

## Injection drug use and HIV/AIDS transmission in China

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### ABSTRACT

After nearly three decades of being virtually drug free, use of heroin and other illicit drugs has re-emerged in China as a major public health problem. One result is that drug abuse, particularly heroin injection, has come to play a predominant role in fueling China's AIDS epidemic. The first outbreak of HIV among China's IDUs was reported in the border area of Yunnan province between China and Myanmar where drug trafficking is heavy. Since then drug-related HIV has spread to all 31 provinces, autonomous regions and municipalities. This paper provides an overview to HIV/AIDS transmission through injection drug use in China. It begins with a brief history of the illicit drug trade in China, followed by a discussion of the emergence of drug related AIDS, and a profile of drug users and their sexual partners who have contracted the virus or who are vulnerable to infection. It ends by summarizing three national strategies being used by China to address both drug use and AIDS as major health threats.

**Keywords:** injecting drug use, China, HIV/AIDS, drug trafficking, methadone.

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### INTRODUCTION

Although sexual transmission accounts for most of the AIDS epidemic globally, HIV/AIDS among injecting drug users (IDUs) is a growing problem worldwide. First detected in China in 1989 among drug abusers on the Yunnan border, HIV/AIDS subsequently has spread along the various drug trafficking routes of the country and has now penetrated all 30 of its provinces. As a result, the country has adopted urgent countermeasures to effectively prevent and control both drug abuse and HIV/AIDS. This paper summarizes the epidemiology, social behaviors, and national strategies of China in addressing drug abuse and HIV/AIDS as dual epidemics.

### HISTORY OF DRUG ABUSE IN CHINA

China has a long history of opium use. As early as 700 BC, ancient Arabians first trafficked opium into China where it was used primarily for medical treatment [1]. During the 16<sup>th</sup> century, the British imported Indian opium into China as a medium of exchange for Chinese-manufac-

ured goods and tea. The Opium wars represent a failed attempt to limit drug trafficking into China. Since then, opium has been widely planted and smoked. By 1949, 20 million people (about 5% of the population) were estimated to be addicted to opium [2]. Following the founding of the People's Republic of China in 1949, extensive and strict campaigns were launched to eliminate the production and availability of opium. Within three years, China wiped out most opium abuse to become essentially drug-free for the next three decades.

### CURRENT STATUS OF DRUG ABUSE IN CHINA

Since 1980, with the opening of its borders and major changes in its economic market structure, opium and heroin use re-emerged in China as serious health concerns. China functions as a transit route for drug smuggling in Asia due to its geographic location, a condition that increases population vulnerability to heightened drug use. Opium, heroin and other illicit drugs enter mainland China from the Golden Triangle region, Golden Crescent and other borders [3]. The trafficking routes of Golden Triangle lead out of Myanmar into Yunnan, and then go east to Nanning and Guangzhou or Hong Kong, or north to Urumchi through Sichuan. About 60% of drugs produced

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in the Golden Triangle, such as heroin, opium, and “ice” (crystal methamphetamine) are reported to be trafficked through China. Heroin and opium also are smuggled into Xinjiang from the Golden Crescent, then enter mainland or coastland China through Gansu. Evidence shows that increasing amounts of these drugs are consumed along these routes and in other parts of China, including Guangxi, Guangdong, Guizhou, Sichuan, Shanxi, Gansu, Inner Mongolia, Shanghai and Beijing.

With increased drug availability along its borders and penetrating into its provinces, drug abuse has risen concurrently and dramatically in China. According to the Ministry of Public Security of the People’s Republic of China, 70,000 drug abusers were registered in China in 1989. By 2004, the figure rose to 1,140,000 (see Fig. 1) with 73.5% (2101) of China’s county/cities represented. Of these, 217 counties reported cases above 1,000 [4]. Meanwhile, repeated cross-sectional surveys in five provinces with a high prevalence of illicit drug use found that the one-year prevalence of drug use in the general population increased from 0.91% in 1993 to 1.17% in 1996 [5, 6]. Such statistics suggest that the incidence of new injectors has remained high and will continue into the future unless successfully checked.

Most drug abusers in China tend to be young, less educated, unmarried, and without a stable occupation [7]. Although typically male, the proportion of female drug abusers has increased rapidly in the last decade [8]. Concurrently, drug abuse also has moved from being concentrated almost exclusively in the low-income and less-educated level of Chinese society to all of its social strata. While heroin remains the primary drug of abuse, MDMA (Ecstasy), cocaine, ketamine, cannabis, and “ice” (crystal methamphetamine), are gaining a rapid foothold [7, 9]. Poly-drug use also is very common [9-11]. Most drug users in China initiate heroin use through smoking or snorting the drug, but rapidly move from smoking or inhaling to injection [12, 13]. This transition to typically riskier

behavior greatly increases the likelihood of transmitting or contracting HIV, hepatitis B and C, and other needle-borne infectious diseases.

### DRUG-RELATED HIV/AIDS IN CHINA

HIV was first reported in China in 1985. By the end of June 2005, the accumulated number of cases had risen to 126,808. Of these, 28,789 were diagnosed with AIDS including 7375 cases that resulted in death. Estimates for this period suggest that the actual accumulated number of HIV infections and AIDS cases leading to death is closer to 840,000 and 80,000, respectively.

Injecting drug use has played a predominant role in the outbreak of the epidemic and in fueling its continued presence in China. The first outbreak of HIV among China’s IDUs was reported in the border area of Yunnan province between China and Myanmar in 1989 [14, 15]. By the end of 2002, HIV/ADS had been diagnosed among drug users in all 31 provinces, autonomous regions and municipalities [16]. In 2001, IDUs accounted for 70.9% of China’s total reported HIV/AIDS cases. In 2004, however, the proportion of HIV cases attributed to injection drug use dropped to 43.2%. Much of this decline is attributed to the growing number of infections discovered among paid plasma donors who contracted the virus through exposure to contaminated blood products. When these cases are excluded from the country’s national statistics from 1997 to 2004, IDUs make up about 62% of total reported HIV/AIDS for this period.

HIV prevalence among IDUs has increased steadily since 1995 (see Fig. 2). According to data from national sentinel sites, the average prevalence rate today among drug abusers is 5-8 per cent with wide variation occurring between provinces and regions [17]. By the end of 2002, nine provinces, municipalities and autonomous regions, Yunnan, Xinjiang, Guangxi, Guangdong, Sichuan, Hunan, Guizhou, Jiangxi and Beijing reported a serious HIV/AIDS epidemic

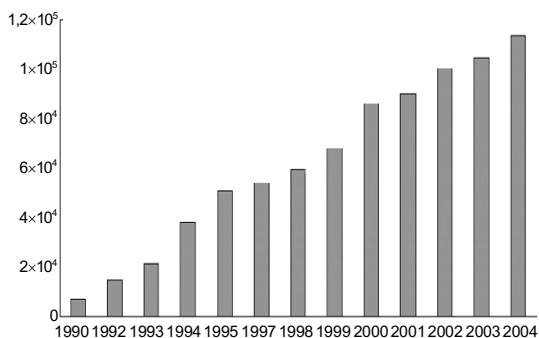


Fig. 1 Registered abusers in China, 1990-2004. Source:[9, 50].

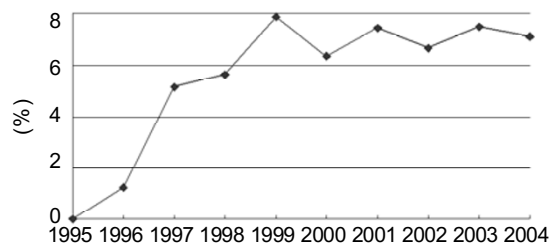


Fig.2 HIV Prevalence Among Drug Users in China, 1995-2004. Source: State Council AIDS Working Committee Office and UN AIDS China Office. A joint assessment of HIV/AIDS prevention, treatment and care in China (2004). Beijing: State Council AIDS Working Committee Office, 2004.

among IDUs.

As the world's main heroin producer, Southeast Asia's drug trade figures heavily into China's IDU AIDS epidemic. Beginning in Yunnan Province where it borders the drug-trafficking nexus of Thailand, Laos, and Myanmar, the virus spread to IDUs in the nearby regions of Guangxi and Guangdong and then followed a major drug trafficking route to Sichuan, Gansu, Qinghai and Xinjiang [18-27]. HIV prevalence in IDUs from Yunnan, Xinjiang, Sichuan, Guangxi, Guangdong and Ningxia continues to be over 10%; in some areas are high as 80% [17, 28].

Several cohort studies have attempted to identify the HIV incidence among IDUs. The results show that HIV incidence density during 12-month follow-up period was more than 2 per 100 person-years among IDUs, and the incidence density rose with the follow-up [15, 29, 30]. These results indicate that HIV is spreading rapidly among IDUs.

### **INJECTING BEHAVIORS**

HIV transmission related to injection drug use occurs through sharing HIV- contaminated syringes, cookers, rinse water, cotton, and other injection equipment. In China, IDUs make up approximately 54% of the country's total number of illicit substance users, and about 45% (0-93%) of its IDUs are estimated to share needles and other drug equipment. Injecting drug-use and needle-sharing among drug users varies, however, by region [12, 13, 31-35]. The highest proportion of both behaviors occurs in the provinces of Southwest China and Xinjiang [30, 36-39].

According to the 2001 National Sentinel Surveillance Report, 53.3% of drug abusers were found to be injecting drugs, and of these over 35% reported sharing drug-use paraphernalia. While men account for the largest proportion of IDUs, women are not immune to either drug use or risk for drug-related HIV transmission. A community-based survey indicated that 59.1% female IDUs reported having shared injecting equipments at least once and 36.4% of those surveyed reported sharing in the last three months [40]. Slightly over 21 % reported sharing a range of equipment including cotton, rinse water and containers.

### **SEXUAL BEHAVIORS**

Male IDUs tend to have more sexual contacts than men who do not use drugs, and few use condoms regularly [41]. Meanwhile the number of HIV infections is rising among female commercial sex workers in China, many of whom are drug users who trade sex for money or drugs. For example, one community-based survey of female IDUs indicated that 59.1% reported engaging in commercial sexual behavior within the past 6 month. Condoms were

used consistently by only 9.7% of women with their regular sexual partners and 28.6% with irregular sexual partners in the past one month [40]. When all else is held equal, women who are severely drug dependent are more likely than men to be at increased risk of sexual acquisition of HIV due to greater biological and social vulnerability. Acquiring drugs requires money or access to resources, and most female drug abusers in China trade sex for money and/or drugs [42]. Overall, IDU women are more likely than their male counterparts to engage in high-risk sex with multiple partners for money or drugs, share needles, and have unprotected sex with an IDU partner.

### **SOCIAL BEHAVIORS**

Initiation of novices into injecting drug use is most likely to occur within the context of social networks, and injectors are more likely than nonusers to have friends and family members who use drugs [43]. New injectors typically are taught injection techniques by more experienced peers, who may or may not communicate safe injection practices. Sometimes social network norms among IDUs promote or reinforce unsafe injection and sexual activities. At the same time, however, social networks also form valuable educational and normative channels in promoting HIV risk-reduction and positive behavioral change.

### **DRUG TREATMENT AND OTHER RISK REDUCTION METHODS**

Successful drug treatment is complex and requires attention to addressing the lasting effects of chronic drug use on the structure and chemistry of the brain. Although important strides have been made in developing efficacious methods of drug treatment, drug abusers remain highly vulnerable to relapse following detoxification. As a result, assisting them to achieve and maintain drug-free lifestyles typically requires the use of comprehensive measures including medical treatment, psychological counseling, peer education, and supportive outreach programs. By reducing risky behavior related to injection and other potentially hazardless drug and sexual practices, such treatment also reduces the likelihood of contracting HIV. Successful drug treatment also helps to stop transmission through sexual partnering that acts as a "bridge" connecting drug-using and non-using populations.

#### **Detoxification Treatment**

All detected drug-abusers in China are required to undergo detoxification. Two types of detoxification institutional settings are available: compulsory and voluntary. Compulsory detoxification lasts at least 6 months, and

medical treatment often is combined with psychological counseling and physical training. With voluntary detoxification, patients usually stay in treatment for 7–30 days. Considerable evidence from many years of treatment research suggests, however, that most drug abusers will relapse into drug use following re-entry into society unless they receive follow-up treatment.

### Methadone Maintenance Treatment (MMT) and Needle Exchange Program (NEPs)

In 2004, a dramatic change occurred in Chinese national policy and prevention strategies for HIV transmission among IDUs. A National Task Force comprised of the Ministry of Health, Ministry of Public Security, and State Food and Drug Administration was set up in accord with new national guidelines for methadone treatment and NEPs. From March 2004, methadone treatment for IDUs was initiated as a first stage pilot program in Sichuan, Zhejiang, Guangxi, Yunnan and Guizhou provinces. By the end of August 2005, 34 methadone maintenance clinics had been set up in 11 provinces and 90 NEPs in 12 provinces across China. The later involved educating drug users about HIV transmission and the importance of using clean injection equipment. Evaluation results comparing IDUs in- and out-of-these program indicated a statistically significant decrease in heroin use, intravenous injection, and drug-related crime among participants [16, 44, 45].

### Community Outreach

To prevent the high relapse rate among drug abuser, outreach programming, including psychological counseling, social assistance, peer education and self-help groups, have been used as access and follow-up strategies among drug abusers released from treatment [31, 46-49]. For example, the China-USA Daytop Village for drug abusers was created in 1997 in Yunnan. The program adopted community therapies as a major means to conduct detoxification, rehabilitation and harm reduction [46]. Subsequently, lower relapse rates and risk-behaviors were reported among drug abusers that it served. Programs such as China-UK HIV/AIDS Prevention and Care Project supported Sichuan and Yunan provinces to carry out harm reduction work among drug abusers and sex workers. In addition, the China-UK project supported publication of the magazine “Phoenix Nirvana”. This periodical focuses attention on drug users and their families, with the intent of heightening community involvement in tackling the dangers and stigma of drug abuse, increasing communication and access to information about illicit drugs and their health consequences, and promoting harm reduction in the use of drugs including transmission of HIV/AIDS.

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