages i.e. below 20 years. The median age of initiating drug

use is 22 years for all the districts. However, a considerable decline in the age at starting drugs was observed among those below 20 years of age in round -2 as compared to round-1 in most of the districts. In Mumbai/Thane age at starting drugs has declined from 60 percent to 43 percent. In the districts of Manipur, Bishnupur has declined to 45 percent from 65 percent and Churachandpur to 40 percent from 60 percent in round-1. Phek (82 percent) and Wokha (85 percent) also showed considerable changes in initiation in drug use among those less than 20 years as it decreased from 83 to 50 percent and 85 to 52 percent respectively.

Initiation of injecting drug in most districts was reported at younger ages but at the same time a declining trend was observed between the two rounds. It is worth mentioning here that almost three-fourths of population in Nagaland and Manipur initiated injecting drug use by the age of 25 out of which majority did even before 20. In Maharashtra, however, the scenario is little different. Here, approximately half of the IDUs in round-2 reported to start injecting drugs after ages 26 years the corresponding proportion for Bisnupur, Churachandpur and Phek and wokha was 22.4 percent, 23.6 percent, 17.6 percent and 43 percent, respectively. Further, looking into districts shows that the median age of initiating injecting drug use was approximately 21 years in both the round in all districts of Manipur and Nagaland. In Maharashtra the median age of initiation of injecting drugs was 25 years.

Transition from Drug Use to Injection Drugs

This section discusses the behavioral transition among these groups from using drugs in other forms into injecting drugs. The mean duration of drug use and injecting drugs were different in every district. In round 2 of Mumbai/Thane, the mean duration of transition from drug use to injecting drugs was 5 years, which is higher as compared to round 1 and shows a delay in the transition into injecting drugs from using drugs in other forms. In Manipur, Churachandpur

showed the considerable change in the duration transitioned from drug use to injection drugs approximately 0.5 to 6.7 years from round-1 to round-2. Among IDUs from Wokha and Mumbai/Thane the majority of the drug users transitioned from drug use to injecting drugs within 1 to 5 years. The duration between first drug use and first injecting drug use in round -2 depicts that approximately 25percent of the respondents in Maharashtra reported to have initiated injecting drug use within first year of starting drug use. The corresponding proportion for Bishnupur and Churachandpur, Phek and Wokha in the same duration was 61percent, 36percent, 61percent and 15percent respectively.

The needle/ syringes sharing behavior in last one month with the number of partners showed a dramatic improvement in most of districts. It may be result of interventions programmed, which was carried out by NACO along with various other institutes. In most of the districts majority-injecting drugs user did not shared needle/syringe with any partner in the past month. In Mumbai/Thane 17 percent of IDUs were sharing the needle /syringes with one or two partner in round-2 and in round-1 this proportion was 18percent in the past one month. The corresponding proportion for Bishnupur, Churachandpur and Phek was 13percent, 15percent and 20percent respectively. But Wokha is showing an increasing trend of sharing the needle/ syringe with one or two partner and in 5 or more partners. A very rapid decline was observed in Churachandpur district of Manipur from round-1(45 percent) to round-2(15percent). A very less proportion of the Injecting drugs users reported sharing needle/syringe with more than or equal to 5 partners in most of the districts except as motioned above, the district Wokha. An enquiry into frequency of sharing reveals that most of the injecting drug users sometimes shared needle/ syringe, which was previously used by someone else. In Mumbai/Thane, 9percent IDUs reported sharing needle most of the times in round-2 which has almost doubled from 4 percent in round-1. In Wokha

districts nearly 32 percent of users were using used needle/syringe most of the times, which is almost three times as compared to round-1. In nutshell, we can easily say the needle sharing frequency may have reduced but the behavior had not reduced as a large majority of respondents reported needle sharing at least sometimes.

Cleaning of needle shows quite an encouraging picture as majority of IDUs reported cleaning their needle/ syringe either all the times or at least most of the times in all the districts. It is important to mention here that the behavior of cleaning every time has reduced in all the districts between round-1 to round-2 whereas the cleaning most of the time has shown marked improvement. However, a considerable proportion in all the districts, especially 28 percent in Mumbai/Thane, still reported never cleaning their needle and thus increasing their vulnerability. In round-2 of Mumbai/Thane, approximately one third of injecting drugs users reported cleaning their needle/syringe as compared to round-1(7percent) which was an increase of almost 6 times. But, on the other hand cleaning practices every has reduced to half.

Majority of injecting drug users from most of the districts procured the needle/ syringe from the NGO drop-in centre except for Wokha where chemist shop was the main source of procurement. It may be the result of non availability of syringes at NGO drop-in centre, in Wokha as maximum (81percent) injecting drug users procured the needle/syringe from chemist shop. In Maharashtra, between the two time periods there was a slight reduction in procurement from NGO and increment in procurement of needle/syringe from chemist shop. In all the districts very few of the injecting drug users were procuring the needle/ syringe from the drug dealer

Changes in Sexual Behaviours of Injecting Drugs User

From the table 3, in all the districts a large majority of IDUs were sexually active as 93 percent of the injecting drug users in Maharashtra and 90percent and 95percent Manipur and Nagaland

reported to ever have had sex with a women. About 65percent of the injecting drug user had sex with the female partner in last 12 month in round two in Maharashtra. In Bishnupur and Phek this proportion was 96percent and 82percent. Within the rounds there was an increase seen in this proportion for all the districts except in Churachandpur and Wokha where the sex with a women in last 12 months has also shows a low. In Maharashtra about 70 percent of the injecting drug users in round two had ever sex with paid partner as compared to 65 percent in round one. In Manipur and Nagaland also there was an increased sexual activity with paid partner.

Majority of injecting drug user reported multi partner behavior in both the round one and two. Overall, paid sex ever was increasing in all the districts from round 1 to 2. Except in Bishnupur, all the other districts showed increase in paid sex in last 12 months. Sex with non-paid partner or regular partner/spouse is reducing in Manipur but increasing substantially in Nagaland and Maharashtra/Thane. Sexual encounters with regular partner showed an increasing trend in Manipur and in Phek whereas it showed a dip in Maharashtra.

In all the districts most of the IDUs in round one and round two reported that their multipartner were not as a drug user in the last 12 month. In Phek and Wokha, 11percent and 22percent IDUs reported drug user as sexual partner in round two as compared to 5 percent and 9percent in round one respectively. In Mumbai/Thane, 65 percent of the injecting drug users had at least one female sexual partner in the past one year in round two while in round one it was 56 percent. In Bishnupur and Churachandpur, 59 percent and 47 percent had single partner whereas in Phek and Wokha it was 22 percent and 33 percent had single partner in round two.

Approximately 70 percent of the injecting drug users in round two, reported that they had used condom at last sex with paid partner whereas 97 percent and 91 percent, Bishnupur and churachandpur in Manipur , 91 percent and 47 percent respectively in Phek and Wokha in

Nagaland had used condom at last time of sex with paid partner. It was showing the increasing trend of condom used in round two as compared to round one.

Sexually Transmitted Infections among IDUs

Knowledge of STI shows improved performance in all three states from round 1 to round 2. Similarly, the prevalence is also showing an improved picture as it has reduced to a great extent in all the districts.

In Maharashtra, 45 percent of the IDUs in both the round had heard about STIs. The prevalence of STI in Maharashtra shows a marked reduction in round two as compared to round 1, as the prevalence has reduced to 12 percent from 21 percent. In Manipur, Bishnupur has reported 89 percent in round 1 and 88 percent in round 2 had heard about STIs. The prevalence of STI in Bishnupur shows a marked reduction in round two as compared to round one as prevalence has reduced to 5 percent from 33 percent; whereas in Churachandpur, it was 74 percent and 78 percent in round 1 and round 2 had heard about the STI. The prevalence of STI in Churachandpur shows very slightly reduced to 5 percent from 7 percent. In Nagaland, Phek has reported 80 percent and 90 percent in round 1 and in round 2 respectively. The prevalence of STI in Phek showed a marked reduction I round two as compared to round one as the prevalence has reduced to 3 percent from 13 percent .whereas in Wokha the prevalence of STI was reduced to 0.5 percent from 10 percent.

HIV among Injecting Drugs User

More than 90 percent of the injecting drug users in round 1 in Manipur had heard about prevention of HIV it varied in round 2 (89 percent and 98 percent). This proportion in round 2 was 74 percent in Mumbai/Thane, 89 percent in Bishnupur, 98 percent in Churachandpur, 97 percent in Phek, and 80 percent in Wokha.

In round 2, 45 percent of IDUs in Mumbai/Thane observed feeling at risk of being infected with HIV; whereas, only One third of the IDUs in round 1 were observed. About 54 percent and 65 percent in Bishnupur and Churachandpur in round 1 and 43 percent and 60 percent respectively in round two of the injecting drugs users feel that they can be a risk of being HIV. There were 48 percent of the IDUs. in round 2 had ever taken an HIV test and 88 percent had collected their test result in Mumbai/ Thane; whereas in round 1 this proportion was 23 percent. In Wokha, only 12 percent in round 2 and 11 percent in round 1 had ever taken HIV test and among them 45 percent in round 1 and 68 percent in round 2 had collected the test result. A greater change was observed in the Phek districts of Nagaland, 7 percent in round 1 to 42 percent in round 2 of HIV testing. But HIV prevalence in both the districts was very low in Nagaland around 1 percent to 2 percent in both the round. HIV prevalence was 18 percent in Mumbai/ thane in round 1. In Manipur in both districts have higher prevalence of HIV among injecting drugs users, about 39 percent in Churachandpur and 23percent in Bishnupur in round 2 than from the other districts .

Determinants of Sexually Transmitted Infection (STI) among IDUs

Table – 5 represents the result of logistic regression model, which regress any STI symptom in the last 12 months among injecting drug users according to the selected background characteristics, sexual behavior of the injecting drug users and contextual factors regarding injecting drug use in three states, Maharashtra, Manipur and Nagaland.

In Manipur, those who are illiterate and less educated are more likely to have any symptom of STI than those who are higher educated i.e. years of education is more than 10 years. Mobility is another predictor to explain the STI symptoms and those who have mobility are 5.6 times more likely to have any STI rather than the non-mobile counterparts. On the other hand, those who are separated/divorced/widowed, among them the STI prevalence is 13 times more as compared to

unmarried. Another finding is that, if the sexual partner is injecting drug users the prevalence of any STI is 9.3 times more likely. Number of partner shared needle or syringe are positively associated with any symptom of STI. Those who do not share the needle or syringe are less likely and those who share their needle or syringe among 3-4 partners are 7.8 times more likely to have any STI symptom.

In Nagaland, Among IDUs whose partners are involving in injecting drug use practices; they are 8.1 times more likely to have STIs symptoms than the others. Condom use at the last sex with multiple partners are showing the significance association at 10 percent level of significance and those who have addressed the condom use in the last sexual act are 0.2 times less likely to have any STIs in the past one year than those who does not use condom. This result shows that if the injecting drug users use condom at the time of sex with their either regular partner or with paid or with casual partner, they would be less affected with sexually transmitted infections.

Table reveals that in Maharashtra, those who are more educated are 19 times more likely to have any STI symptom than the other groups in the past one year. Living status is another factor to describe the STI symptoms and those have the regular sexual partner are the 6.5 times more likely to have any STI rather than those who have not or not living with their sexual partner although it is not significant. Sexual behavior of injecting drug users and contextual factors regarding injecting drug use are the important factor to explain any STI symptom in the past one year among IDUs .Those who have sex with different female partner , among them whose female sexual partner as an injecting drug user are 5.8 times more likely to have any STI symptom. Age at initiation of injecting drugs at the age of 31 years and above are negatively associated than younger ages of injecting drug user.

Determinants of HIV Prevalence among IDUs

Table 6 Represent the result of logistic regression model for HIV prevalence among injecting drug users according to their background characteristics, sexual behavior and contextual factors regarding injecting drug use in three states, Maharashtra, Manipur and Nagaland. There have been used three type of model to describe the determinants of HIV in injecting drug users in this logistic regression analysis. In Model one only background characteristics of injecting drug users have been included to explain the effect of these characteristics on HIV prevalence among injecting drug users. In model two sexual behavior of the injecting drug users has been included to explain the effect of sexual behavior on HIV prevalence, in model third contextual factors regarding injecting drug use have been included like age at initiating injecting drugs, duration between first drug use and first injecting drug needle/syringe changing behavior with different partner.

In Manipur, Those IDUs who have completed 1-8 years of schooling and engaged in any others occupation are at high risk of HIV, almost 2 times more likely to have seropositivity. Marital status of the IDUs is also major determinants to describe the HIV sero-positivity; those who are separate/divorced/separated approximately 5 to 6 times more likely to have HIV prevalence in Manipur as compared to the unmarried injecting drug users. Sexual behavior is the very important determinants to describe the HIV prevalence among Injecting drug users, yet there is no significant association between HIV seropositivity and Sexual behaviour. Age at initiating injecting drug in the age group 21-25 and older or equal to 36 years are 2.3 times and 8 times more probable to have HIV sero-positivity than the below age 20 years of injecting drug users.

Those who have initiated injecting drug use within one 1-5 years of taking drugs are 2 times more likely to have HIV sero-positivity than the others.

In Nagaland, HIV prevalence is very low, that's why many background characteristic are not predicated significance, only those who are professional, more likely to have sero-positivity than the other occupational group. Those IDUs who shared their needle/syringes with 3 to 4 partner, 7 times more likely to hav HIV. In Nagaland important issues is that if the sexual partner is as an injecting drug user are 9 times more likely to have HIV prevalence than whose partner is not injecting drug user. Another important finding is that those who have used condom at the last sex they are less likely to have HIV prevalence than those who do not use condom at the time of sex.

In Maharashtra those IDUs who are less educated i.e. below high school are more likely to have HIV prevalence about 2.0 times more likely at high risk of HIV sero-positivity than the more educated counterparts. IDUs, who have involved in agricultural activity, are over 8 times more likely to have HIV sero-positivity than those who are not working, professionals and others. In model -2 and model-3 both shows that those who are living with their regular sexual partner are less likely to have HIV than those who are living without their sexual partner. Those who have reported the early initiation of injecting drug use in the age group of below 26 years have less likely to risk of HIV sero-positivity than those who are initiating of taking drugs in the early age group less than or equal to 20 years. It has been observed, while talking about higher chances of STI prevalence among those injecting drug users who shared their needle/ syringe with 3 to 4 IDUs, and in case of HIV sero-positivity the scenario is coming in a similar way. HIV prevalence is more among those who have shared their needle or syringe within 3-4 IDUs are 4 times more likely and positively associated with HIV sero-positivity, than the sharing among 1 to 2 IDUs or

those who are not sharing needle/ syringe with others. In Maharashtra sexual behaviour of Injecting drug users are not significant association with HIV seropositivity.

Summary of Findings and Conclusions

The study has clearly brought out that there is a considerable decline in the age at initiation of drugs among the young men below age 20 in round-2 as compared to round-1. These changes seem to be primarily due to intensified programmes to address dual risk of STI/HIV among injecting drug users. In the older ages, however, this change is negligible, which may be mainly due to larger drug dependency restricting behavioral changes at relatively older ages. On the other hand, the gap between transition from first drug use to first injecting drug use is very narrow as a substantial proportion of drug users initiate injecting drug use within a year in all the three states. The proportions of such drug users are much higher in Manipur and Nagaland as compared to Maharashtra.

In order to understand the severity in dynamics of injecting drug use the sharing of needle/syringes is extremely important for any harm reduction programme. It is encouraging to observe that in almost all the districts included in the study except Wokha in Nagaland, there has been a significant decline in proportion of needle sharing during two rounds of IBBA but a very rapid decline in Churachandpur district of Manipur from 45 percent in round-1 to 15 percent in round-2 seek special explanation, which is seldom with the secondary data analysis. In fact, a small scale qualitative exploration may be suitable to precisely understand why there has been such a profound decline within a short period of even less than three years and lessons can be used in other districts/ states. Further, it is important to mention that the behaviour of cleaning syringes has also improved considerably in all the districts where the cleaning most of the times has shown marked improvement though it is far from achieving universal practices of using

cleaned injecting equipments. It is also important to mention that majority of injecting drug users from most of the districts procure the needle/ syringe from the NGO drop-in centre except for Wokha, where chemist shop was the main source of procurement. Thus, a relatively lower access and utilization of IDUs based programmes in Wokha may be one of the important reasons behind a lower success of programmes for IDUs.

In addition to reduction in needle sharing behaviour and universal use of clean syringes, another important issue is access and utilization of de-addiction programme in order to improve the quality of life of IDUs. IBBA collected information on medication for drug use and results portray that there is a reduction in proportion of IDUs who sought treatment for drug use in Churachandpur, Wokha and in Mumbai and Thane. In Mumbai/ Thane only one-fifth of the injecting drug users in round-2 have undergone any kind of treatment for drug use as against 33 percent in round-1.

In terms of risky sexual behaviour, the proportion of paid sex has been increased among the IDUs in all the districts from round 1 to 2. The condom use has been increased among the IDUs in round-2 as compared to round-1. On the other way round, the prevalence of STI in Maharashtra shows a marked reduction in round -2 as compared to round-1, as the prevalence has reduced to 12 percent from 21 percent. In Manipur and Nagaland the scenario of any STI follow the same path. While talking about the knowledge about the prevention of HIV Manipur and Nagaland are in advantageous position as compared to Maharashtra.

The determinants of STI and HIV among IDUs are almost same nature in all three states. In Manipur mobility is important predictor to explain the STI symptoms and HIV sero-positivity, and those who have mobility are more likely to have risky sexual behaviour and increase the chances of STI/HIV rather than the non-mobile counterparts. Mobility may increase the chances

to indulge in multiple partner relationship and hence heighten the risk of STI/HIV. Another finding is that, those who have sex with different type of female sexual partner and if the sexual partner is injecting drug users the prevalence of any STI and HIV is much higher as compared to the other counterparts in all three states. Condom use at the last sex with multiple partners is showing a significant association and those who have addressed the condom use in the last sexual act are less likely to have any STIs and HIV in the past one year in Manipur. While in Maharashtra, younger age of injecting drug use increases the risk of HIV sero-positivity. In all states, the transition plays a key role and those who have initiated injecting drug use within one year of taking drugs are more likely to have HIV sero-positivity than the others. Among IDUs the sharing of needle or syringe is the main cause, which increases the chance of STI/HIV. Needle or syringe sharing among 3-4 partners is more vulnerable in term of STI/HIV.

References

1. Avahan India AIDS Initiative: From hills to valleys: Avahan's HIV prevention program among injecting drug users in Northeast India. New Delhi: Bill & Melinda Gates Foundation; 2009.
2. HIV prevention among injecting drug users (UNAIDS, Paper to the 24th Meeting of the *UNAIDS Programme Coordinating Board*, 2009)
3. Huizhen L, William G and Shui Shan L, Multilevel analysis of HIV related risk behaviors among heroin users in a low prevalence community ,*BMC Public Health* 2009, **9**:137 doi:10.1186/1471-2458-9-137
4. Jagadish M, Gajendra K M, Ramesh S. Paranjape, Mandan Roy, Andale Kohl, Brogen Akoijam S, Bernice Dzuwichu, Hiranya Kumar Das, Prabuddha gopal Goswamic, Gay

- Thongamba; Injecting and sexual risk behavior, sexually transmitted infections and HIV prevalence in injecting drug users in three states of India. *AIDS* 2008;22(suppl):S59-S68,
5. Mathers BM, Degenhardt L, Ali H, Wiessing L, Hickman M, Mattick RP, Myers B, Ambekar A, Strathdee SA: HIV prevention, treatment, and care services for people who inject drugs: a systematic review of global, regional, and national coverage. *Lancet* 2010, 375(9719):1014-1028.
 6. NACO (2007) 'HIV sentinel surveillance and HIV estimation in India 2007: A technical brief'
 7. National AIDS Control Organization. HIV sentinel surveillance and HIV estimation 2006. Available at: www.nacoonline.org. Accessed 10 February 2008.
 8. National AIDS Control Organization. Manipur: HIV surveillance fact sheets 2003–2006. Available at: www.nacoonline.org. Accessed: 20 March 2008.
 9. National AIDS Control Organization. Nagaland HIV surveillance fact sheets 2003–2006. Available at: www.nacoonline.org. Accessed: 20 March 2008.
 10. Indian Council of Medical Research and Family Health International 360, *Integrated Behavioural and Biological Assessment: Repeated surveys to Assess Changes in Behaviours and Prevalence of HIV/STIs in Populations at Risk of HIV, Round 2 (2006-2007) National Summary Report*, National AIDS Research Institute, Bhosari; FHI 360, New Delhi.
 11. Sharma M, Oppenheimer E, Saidel T, Loo V, Garg R: A situation update on HIV epidemics among people who inject drugs and national responses in South-East Asia Region. *AIDS* 2009, 23(11):1405-1413.
 12. UNAIDS World AIDS Day Report | 2011

13. People who inject drugs and HIV (2012). Retrieved from http://www.avert.org/people-inject-drugs-hiv-aids.htm#footnote2_j6s7buw

Table 1. Demographic Profile of Injecting drug users

Background Characteristics	Manipur				Nagaland				Maharashtra	
	Bishnupur (%)		Churachandpur (%)		Phek (%)		Wokha (%)		Mumbai/Thane (%)	
	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2
N (all respondent)	420	410	419	411	440	419	420	412	376	327
Age (years)										
18-20	12.6	2.9	10.0	2.7	37.5	23.9	18.3	5.6	5.1	3.7
21-25	37.9	25.6	34.4	19.7	37.0	35.3	36.0	26.5	21.3	19.6
26-30	22.1	35.1	33.4	38.7	21.1	28.6	33.1	34.5	24.2	26.9
31-35	16.4	19.8	14.3	24.6	3.0	9.1	9.0	19.7	19.9	19.9
≥36	11.0	16.6	7.9	14.4	1.4	2.9	3.6	13.6	29.5	30.0
Education (years)										
Illiterate	4.5	6.8	6.7	4.9	5.0	5.7	16.2	26.9	48.7	56.6
1-8	20.7	13.7	32.5	36.3	34.8	30.5	34.0	24.0	41.2	34.3
9-10	37.4	30.0	35.8	32.1	29.1	24.6	30.7	29.1	8.5	5.5
11+	37.4	49.5	25.1	26.8	31.1	39.1	19.0	19.9	1.6	3.7
Marital status										
Unmarried	67.4	55.1	64.4	46.2	84.1	71.9	69.8	56.2	60.1	58.3
Married	28.3	39.0	24.1	36.5	14.3	20.9	27.6	37.0	31.4	19.9
Divorce/separated/widower	4.3	5.9	11.5	17.3	1.6	7.2	2.6	6.8	7.4	21.8
Living Status										
Live with a partner/spouse	59	60.7	61.8	37.5	83.9	75.1	71	62.8	72.9	18
Don't have/live with a Partner/spouse	41	39.3	38.2	62.5	16.1	24.6	29	37	26.1	82
Occupation										
Not working	42.1	23.2	37.0	59.2	47.1	32.9	64.0	56.3	0.0	6.2
Agriculture	16.5	20.9	7.5	10.4	10.8	13.4	16.9	11.0	18.0	1.2
Professionals	3.7	9.4	2.6	5.4	3.1	13.2	8.4	7.1	12.6	12.7
Others	37.7	46.4	52.9	25.0	39.1	40.5	10.7	25.6	69.5	79.9
Migration										
Migrants	78.3	62.4	71.6	48.7	60.7	16.0	48.6	59.4	2.9	11.0
Mobility										
No	24.8	3.7	32.9	49.1	55.2	65.5	3.3	65.5	28.4	29.7
Yes	75.2	96.3	67.1	50.9	44.8	34.5	96.7	34.5	71.6	70.3
Frequency of visit to the other places										
Almost everyday	37.8	30.8	43.0	64.2	9.6	1.4	.5	1.4	54.2	48.9

Once a week or more	62.2	69.2	57.0	35.8	90.4	98.6	99.5	98.6	45.8	51.1
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R1- 2005-2007, R2- 2009-2010

Table 2 Drug use profile of IDUS										
Response categories	Manipur				Nagaland				Maharashtra	
	Bishnupur		Churachandpur		Phek		Wokha		Mumbai/Thane	
	(%)		(%)		(%)		(%)		(%)	
	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2
N	420	410	419	411	440	419	420	412	376	327
Age at first drugs (years)										
Median age of first drug use	19	22	19	23	17	20	17	20	18	22
≤20	64.5	44.1	60.9	38.4	83.2	50.4	85.0	52.4	60.6	42.8
21 - 25	22.4	19.3	29.1	21.2	13.2	25.5	13.1	28.6	21.0	22.9
26 - 30	9.3	7.6	8.1	7.3	2.7	6.7	1.7	10.9	8.5	12.8
31 - 35	1.9	1.2	1.7	1.7	.5	1.7	.2	4.9	5.6	7.6
≥36	1.9	27.8	.2	31.4	.5	15.8	0.0	3.2	4.3	13.8
Age at first injecting drugs (years)										
Median age of first injecting drug	21	21	21.2	22	19	21	21.2	24	26	25
≤20 or less	44.8	39.3	48.7	38.0	72.5	48.0	48.8	17.0	22.1	25.1
21 - 25	32.9	38.0	36.0	38.4	20.2	34.4	37.6	39.8	23.9	27.2
26 - 30	13.8	16.1	12.4	16.8	6.1	12.4	11.0	24.0	20.5	20.2
31 - 35	5.0	3.7	2.6	5.1	.7	2.6	2.1	13.3	15.2	13.5
≥36	3.6	2.9	.2	1.7	.5	2.6	.5	5.8	18.4	14.1
Duration of drug use										
Duration between first drug use and first drug injection (years)										
Mean duration	1	2.5	0.5	6.7	2.3	4.5	4.3	6.7	3.5	4.9
≤1	55.7	60.7	65.6	36.2	50.5	61.0	15.7	15.1	14.1	24.1
1-5	29.5	33.4	28.2	53.8	37.3	33.3	54.0	46.0	31.4	45.9
5-10	8.1	4.2	4.5	4.3	8.6	1.6	24.3	24.8	23.9	21.8
≥10	6.7	1.6	1.7	5.6	3.6	4.1	6.0	14.1	30.6	8.3
N	313	341.0	408	408.0	345	378.0	394	323.0	350	282
No. of partners shared needle/syringe in the past month										
None	61.0	81.2	31.4	77.9	36.2	63.5	37.8	49.5	53.4	68.4
1-2	20.1	13.2	44.6	14.5	29.9	20.1	18.3	22.6	18.0	17.0
3-4	13.7	4.1	18.4	4.2	23.5	9.0	29.2	10.2	14.0	6.4
5and above	5.1	1.5	5.6	3.4	10.4	7.4	14.7	17.6	14.6	8.2
Used Needle/syringe previously someone else has injected with										
Every time	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.8	3.4	3.2
Most of the times	10.1	3.2	2.3	0.9	3.7	2.29	11.6	31.6	4.0	9.6
sometimes	46.4	44.6	81.5	73.9	64.5	39.1	70.0	28.0	41.0	32.9
Never	42.9	52.2	16.1	25.2	31.8	58.6	18.3	39.6	51.7	54.3
Needle/ syringe cleaning practices										
Every time	39.4	31.2	61.1	43.3	53.7	43.0	51.7	25.6	50.4	26.2
Most of the times	35.3	50.0	36.5	50.9	33.0	23.1	32.1	50.6	6.4	34.8
sometimes	4.6	5.2	1.9	3.6	11.0	15.8	12.9	10.8	28.6	11.1
Never	20.8	13.6	0.5	2.2	2.3	18.1	3.3	13.0	14.7	28.0
Procurement of syringe/ needle										
NGO drop-centre	44.5	69.8	83.1	94.6	12.3	82.0	19.1	17.0	57.9	55.4
chemist' shop	49.5	23.2	15.3	4.9	85.6	17.5	80.7	81.5	40.3	42.5
drug dealer	3.3	2.0	1.4	0.0	1.6	0.2	0.2	1.2	1.3	0.9
Other	2.6	5.1	0.2	0.5	0.5	0.2	0.0	0.2	0.5	1.2

R1- 2005-2007, R2- 2009-2010

Table3 .Sexual behaviour of the injecting drug user										
	Manipur				Nagaland				Maharashtra	
	Bishnupur (%)		Churachandpur(%)		Phek(%)		Wokha(%)		Mumbai/Thane (%)	
	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2
Ever had sex with female										
No	30	14.9	20.3	10.5	15.7	6.5	8.1	5.4	11.5	7.0
Yes	70	85.1	79.7	89.5	84.3	93.5	91.9	94.6	88.5	93.0
Ever had sex with different type of female partner										
Paid partner	47.3(294)	55.3(349)	9.2(334)	25(368)	4.6(369)	8.9(390)	7.5(386)	11.5(389)	65.1(332)	69.9(103)
Non paid partner	53.1(294)	65.0(349)	46.7(334)	47.0(368)	74.3(370)	85.6(390)	84.5(386)	67.7(387)	34.0(332)	19.7(76)
Other non paid partner	11.3(292)	12.0(349)	41.6(334)	15.8(368)	66.2(370)	48.5(389)	50.8(386)	29.9(387)	83.3	45(33)
Had sex in the last 12 month with female partner										
No	28.6	18.9	21.3	29.9	5.7	4.1	2.8	24.4	44.0	34.9
Yes	71.4	81.1	78.7	70.1	94.3	95.9	97.2	75.6	56.0	65.1
Had sex in the last 12 month with different type of female partner										
Paid partner	46.0(139)	38.3(193)	51.6(31)	71.7(92)	52.9(17)	65.7(35)	65.5(29)	57.7(45)	50.7(215)	57.5(179)
Non paid partner	100(2)	79.6(54)	100(2)	95.6(23)	57.1(7)	87.5(48)	0(0)	95.8(24)	17.7(96)	61.4(44)
Other non paid partner	81.8(33)	83.3(42)	88.5(139)	98.3(58)	99.2(245)	99.5(189)	98.9(196)	99.1(116)	20(20)	90.9(33)
Sexual partner as a drug user in the last 12 month										
No	86.7	86.2	88.6	89.5	95.1	89.4	90.7	77.8	65.1	80.8
Yes	13.3	13.8	11.4	10.5	4.9	10.6	9.3	22.2	34.9	19.2
No. of female sex partner had sex with in the past 12 month										
No partner	28.6	18.9	21.3	29.9	5.7	4.1	2.8	24.4	44.0	34.9
Single partner	41.8	58.5	46.7	46.7	26.2	21.5	24.4	32.6	23.5	23.4
2-3 partner	18.0	15.5	22.8	18.8	40.5	37.4	34.7	24.4	12.7	20.1
≥4 partner	11.6	7.2	9.3	4.6	27.6	36.9	38.1	18.5	19.9	21.7
No. of female partner had sex in the past one year										
Paid partner										
None	1.6	0	0	.0	0.0	0.0	63.2	0.0	2.8	2.9
1-2 partner	54.7	63.5	75.0	72.7	66.7	52.2	31.6	76.9	39.4	39.8
3-4 partner	26.6	29.7	12.5	21.2	33.3	26.1	5.3	19.2	27.5	28.2
5 and above partner	17.2	6.8	12.5	6.1	0.0	21.7	0	3.8	30.3	29.1
Total	64	74.0	16	66	9	23	19	26	109	103
Other non paid partner										
None	18.2	16.7	11.5	1.7	.8	.5	1.0	.9	80.0	9.1
1-2 partner	39.4	76.2	71.9	70.7	62.0	51.3	45.4	64.7	15.0	51.5
3-4 partner	21.2	7.1	15.1	25.9	21.6	26.5	34.2	21.6	0.0	18.2
5 and above partner	21.2	0.0	1.4	1.7	15.5	21.7	19.4	12.9	5.0	21.2
Total	33	42	139	58	245	41	196	116	20	33
Condom use at last sex with different female partner										
Paid partner	81.3 (64)	97.3 (74)	75.0 (16)	90.9 (66)	66.7 (9)	91.3 (23)	52.6 (19)	46.2 (26)	63.9 (108)	69.9 (103)
Non paid partner	32.1 (156)	43.1 (216)	34.0 (156)	36.8 (171)	32.4 (262)	51.4 (327)	37.9 (322)	27.0 (256)	100(6)	19.7 (76)
Other non paid partner	51.5 (33)	61.9 (42)	39.6 (139)	45.6 (57)	71.8 (245)	74.5 (188)	49.2 (195)	51.3 (115)	45.5 (33)	

Table 4. STI and HIV										
	Manipur				Nagaland				Maharashtra	
	Bishnupur (%)		Churachandpur (%)		Phek (%)		Wokha (%)		Mumbai/Thane (%)	
	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2
Knowledge of STI										
N (all respondent)	420	410	419	411	440	419	420	412	376	327
No	11.0	12.2	26.3	21.7	20.7	8.6	48.8	47.0	54.3	55.4
Yes	89.0	87.6	73.7	78.1	79.3	90.9	51.2	52.3	44.9	44.6
Experienced of any STI symptom in the past one year										
No	67.1	95.1	93.6	95.6	86.4	96.7	90.0	99.5	79.3	87.2
Yes	32.9	4.9	6.4	4.4	13.6	3.3	10.0	0.5	20.7	12.8
Knowledge of HIV										
Knowledge about prevention of HIV	92.0	88.9	98.3	98.8	70.2	97.3	82.7	79.7	43.4	74.3
Feel at risk for becoming infected with HIV/AIDS	43.5	54.1	60.5	65.1	30.0	52.3	23.3	42.6	32.5	45.0
Any drug that can help treat who have HIV/AIDS	51.4	79.1	46.2	86.9	7.9	54.8	2.5	32.8	16.0	24.1
HIV testing										
Ever taken an HIV test	21.3	50.7	30.1	56.9	7.0	41.6	10.8	11.9	22.3	47.8
collection of test result	65.2	86.5	72.2	82.5	10.8	86.0	68.3	45.0	79.5	88.4
Prevalence of HIV										
positive	28.1	22.4	36.3	38.9	0.5	1.2	1.7	1.7	16.5	17.7
negative	71.9	77.6	63.5	61.1	99.5	98.6	98.3	98.1	77.9	82.3

Table 5. Logistic regression model for STI among IDUs in three states

Background characteristics	Manipur Exp(B)	Nagaland Exp(B)	Maharashtra Exp(B)
Education			
Illiterate®			
1-8 years	2.353	0.131	2.79
9-10 years	1.01	0.744	0
≥11	0.513	4.449	19.329*
Occupation			
Not working®			
Agriculture	2.353	3.287	0.155
Professionals	1.01	1.234	#
Others	0.513	0.185	#
Marital status			
Unmarried®			
Married	5.471	0.285	0.301
Separated/divorced/widower	13.368**	0	0.756
living status			
No®			
Yes	1.33	0.402	6.546
Migration			
No®			
Yes	1.924	1.851	#
Mobility			
No®			
Yes	5.567	1.167	0.607
Sexual behavior			
Had sex with diff. Female partner in past			
No®			
Yes	0.614	1.488	0.164*
Sexual partner as a drug user			
No®			
Yes	9.254**	8.090**	5.77**
Condom used last time by diff. female partner			
No®			
Yes	1.013	.154*	2.196
Age at first injecting drug			
≤20®		0.129	5.794
21-25	0.503	1.418	0.185
26-30	0.763	0	0.005*
31-35	0	0	0.005**
≥36	3.524		
Duration between first drug use first injecting			
≤1		.158*	0.636
1-5 years	1.558	0	2.792
5-10 years	0	0.891	4.794
≥10	1.851		
No. of partner shared needle/ syringe			
None		0.13	1.752
1-2	1.126	1.213	3.718
3-4	7.791*	0	6.672
5and above	0	61.742	67.865
Constant	0.001	.187	0.00

®Reference *** p<.01, **p<.05, and * p<.10 Dependent variable STI and HIV, # = Too small frequency.

Table 6. Logistic regression for HIV among IDUs in three states

Logistic regression for HIV among IDUs in Manipur			
Background characteristics	Model -1	Model-2	Model-3
	Exp(B)	Exp(B)	Exp(B)
Education			
Illiterate [®]			
1-8 years	0.928	2.914*	1.804
9-10 years	0.742	2.462	2.340
11+ years	0.505**	1.373	0.835
occupation			
Not working [®]			
Agriculture	1.551*	1.535	1.771
Professionals	0.762	0.853	0.643
Others	0.312	1.545*	1.892*
Marital status			
Unmarried [®]			
Married	1.020	1.053	0.522
separated/divorced/widower	5.118***	5.568***	4.960**
living status			
No [®]			
Yes	2.004	2.765	1.701
Migration			
No [®]			
Yes	0.607**	0.612*	0.669
Mobility			
No [®]			
Yes	0.409***	0.407**	0.334**
Injecting drug behaviour			
Age at first injecting drug			
≤20 [®] years			
21-25 years		0.606**	0.673
26-30 years		1.140	2.225**
31-35 years		0.979	1.898
≥36 years		3.046	7.977**
Duration between first drug use first injecting			
≤1 [®] years			
1-5 years		1.467*	2.036**
5-10 years		0.849	1.474
≥10 years		3.126**	6.004**
No. of partner shared needle/ syringe in the past month			
None			
1-2		1.101	1.216
3-4		1.598	5.371**
5 and above		4.848**	14.376**
Sexual behavior			
Had sex with diff. Female partner			
No [®]			
Yes			0.133***
Sexual partner as a drug user			
No [®]			
Yes			1.004
Condom used last time by diff. female partner			
No [®]			
Yes			3.173

®Reference *** p<.01, **p<.05, and * p<.10 Dependent variable STI and HIV, # = Too small frequency.

Logistic regression for HIV among IDUs in Nagaland			
Background characteristics	Model-1	Model-2	Model-3
	Exp(B)	Exp(B)	Exp(B)
Illiterate[®]			
1-8 years	1.375	4.524	16.892
9-10 years	0.000	0.000	0.000
11+ years	0.298	1.393	4.859
occupation			
Not working[®]			
Agriculture	1.755	1.046	12.656
Professionals	3.740*	3.925	43.151**
Others	0.276	0.498	2.081
Marital status			
Unmarried[®]			
Married	3.081	3.522	2.006
separated/divorced/widower	2.677	6.430	6.074
living status			
No[®]			
Yes	0.859	0.676	0.366
Migration			
No[®]			
Yes	1.904	2.177	1.570
Mobility			
No[®]			
Yes	2.777	2.020	7.343
Injecting drug behaviour			
Age at first injecting drug			
≤20[®]			
21-25		#	#
26-30		#	#
31-35		#	#
≥36		0.710	15.860
Duration between first drug and first injecting			
≤1[®] years			
1-5 years		1.358	2.497
5-10 years		0.726	0.460
≥10 years		2.484	3.427
No. of partner shared needle/ syringe in past month			
None[®]			
1-2		3.116	4.617
3-4		7.292**	7.260
5 and above		1.513	9.739
Sexual behaviour			
Had sex with diff. Female partner			
No[®]			
Yes			5.069
Sexual partner as a drug user			
No[®]			
Yes			9.306*
Condom used last time by diff. female partner			
No[®]			0.067*
Yes			

®Reference *** p<.01, **p<.05, and * p<.10 Dependent variable STI and HIV, # = Too small frequency.

Logistic regression for HIV among IDUs in Maharashtra			
Background characteristics	Model-1	Model-2	Model-3
	Exp(B)	Exp(B)	Exp(B)
Illiterate[®]			
1-8 years	2.002**	1.892*	1.714
9-10 years	3.805**	3.338*	3.326
11+ years	0.581	0.000	0.000
occupation[®]			
Not working [®]			
Agriculture	8.566*	#	#
Professionals	1.288	0.871	0.976
Others	0.788	0.652	0.574
Marital status			
Unmarried [®]	0.727		
Married	0.635	2.008	4.072
separated/divorced/widower		1.053	1.311
living status			
No [®]			
Yes	0.445	0.242*	0.166*
Migration			
No [®]			
Yes	1.621	1.286	1.561
Mobility			
No [®]			
Yes	0.865	1.085	1.960
Injecting drug behaviour			
Age at first injecting drug			
≤20 [®]			
21-25		0.910	0.682
26-30		0.605	0.683
31-35		0.432	0.135
≥36		0.241*	0.073**
Duration between first drug and first injecting			
≤1 [®] years			
1-5 years		2.461**	3.004*
5-10 years		1.766	0.982
≥10 years		1.832	5.872
No. of partner shared needle/ syringe in past month			
None [®]			
1-2		1.189	0.567
3-4		1.845	4.000*
5 and above		2.553	1.715
Sexual behaviour			
Had sex with diff. Female partner			
No [®]			
Yes			1.130
Sexual partner as a drug user			
No [®]			
Yes			1.407
Condom used last time by diff. female partner			
No [®]			
Yes			2.287

®Reference *** p<.01, **p<.05, and * p<.10 Dependent variable STI and HIV, # = Too small frequency.