



**HIV/AIDS in Manipur, India:
An Annotated Bibliography**

December 2005

www.yale.edu/cira/parivartan

HIV/AIDS in Manipur, India: An Annotated Bibliography

Search History

This literature review was generated through the systematic search of several online databases including Medline, Sociological Abstracts, and Social Sciences Citation Index to locate peer-reviewed literature, as well as Google.com to locate gray literature. Search terms used include: Manipur, Nagaland, HIV, AIDS, IDU, drug trade, heroin, drug trafficking, sex work(er), female sex worker, commercial sex worker, and prostitute/prostitution. The review revealed that the vast majority of peer-reviewed literature available on HIV/AIDS and IDUs in India's northeast focuses on Manipur. In fact, no articles could be found highlighting the situation in Nagaland; thus, this review focuses solely on Manipur.

Summary

Manipur, a small state with a population of only 2.4 million in the northeast region of India, has the highest concentration of HIV infection in the country.¹ Currently, Manipur, despite being home to only 0.2% of the national population, accounts for nearly 17% of India's total known HIV cases. The state has approximately six times the HIV prevalence of the next most affected state, Maharashtra, and 20 times the HIV rate of the country's third most affected state, Tamil Nadu (Beyrer, et al.). Injection drug use has been the predominant mode of transmission of the infection, though there is now evidence that HIV/AIDS has spread to the wives and children of injection drug users (IDUs), and thus into the general population.

History and geography of the northeast

The northeastern region of India consists of seven states: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura, whose combined population (32 million) makes up approximately 3.7% of the country. Manipur, a landlocked state, borders Nagaland on the North, Assam on the West, Mizoram on the South, and Myanmar (also known as Burma) on the East. It is one of the poorest, least developed areas of India. In fact, the 1996 per capita income was estimated at around 3,500 Rupees/year, about one-third of the Indian national average. This is exacerbated by conflict and ethnic tension, which have wracked the region for years. The political situation is complex, characterized by inter-ethnic conflict, armed separatist movements demanding political autonomy, and a constant influx of migrants and refugees into Manipur from Myanmar. There is a long-standing and fierce conflict between the Kukies and the Nagas, the two dominant tribal groups of the region, which has almost reached the level of "ethnic cleansing" (Thomas, et al.). Border Security Forces, special divisions of the Indian Armed Forces, continuously patrol the area and paramilitary Central Reserve Police Forces are in place to control the insurgencies as well as the constant influx of migrants and refugees that flow into Manipur from Myanmar.

Drug trafficking

Manipur shares a 358-kilometer border with Myanmar, which is the site of extensive drug trafficking. This drug trade brings high quality heroin into Manipur, which is the drug of choice for the majority of the state's IDUs. Manipur's thriving drug trade is primarily due to its geographical vicinity to Myanmar and the 'Golden Triangle,' the area where Myanmar, Thailand, and Laos converge, and where heroin is refined in mass amounts and sent out to neighboring areas. Manipur's location on the route of National Highway 39 (NH 39) also makes it highly vulnerable to drug trafficking. Studies show that the geographic presence of IDUs correlates clearly with the path of the national highway (Sarkar, et al.).

¹ HIV prevalence in Manipur, as of 2003, was 1.25%.

The 'Golden Triangle' has been a major center of opium poppy cultivation since at least the 19th century, but in the last 15 to 20 years the center of production has shifted as Thailand's production has drastically reduced and that of Myanmar has increased (bringing the center of production closer to Manipur). Cross-border trade is poorly monitored, and one of the main trade routes goes across the India-Myanmar border from Moreh (India) to Thamu (Myanmar). Users travel by truck inland to Mandalay to purchase heroin and test the drug (which often results in needle sharing with traders). A 1993 article in the *Bulletin on Narcotics* reports that knowledge of safe needle use is very low among Manipur's IDUs, and needles are rarely cleaned and commonly shared (Sarkar, et al.). Most studies report that education regarding safe injection techniques is severely lacking.

Relationship between heroin availability and HIV rates

Heroin from Myanmar began to appear in Manipur in 1982-84 after which availability rose sharply. Heroin trafficking reached a peak after 1990, mirrored by a startling increase in HIV prevalence in the state. IDUs form the majority of victims to HIV/AIDS in Manipur, and the northeast in general. Indeed, according to a 1999 article in *AIDS Care*, some 70% of Manipur's IDUs were HIV positive (Beyrer). Kohima, the capital city of Nagaland and termination of NH 39, shows a similar prevalence of HIV infection among its smaller, but still substantial, IDU population. Between 1990 and 1991, as drug availability increased, HIV prevalence in Manipur rose from under 1% among IDUs to over 50%. By 1997, prevalence among IDUs had reached 80%. A more recent estimate in 2004 by UNAIDS reports a combined prevalence of HIV among injection drug users in Manipur and Nagaland as 56%. According to a 2002 UNAIDS report, approximately 75% of Manipur's HIV cases are among IDUs. Data discussed in a 1999 *AIDS Care* article indicate that the highest concentration of cases are found in the capital, Imphal (69%), and the district of Churachandpur, which includes Moreh (8.6%) (Beyrer, et al.).

The linked issues of injection drug use and HIV/AIDS in Manipur are particularly problematic due to the social stigma involved. A 1997 article in the *Journal of Reproductive Medicine* suggests that the sense of immorality often connected with drug use and HIV/AIDS often hinders awareness-raising regarding the public health implications of the disease. In particular, religious leaders who often have significant influence even beyond the religious community, view drug use as 'antisocial' and 'immoral'. The same article also describes the discrimination faced by IDUs within the health system; known seropositive IDUs were frequently discharged from the hospital and confidentiality and anonymity of HIV testing among IDUs was often not maintained (Hangzo et al.).

Articles in the following annotated bibliography are organized as follows:

- I. HIV/AIDS and the drug trade
- II. HIV/AIDS and the sex work industry
- III. HIV prevention/treatment/awareness interventions with IDUs
- IV. Miscellaneous

I. HIV/AIDS and the drug trade

1. Mirante, E. (1993). "Drug Injecting in Manipur, India. The Burma Connection." *AIDS & Society*, Vol. 4, No. 2, p. 4.

Abstract: 25% of India's HIV positive cases come from the northeast states of Manipur, Mizoram, and Nagaland, which have only 3% of the country's total population. The reason is access to Burmese heroin just over the border, which is poorly monitored. The Meiteis, Kukis, and Nagas ethnic groups are known for their young people's involvement with drug use in urban as well as rural areas. True

rehabilitation programs are in small numbers. There are a few noncoercive 12-step Narcotics Anonymous type centers and counseling programs in Manipur; the Kripa Foundation is one such small program. Examples of other treatment include a Christian group program which chains addicts by the ankles or incarcerates addicts on petty theft charges in order to make available to them detoxification and vocational training. Jails such as the one of Imphal run experiments in herbal medicine and "sweat therapy" for addicts. Clearly, there is a need for a greater investment in addict rehabilitation.

Notes: Although rehabilitation is important in a place such as Manipur where the HIV infection rate is already so high due to drug use, monitoring drug use is equally important. The article explains the existence of non-coercive 12-step programs and other experimental methods for treating drug addicts. However, there is a great need for more programs. The traffic of heroin must also be monitored so that the rate of addiction levels off and the rate of HIV infection from sharing needles levels off as well.

2. Gammelgaard, J. (1992). "Shifts in drug-taking threaten Asia." *WorldAIDS*, No. 21, pp. 5-6.

Abstract: Infection with the human immunodeficiency virus (HIV) is spreading rapidly among injection drug users (IDUs), particularly in countries of the Golden Triangle where Myanmar (Burma), Thailand, and Laos converge and the pure heroin China White is refined. Thailand, Myanmar, Hong Kong, Malaysia, Singapore, the southern provinces of China, and the northeastern states of Mizoram, Manipur and Nagaland in India are affected. Infection has reached 50% and more in some groups of IDUs in these countries. In Thailand, 63% of the 23,845 known cases of HIV infection are among an estimated 400,000 IDUs. It is estimated that Myanmar has 160,000 IDUs, of whom half are infected with HIV, and among 85,000 IDUs tested, 85% were infected. The Myanmar sector of the Golden Triangle produces double the amount of the mid-1980s, more than 2000 tons of raw opium a year impaction northeastern India and China's southwest Yunnan province. The HIV infection rate among IDUs tested in Manipur was 50% in 1991, and 40% of an estimated 10,000 IDUs in neighboring Nagaland carry the virus. In China 398 of the 493 registered HIV cases are among IDUs in Yunnan. In Malaysia, there are nearly 4000 cases of HIV infection, approximately 80% of which are IDUs. The epidemic of heroin injection swept over Asia in the last decade, since Afghanistan, Pakistan, and Iran were major heroin producers. An estimated 10 of Karachi's 8 million population uses drugs. Criminal syndicates in Pakistan, Afghanistan, and India control production, manufacture and wholesale distribution of heroin using sophisticated systems. Addiction is punishable in only a few countries, as most countries distinguish between the selling of drugs and consumption. WHO placed the interdiction of IDUs and HIV in Asia on its agenda at a meeting in Thailand, in October 1991, to prevent a shift toward drug injecting in countries where drugs are still largely inhaled.

Notes: This study notes an increasing shift to the use of injected drugs and argues that the lack of coherent policies against using injected drugs is sure to have an effect on the HIV/AIDS transmission rates in Asia. Since the infection rates have become so high among certain IDU groups, it is probable that the infection will continue to increase in frequency as well as spread to the wives and unborn children of IDUs.

3. Sarkar, K., S. Panda, et al. (1997). "Relationship of National Highway with injecting drug abuse and HIV in rural Manipur, India." *Indian Journal of Public Health*, Vol. 41, No. 2, pp. 49-51.

Abstract: Earlier study reported that about 1% of general population or urban Manipur was injecting drug users (IDUs). A study was conducted to observe the IDU prevalence in rural Manipur and the role of national highway (NH) in determining the IDU prevalence if any. It was also aimed to study

the HIV prevalence among IDUs of different villages. Villages were stratified into 3 categories based on distance and communication facilities from the national highway, which cuts across the villages to the neighboring state, Nagaland. Villages close to NH had the highest IDU prevalence of 1.3% and remote villages had the least prevalence of 0.2% whereas villages in between the above mentioned two groups had a prevalence of 0.9%. It was surprisingly observed that HIV was uniformly distributed among the IDUs of all villages and ranged from 50-51%. This indicates that IDU prevalence at distance is predominantly determined by the presence of drug trafficking route/s like national highway whereas HIV prevalence is mainly determined by the needle sharing behaviour of IDUs.

Notes: This article details the correlation between the use of injection drugs and the existence of a national highway system. It concludes that in areas where there is no national highway system there is a consistently lower prevalence of injection drug use, and in areas that contain a national highway system the prevalence of injection drug use is consistently high. The rate of HIV infection is consistent among IDUs, whether they are near a national highway system or not.

4. Sarkar, S., S. Panda, et al., (1995). "A cross-sectional study on factors including HIV testing and counseling determining unsafe injecting practices among injecting drug users of Manipur." Indian Journal of Public Health, Vol. 39, No. 3, pp. 86-92.

Abstract: In India, a steep increase in the prevalence of HIV (0% to 50% within six months) among the IDUs has been reported in Manipur, a north eastern state in 1990. In spite of large scale intervention program like educational campaign and widespread voluntary HIV testing in this state, the infection has quickly spread to the heterosexual population at large. The determinants of risk taking behaviors like sharing of unclean needle among the IDU population has been explored in this paper. A cross sectional study has been carried out among all of the 488 IDUs who attended any detoxification centers and prison during last two years at Imphal, the capital city of this state. Self reported behaviors based on the pre-scheduled interview were recorded and participation rate was satisfactory. The data was compared to a similar survey carried out by us in 1990. Although there has been decline in risk behavior among the IDUs, a logistic regression analysis reveals that unsafe needle sharing behavior is not influenced by the knowledge on HIV transmission, educational status or history of HIV testing or serostatus of the individual. The limitation of cross sectional nature of the study, bias due to collection of data in prison, self reported behavior, possible differences with street samples of the addict are discussed.

Notes: This article details the role of injection drug use in the increase of HIV infection in Manipur. It concludes that behavior in needle sharing is not influenced by HIV knowledge or the educational programs implemented.

5. Beyrer, S., M. H. Razak, et al. (2000). "Overland heroin trafficking routes and HIV-1 spread in south and south-east Asia." AIDS, Vol. 14, No. 1, pp. 75-83.

Abstract: OBJECTIVES: Burma produces approximately 60% of the world's heroin, Laos is the third leading producer. Recent outbreaks of injecting drug use and HIV-1 in Burma, India, China, and Vietnam have been associated with Burmese and Laotian overland heroin trafficking routes. We analyzed findings from narcotics investigations, molecular epidemiology studies of HIV-1, and epidemiologic and behavioral studies of injecting drug use, to evaluate the roles that the heroin export routes play in the spread of drug use and HIV-1 in south and south-east Asia. METHODS: We reviewed the medical and narcotics literature, the molecular epidemiology of HIV, and did key informant interviews in India, China, and Burma with injecting drug users, drug traffickers, public health staff, and narcotics control personnel. RESULTS: Four recent outbreaks of HIV-1 among injecting drug users appear linked to trafficking routes. Route 1: From Burma's eastern border to China's Yunnan Province, with initial spread of HIV-1 subtype B, and later C. Route 2: Eastern

Burma to Yunnan, going north and west, to Xinjiang Province, with B, C, and a B/C recombinant subtype. Route 3: Burma and Laos, through northern Vietnam, to China's Guangxi Province, subtype E. Route 4: Western Burma, across the Burma-India border to Manipur, predominant subtype C, and B and E. CONCLUSIONS: Overland heroin export routes have been associated with dual epidemics of injecting drug use and HIV infection in three Asian countries and along four routes. Molecular epidemiology is useful for mapping heroin routes. Single country narcotics and HIV programs are unlikely to succeed unless the regional narcotic-based economy is addressed.

Notes: This article details the role of heroin export routes and their effect on the spread of HIV infection. It argues that the spread of HIV can be attributed to four specific trafficking routes through Manipur.

II. HIV/AIDS and the sex work industry

There are also two articles, below, that discuss the connection between HIV/AIDS in Manipur and the sex work industry. These articles do not contain in-depth research or fieldwork regarding sex work in Manipur, nor do they provide a thorough picture of the industry. They do not describe what types of sex work exist, whether the industry is largely brothel-based, secret, or otherwise, etc. The Agarwal et al. article briefly suggests that sex work is largely not based in brothels, and that the number of commercial sex workers (CSWs) is highest in Churachandpur (Moreh), the drug trafficking center. The article reports that HIV prevalence among IDUs who are also sex workers is 9.4 times higher than among non-IDU CSWs, and that prevalence is 5 times higher among CSWs with an average of more than 2 customers a day.

1. Panda, S., L. Bijaya, et al. (2001). "Interface between drug use and sex work in Manipur." The National Medical Journal of India, Vol. 14, No. 4, pp. 209-11.

Abstract: BACKGROUND: In India, drug use is seen predominantly as a problem among men. This study attempts to address the interface between drug use and sex work among women drug users in Manipur and the prevalence of HIV, hepatitis B and other sexually transmitted infections in them. METHODS: This cross-sectional survey was conducted between April and October 1997 at the time of an ethnic clash in imphal, the capital of Manipur. Sixty-nine women drug users were interviewed through street-based outreach workers; 38 women (55%) were injecting drug users. Data were generated with the help of a semi-structured questionnaire on sociodemography, drug use practice and health issues after obtaining informed consent from the participants. Subsequently, consent was also obtained from 60 respondents for collecting blood for unlinked anonymous tests for HIV and hepatitis B surface antigen. Clinical examination for reproductive tract infections, offered to all the study participants, generated data on sexually transmitted diseases. RESULTS: The prevalence of HIV infection in injecting drug users was 57% (20/35) compared to 20% (5/25) among non-injecting drug users ($p = 0.001$), although the prevalence of hepatitis B surface antigen was similar in the two groups, 48% v. 56%, respectively. Eighty per cent of the respondents, many of whom migrated following the ethnic clash, reported having sex with non-regular partners, two-thirds reported sex in exchange for money or drugs. Eighty-one per cent (29/36) of women who agreed to have a clinical examination had abnormal vaginal discharge, of which 10 had endocervical discharge. The presence of infection was confirmed in only 24% of those with vaginal discharge--4 had bacterial vaginosis and 3 trichomoniasis. CONCLUSION: Environmental interventions to reduce civil unrest and forced migration have an important role to play in HIV containment. The high rate of HIV infection, and the probability of a high rate of sexually transmitted infections in women drug users suggests that a targeted intervention in this population group is a public health need. An innovative outreach strategy should be designed for effective implementation of interventions among women injecting drug users

and non-injecting drug users who operate from the streets as sex workers to support their drug habit as well as livelihood.

Notes: The article discusses the possible links between sex work, drug use and rates of HIV or hepatitis infection. It finds that HIV rates among IDUs are much higher than that of non-IDUs. However, the incidence of hepatitis infection was similar between the two groups, which suggests that hepatitis infection may be related to sexual practices rather than injection drug use since most of the women reported having sex with non-regular partners for money or drugs.

2. Agarwal, A. K., G. B. Singh, et al. (1999). "The prevalence of HIV in female sex workers in Manipur, India." *The Journal of Communicable Diseases*, Vol. 31, No. 1, pp. 23-8.

Abstract: Data on STDs and sexual practices in commercial sex workers (CSWs) is in general limited in India. Manipur in north-east Indian has a high prevalence of HIV in injecting drug users but the rate in CSWs is not known. The site selected for the study was Moreh, on the Myanmar border of Manipur. One hundred blood samples were collected, 7 from migrants from Myanmar, the remainder from Manipuri women. The HIV seropositivity rate was 12% (95% CI = 5.6-18.4). The age of the women ranged from 15 to 42 (mean = 24.5 years, median 23.7 years). The proportion of HIV positives increased significantly with number of customers per day and number of years in the profession. The HIV prevalence among Injecting drug using CSWs was 9.4 times higher than among non-IDU CSWs. Vaginal discharge was strongly associated with HIV positivity. Effective intervention programmes among CSWs in Manipur to prevent further spread of HIV are strongly indicated by the results of this study.

Notes: The article discusses a small study of 100 women in an attempt to gain knowledge regarding the prevalence of STDs and about the sexual practices of female sex workers. Though the study was very small in scope, it concludes that HIV prevalence among sex workers using injection drugs is almost ten times higher than the HIV prevalence among their non-injecting counterparts.

3. Singh, et al. (2005). "Increasing trend of HIV seropositivity among commercial sex workers attending the Voluntary and Confidential Counseling and Testing Centre in Manipur, India." *International Journal of STD & AIDS*, Vol. 16: 166-169.

Abstract: A total of 1903 commercial sex workers (CSWs) attending the Voluntary and Confidential Counseling and Testing Centre at the Department of Microbiology, Regional Institute of Medical Sciences, Manipur, were screened for HIV infection over a period of five years from March 1998 to February 2003. All cases were in the age group 13-55 years. Most cases were in the age group 20-30 years (50.86%). Out of 1903 CSWs, 304 were found to be HIV-seropositive, confirmed by three tests (ELISA/RAPID/SIMPLE) of different biological antigen principles according to India's National AIDS Control Organisation guidelines. The annual rising trend in incidence of HIV seropositivity among CSWs from March 1998 (10.93%) to February 2003 (29.68%) was observed in the test site attenders, in contrast to the declining trend among injecting drug users in the state from March 1998 (76%) to February 2003 (59.82%). In all, 622 sexually transmitted infection (STI) cases were diagnosed, of which 242 (38.90%) had syphilis, which was the commonest STI, and 172 (27.65%) had ulcerative lesions. Increasing HIV seropositivity among CSWs observed in this study reflects the changing pattern of HIV transmission in Manipur.

Notes: In this study, 1903 CSWs were tested for HIV in Manipur. Three hundred four (304, 15.97%) were HIV positive. There were 41 new cases in 1998, 111 in 2000, 21 in 2001, and 93 in 2002. Sex work was reported to be practiced by 46% of sex workers regularly and 54% occasionally (not defined). Fifty percent were 20-30 years old. There were two types of CSWs: free CSWs and CSWs who work through agents. Free CSWs blend in with non-CSWs easily, work independently with no middleman, and carefully build up circles of clients. CSWs who work through agents are more numerous and popular, have a particular dressing style and fashion, and are usually more experienced

and older than free CSWs. Some are married (including divorcees and widows). There are no red light districts in Manipur. Transmission through IDUs accounts for 59.82% of all HIV cases in Manipur. Manipur has .21% of India's population, but 4.22% of HIV cases. Heroin is locally known as "No. 4." Regular use of heroin and alcohol was reported by 17.34% of CSWs.

III. HIV prevention/treatment/awareness interventions with IDUs

1. Hangzo, C., A. Chatterjee, et al. (1997). "Reaching out beyond the hills: HIV prevention among injecting drug users in Manipur, India." *Addiction*, Vol. 92, No. 7, pp. 813-20.

Abstract: Outreach interventions using ex-IDUs to inform and educate their peers about HIV/AIDS prevention measures have been found to be effective in the United States and other developed countries. While HIV/AIDS prevention programmes targeting IDUs have also been implemented in a number of developing countries, very little information is available on the process of implementation of these programmes. This paper attempts to document some of this knowledge by describing the implementation process of an outreach intervention targeting IDUs in a small town--Churachandpur--with high injection drug use and high HIV infection rates, in the north-eastern state of Manipur. The paper describes the barriers encountered in implementing the outreach and how these barriers were minimized. In conclusion, the paper makes the case for targeting outreach to the larger community before targeting the IDUs.

Notes: This paper describes the barriers encountered in implementing HIV/AIDS prevention interventions among IDUs, such as discrimination and a lack of existing services. It describes an outreach effort targeted towards IDUs in Churachandpur, and makes the case for targeting outreach to the larger community before targeting IDUs specifically.

2. Eicher, A.D., N. Crofts, et al. (2000). "A certain fate: spread of HIV among young injecting drug users in Manipur, North-East India." *AIDS CARE*, Vol. 12, No. 4, pp. 497-504.

Abstract: This study aimed to measure risk behaviours and seroprevalence of HIV and hepatitis C virus in IDUs in Manipur, North-East India, and evaluate the impact of the recently established Syringe and Needle Exchange Program (SNEP). Sampling strategy was based on social networks. Peer interviewers administered the study questionnaire and collected blood for anti-HCV and anti-HIV testing. One hundred and ninety-one IDUs (85% male) took part. Average age at first injection was 19 years and average length of time injecting was 3.7 years. The main drug currently injected was heroin (66%). Most (93%) reported having shared injecting equipment and only 42% had used the SNEP. Three-quarters (74.7%) were infected with HIV and almost all (98%) with HCV. Age ($p < 0.001$) and length of time injecting ($p < 0.001$) were significantly associated with being HIV-positive. Over two-thirds were sexually active, but only 3% consistently used condoms. Almost three-quarters of IDUs in this study were infected with HIV, most within the first two years of injecting, indicating infection continues to spread at very high rates. Unsafe sexual practices place partners of infected IDUs at risk of infection. The SNEP must increase its coverage to young and new IDUs before they are exposed to blood-borne viruses.

Notes: This study aims to measure risk behaviors and seroprevalence of HIV and hepatitis C in IDUs in Manipur, as well as to evaluate the impact of the recently established SNEP program (Syringe and Needle Exchange Program). The SNEP program distributed sterile syringes and condoms, as well as collected used needles and syringes from registered clients. Only 42% of the IDUs surveyed were in contact with the SNEP. Results showed a positive association between condom use and SNEP contact.

3. Sarkar, S., S. Panda, et al. (1995). "A cross-sectional study on factors including HIV testing and counseling determining unsafe injecting practices among injecting drug users of Manipur." Indian Journal of Public Health, Vol. 39, No. 3, pp. 86-92.

Abstract: In India, a steep increase in the prevalence of HIV (0% to 50% within six months) among the IDUs has been reported in Manipur, a north eastern state in 1990. In spite of large scale intervention program like educational campaign and widespread voluntary HIV testing in this state, the infection has quickly spread to the heterosexual population at large. The determinants of risk taking behaviors like sharing of unclean needle among the IDU population has been explored in this paper. A cross sectional study has been carried out among all of the 488 IDUs who attended any detoxification centers and prison during last two years at Imphal, the capital city of this state. Self reported behaviors based on the pre-scheduled interview were recorded and participation rate was satisfactory. The data was compared to a similar survey carried out by us in 1990. Although there has been decline in risk behavior among the IDUs, a logistic regression analysis reveals that unsafe needle sharing behavior is not influenced by the knowledge on HIV transmission, educational status or history of HIV testing or serostatus of the individual. The limitation of cross sectional nature of the study, bias due to collection of data in prison, self reported behavior, possible differences with street samples of the addict are discussed.

Notes: This study explores the determinants of risk taking behaviors among IDUs in Manipur. All of the 488 IDUs who attended any detoxification centers or prison between August 1991 and July 1993 participated in this cross-sectional study. The authors determine that although there has been decline in risk behavior among IDUs, analysis reveals that unsafe needle sharing behavior is not influenced by increased knowledge of HIV transmission, educational status, history of HIV testing, or serostatus of the individual.

4. Panda, S., L. Bijaya, et al. (2001). "Interface between drug use and sex work in Manipur." The National Medical Journal of India, Vol. 14, No. 4, pp. 209-11.

Abstract: **BACKGROUND:** In India, drug use is seen predominantly as a problem among men. This study attempts to address the interface between drug use and sex work among women drug users in Manipur and the prevalence of HIV, hepatitis B and other sexually transmitted infections in them. **METHODS:** This cross-sectional survey was conducted between April and October 1997 at the time of an ethnic clash in imphal, the capital of Manipur. Sixty-nine women drug users were interviewed through street-based outreach workers; 38 women (55%) were injecting drug users. Data were generated with the help of a semi-structured questionnaire on sociodemography, drug use practice and health issues after obtaining informed consent from the participants. Subsequently, consent was also obtained from 60 respondents for collecting blood for unlinked anonymous tests for HIV and hepatitis B surface antigen. Clinical examination for reproductive tract infections, offered to all the study participants, generated data on sexually transmitted diseases. **RESULTS:** The prevalence of HIV infection in injecting drug users was 57% (20/35) compared to 20% (5/25) among non-injecting drug users ($p = 0.001$), although the prevalence of hepatitis B surface antigen was similar in the two groups, 48% v. 56%, respectively. Eighty per cent of the respondents, many of whom migrated following the ethnic clash, reported having sex with non-regular partners, two-thirds reported sex in exchange for money or drugs. Eighty-one per cent (29/36) of women who agreed to have a clinical examination had abnormal vaginal discharge, of which 10 had endocervical discharge. The presence of infection was confirmed in only 24% of those with vaginal discharge--4 had bacterial vaginosis and 3 trichomoniasis. **CONCLUSION:** Environmental interventions to reduce civil unrest and forced migration have an important role to play in HIV containment. The high rate of HIV infection, and the probability of a high rate of sexually transmitted infections in women drug users suggests that a targeted intervention in this population group is a public health need. An innovative outreach strategy should be designed for effective implementation of interventions among women injecting

drug users and non-injecting drug users who operate from the streets as sex workers to support their drug habit as well as livelihood.

Notes: This study reports the findings of a cross-sectional survey that was conducted between April and October 1997 among 69 women drug users (some IDUs and some not) in Imphal, Manipur. The study found that the prevalence of HIV infection in IDUs was 57%, compared to 20% among non-IDUs.

5. Panda, S., A Chatterjee, et al. (2000). "Transmission of HIV from injecting drug users to their wives in India." *International Journal of STD & AIDS*, Vol. 11, pp. 468-73.

Abstract: We aimed to identify factors associated with transmission of human immunodeficiency virus (HIV) from injecting drug users (IDUs) to their wives in Manipur, northeast India, where the prevalence of HIV among IDUs is 80% via a case-control study. One hundred and sixty-one HIV-infected IDUs and their wives were recruited from September 1996 to August 1997 inclusive. HIV status was determined by enzyme-linked immunosorbent assay (ELISA) plus Western blot. Interviews were administered anonymously. Regression analysis identified factors associated with transmission of HIV from IDU husbands to their non-injecting wives. Seventy-two wives (45%) were HIV-positive. Only 15% of the couples reported regular usage of condoms during intercourse. On multivariate analysis, a sexually transmitted disease (STD) in either member, reported by the husband, estimated duration of HIV in the husband for >8 years, and a history of blood transfusions were associated with infection in the wife. In conclusion, STDs are associated with transmission of HIV from husband to wife. Improved control of STDs, condom promotion, and improved blood screening are urgently needed in Manipur.

Notes: 161 HIV-infected IDUs and their wives were recruited for this study between September 1996 and August 1997. The study found that 45% of the wives were HIV positive and only 15% of the couples reported regular usage of condoms.

IV. Miscellaneous

1. Sarkar, S., N. Das, et al. (1993). "Rapid spread of HIV among injecting drug-users in north-eastern states of India." *Bulletin on Narcotics*, Vol. 45, No. 1, pp. 91-105.

Abstract: Manipur, a north-eastern state of India bordering Myanmar, has experienced very rapid transmission of the human immunodeficiency virus (HIV) among its vast drug-injecting population. Seroprevalence among intravenous drug users increased from 0 per cent in September 1989 to 50 per cent within six months. With a minimum injecting population of 15,000 and seropositivity of over 50 per cent, the infection quickly spread to the population at large. One per cent of antenatal mothers tested seropositive by 1991. Forming part of the area of South-East Asia known as the Golden Triangle, and producing opium and its derivatives, Myanmar shares a long international border with four States of the region, and populations with a common language and culture move freely across borders. Two other north-eastern states of India bordering Myanmar have faced a similar epidemic within a short period of time. As a result of serosurveillance for HIV since 1986, the epidemic could be detected at an early stage. The present paper provides an account of the results of ongoing comprehensive studies conducted in the north-eastern states of India on drug-related HIV infection, already a serious problem, but possibly still restricted to that region of the country. The prevalence of intravenous drug users, their HIV serological status, the demographic profile, risk behaviour, the spread of the infection to other groups and the problems of harm minimization are also covered.

Notes: This article provides a good (although slightly outdated) overview of HIV/AIDS in Manipur. It also discusses the prevalence and history of IDUs and the growth of HIV/AIDS in the state.

2. Thomas, J. and M. Bandyopadhyay (1999). “Ethnic Minorities and their vulnerability to AIDS in a border state of India.” AIDS CARE, Vol. 11, No. 1, pp. 45-60.

Abstract: To successfully stall the spread of HIV/AIDS among the ethnic minorities in India, it is imperative that we not only understand the complexity of issues in India with regard to HIV spread among ethnic groups but also comprehend that straightforward measures that might have worked in the context of other countries may not work in the Indian context. The authors present field work data and the results of interviews with 635 opinion leaders from eight 'tribal groups' from the north eastern border state of Manipur in India where a high rate of HIV infection is reported among the IDUs (intravenous drug users). The study found community support for AIDS, sex and drug education, along with an increasing perception of social vulnerability. Even though respondents perceive the threat of infection, few feel that they are personally susceptible. As HIV/AIDS prevention programmes compete with other socioeconomic conditions, the prevention blue print must be tailored to meet diverse demands in the study area and of the ethnic minorities in India.

Notes: This article presents fieldwork data and the results of interviews with opinion leaders from eight “tribal groups” in Manipur. The study aimed to “document aspects of community response to HIV/AIDS and to identify gaps in existing AIDS prevention programs”. Interestingly the study found significant community support for AIDS, sex, and drug education. The authors conclude “the [AIDS] prevention blue print must be tailored to meet diverse demands in the study area and of the ethnic minorities in India.”

3. Bhagat, R. (2002). “HIV/AIDS in Manipur: In the ‘state’ of despair.” The Hindu Business Online, July 10, 2002.

Abstract: No abstract available.

Notes: This 2002 online newspaper article describes the overall HIV/AIDS situation in Manipur. It discusses the connection between IDUs and the disease, as well as NGOs in Manipur acting on AIDS issues, and the consequences of needle sharing.

4. Riehmman, K.S. (1996). “Injecting Drug Use and AIDS in Developing Countries: Determinants and Issues for Policy Consideration.” Paper prepared for the Policy Research Report on AIDS and Development, World Bank, Policy Research Department, October.

Abstract: No abstract available.

Notes: This is a very useful, basic document on the connection between HIV/AIDS and injecting drug use. It presents an overview of levels of HIV infection among drug users in various countries, and discusses the role of the IDU population in introducing HIV into the general population (IDUs as a “bridge population”), the factors influencing the global diffusion of heroin and injecting drug use, practices that facilitate the spread of HIV among IDUs, and possible interventions to reduce HIV transmission among IDUs.