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HIV/AIDS and Drug Use in China—Interactions, Impacts, and Issues

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Abstract

The interrelationships of HIV/AIDS and drug use and misuse result in complex problems that have been addressed by a variety of sociolegal approaches that often are in contrast to evidence-based medical practices proven effective in reducing associated harms. Like other countries struggling to reduce the incidence and consequences of addiction and HIV/AIDS, China is working to improve systems of care and to revise policies toward drug use and misuse and HIV/AIDS. Greater interaction with researchers and clinicians from around the world can foster increased awareness of effective practices and help implement effective strategies to deal with the problems of HIV/AIDS, and addiction.

Keywords

addiction; HIV/AIDS; drug use; China; methadone

INTRODUCTION: LOOKING BACKWARD

The human immunodeficiency virus (HIV) causes acquired immunodeficiency syndrome (AIDS). Now far along in the worldwide epidemic of HIV and AIDS almost three decades after the first identification of the syndrome and the virus at UCLA, the acronyms are familiar and ingrained in daily lexicon. That familiarity has bred an acceptance such that spelling them out seems extraneous, but it is not. Perceptions of and responses to the epidemic have morphed as quickly as does the virus, inhibiting implementation of cogent strategies to effectively address the epidemic. Briefly recounting the early history of the problem might help ensure a shared understanding.

The first documentation of the newly identified condition that became known as AIDS appeared June 5, 1981, in the Center for Disease Control's *Morbidity and Mortality Weekly*

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Declaration of Interest

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Report, when UCLA researcher Michael Gottlieb and colleagues (1981) published their case reports describing the set of conditions (National Institutes of Health; Office of NIH History, 2010). The cause was unknown, and considerable scientific resources were marshaled in a massive research effort to determine the etiology and course of the syndrome. On April 23, 1984, findings from Dr. Robert Gallo of the National Cancer Institute were announced (simultaneously with results from research at the Pasteur Institute) indicating that the cause of AIDS was the retrovirus human T-cell leukemia/lymphoma virus (HTLV-III), confirming previous work by Harvard and CDC researchers who had found association between variants of HTLV and AIDS (Essex et al., 1983).

Soon after the Gallo announcement, the head of the U.S. Department of Health and Human Services, Dr. Margaret Heckler, also announced the development of a diagnostic blood test to identify HTLV-III, and she anticipated production of a vaccine against AIDS within two years. Disputes among scientists involved in AIDS research produced academic and legal actions; one outcome was a terminology change from HTLV-III to “HIV” as suggested by a committee of scientists from various countries. Conflict characterized the early research efforts and the arduous process of developing prevention and treatment for HIV and AIDS.

The HIV/AIDS story closely parallels the situation of drug addiction and related policy responses, social reactions, and research efforts. After all this time, we still have rampant drug use and misuse around the world and we still do not have adequately effective means of treating drug use disorders.

Prevention of HIV and treatment for HIV and AIDS have improved, and, similarly, pharmacological and behavioral therapies for addiction are getting more effective. HIV/AIDS and drug use disorders have become intricately intertwined, complicating the treatment of each while the disorders interact to compound the array of related medical, behavioral, social, and legal problems.

The situation is more serious in some parts of the world than in others, and the mutually contributory impacts of HIV/AIDS and drug addiction are inconsistently recognized and unevenly addressed. Measures to prevent HIV and drug use or to treat AIDS and addiction are applied with widely varying degrees of intensity, scope, and effectiveness. Given the Western nations’ longer history of dealing with HIV/AIDS, however, the lessons learned could be useful to nations that have been more recently impacted by HIV/AIDS and drug use disorders. Although still imperfect, the knowledge amassed during almost three decades of seeking answers to questions about HIV, AIDS, and addiction may help stem or lessen these problems.

LINKED EPIDEMICS—DRUG ABUSE¹ AND HIV/AIDS

The Worldwide Situation

Almost 20% of injecting drug users (IDUs) around the world are estimated to be infected with HIV. Sharing of injection equipment is contributory to almost one third of new HIV

¹The journal’s style utilizes the category *substance abuse* as a diagnostic category. Substances are used or misused; living organisms are and can be *abused*. Editor’s note.

infection overall, although specific regions have lesser or greater rates of IDU-involved HIV, as described later. In raw numbers, approximately 3 million of the world's estimated 16 million IDUs are HIV positive, many dwelling in countries with minimal capacity—or inclination—to prevent further spread of HIV infection by reducing drug use through treatment.² Similarly, such nations are unable or disinclined to comprehensively treat either HIV or the consequences of full-blown AIDS.

Opioid dependence continues to be a serious problem throughout the world, and use of opioids by injection poses a significant vector of HIV (Arasteh & Des Jarlais, 2008; Mathers et al., 2008). Injection drug use (primarily of opioids) caused 67% of HIV infections in both Eastern Europe and in Central Asia, 44% in China, 22% in Southeast Asia, 19% in Latin America, and 17% in the United States (CDC, 2009; WHO, 2006). Furthermore, sexual behaviors among drug users, especially those with multiple concurrent partners, accounts for an additional significant vector of HIV, especially as high-risk sexual activity spreads HIV infection into the general population (Copenhaver, Lee, Harman, Johnson, & Carey, 2006; Morris, 1997; Morris & Kretzschmar, 1997).

Stimulant use has been implicated in increased high-risk sexual behaviors that promote HIV transmission as well. Amphetamine-type stimulants represent another HIV risk behavior, as sexual activities among ATS users compound the HIV infection risk behaviors associated with injection use. The connection between stimulant use and HIV has been well documented, especially among users who are men having sex with men (MSM) (e.g., Peck, Shoptaw, Rotheram-Fuller, & Reback, Bierman, 2005). Around the world, 35 million people use amphetamine-type stimulants (ATS) (i.e., methamphetamine [MA], amphetamine, and Ecstasy). Methamphetamine use and its consequences have emerged as some of the most serious public health problems worldwide; its use is linked to the spread of HIV and other sexually transmitted diseases, acute and chronic psychosis, violence, and family and social disruptions. More than 75% of MA users worldwide live in Asia and Southeast Asia; there are clear indicators that MA use is spreading throughout the region to China, Indonesia, Singapore, Malaysia, the Philippines, and Thailand. REF. Increases in stimulant use and the attendant increases in rates of HIV transmission have serious consequences that are inadequately addressed in the world regions most affected, which lack resources and expertise.

North America and Europe

The United States and most western European nations address HIV/AIDS and drug use disorders with nominally rational approaches that rely on a medical model of chronic

²Treatment can be briefly and usefully defined as a planned, goal directed, temporally structured change process, of necessary quality, appropriateness and conditions (endogenous and exogenous), which is *bounded* (culture, place, time, etc.) and can be categorized into professional-based, tradition-based, mutual-help based (AA, NA, etc.) and self-help (“natural recovery”) models. There are no unique models or techniques used with substance users- of whatever types and heterogeneities- which aren't also used with non-substance users. In the West, with the relatively new ideology of “harm reduction” and the even newer Quality of Life (QOL) treatment-driven model there are now a new set of goals in addition to those derived from/associated with the older tradition of abstinence driven models. Treatment is implemented in a range of environments; ambulatory, within institutions which can include controlled environments Treatment includes a spectrum of clinician-caregiver-patient relationships representing various forms of decision-making traditions/models; (1) the hierarchical model in which the clinician-treatment agent makes the decision(s) and the recipient is compliant and relatively passive, (2) shared decision-making which facilitates the collaboration between clinician and patient(s) in which both are active, and (3) the ‘informed model’ in which the patient makes the decision(s). Editor’s note.

relapsing conditions, often emphasizing harm. Harm reduction approaches rely on medical and social management of the disorders to lessen the harmful impacts on individuals and societies, in contrast to policies and practices that criminalize drug addiction and even sexual activities that are associated with increased risk of HIV transmission. As brought to bear on the problems of HIV and drug use disorders, harm reduction runs counter to the ostracization, criminalization, and marginalization of individuals who are afflicted with HIV/AIDS or who are addicted to drugs. But the effects of past criminalization approaches remain; stigma and social reluctance to devote resources to improve the condition of drug users and HIV/AIDS patients still color the policies and practices, compromising efforts to comprehensively formulate and implement prevention and treatment strategies. This residue of regressive policies is an unfortunate characteristic of the situation in China, as well, described more fully later in this article.

To date, the rate of HIV infection among drug users in the Western countries is stable, even declining in some areas, although an argument is often made that surveillance systems and data collection are paltry and flawed. Based on most recent data from the United States Centers for Disease Control and Prevention, the number of new HIV infections has fallen among American IDUs, the group now at 12% of the total HIV cases in the country, and the rate is down 80% from its height of the late 1980s (CDC, Morbidity and Mortality Report, 2009).

The potential transmission of HIV among IDUs and from IDUs into the general population is still of concern based on their drug use and sexual behaviors: 33.4% shared injection equipment, 62.6% had unsafe vaginal sex, and 47.2% had multiple sex partners within the previous 12 months. Having had multiple sex partners is an indicator of significant high-risk sexual activity (Copenhaver et al., 2006). An encouraging finding of the CDC study was that 71.5% of the sample (10,301 IDUs whose HIV status was negative or unknown) had been tested for HIV in the preceding year, indicating at least some HIV awareness among the majority of the IDUs, although only one-quarter had participated in any kind of HIV behavioral intervention.

As noted above, increased use of MA and other ATS represents another HIV risk behavior. In the United States, 1.2 million adults reported use of ATS in the previous month, and sexual activities among ATS users compounds the HIV infection risk behaviors associated with injection use. The connection between stimulant use and HIV has been well documented, especially among users who are men having MSM (e.g., Peck et al., 2005). A further complication ensues from the nature of the interaction of these stimulants with antiretroviral medications; lessened efficacy of the medications and impact on cognition have been observed (e.g., McCutchan et al., 2007; Langford et al., & the HIV Neurobehavioral Research Center Group, 2003), as well as the poor compliance with medication regimens for HIV/AIDS among stimulant users (Shoptaw & Reback, 2006).

Eastern Europe, South Asia, Australia, and Developing Countries

Russia, the former Soviet republics, and Eastern European countries have extraordinarily high rates of HIV among IDUs. For example, IDUs accounted for 83% of HIV in Russia in 2006, three-quarters of HIV cases in Kyrgyzstan and Kazakhstan, with 64% of HIV cases in

the Ukraine as of 2007 (IHRDP, 2008). Tajikistan IDUs with access to needle exchange programs had 50% of the HIV prevalence of those who did not. Distinct from other countries, the medical model of disease has not been applied in addressing HIV via prevention or treatment provided for drug use. That methadone is not available in several of the former Soviet republics and in other countries hinders this useful approach to addressing addiction to opioids.

Southern Asia has similar rates of occurrence of HIV among IDUs: IDUs account for 72% of Malaysia HIV cases, 54% in Indonesia, 52% in Vietnam, and, as will be discussed below, 44% in China.

In contrast, fewer than 5% of new cases of HIV occur among IDUs in Australia, a low rate that likely is attributable to harm reduction efforts. Other countries are handling the combined epidemics with similarly aggressive efforts in line with the “disease” model as they turn away from a criminalizing approach that results in marginalization and restriction of treatment services. For example, strong prevention efforts in Brazil that targeted the drug-using community have resulted in a decline in transmission rates (Gosline, 2006).

Clearly, the situation is not irreparable, given adequate responses at a broad scale.

The Situation in China

China is close to the “Golden Triangle” and “Golden Crescent,” two of the three biggest opiate supplier areas in the world, and has seen a significant increase in the number of illicit drug users since the 1980s. As of the end of 2009, 1.33 million drug users were registered with the Ministry of Public Security (MPS) (China Ministry of Public Security [MPS], 2009), while there were an estimated 3.5 million addicts (Sullivan & Wu, 2007). More than three quarters of the registered drug addicts and estimated addicts use heroin. Heroin addicts are predominantly young (under age 30), single (more than 60%), male (60% to 70%), with low education and no steady jobs (Li, Zhou, & Stanton, 2002; Qian, Schumacher, Chen, & Ruan, 2006). While the high-risk sharing of needles and injection equipment is common (Sullivan & Wu, 2007), Chinese drug users also engage in sexual risk behaviors that put them and their sexual partners at risk of HIV infection (Sullivan & Wu, 2007; Wu et al., 1997). In recent years, ATS and polydrug use is becoming more and more popular, thus put them at even more high risk of HIV infection.

The HIV epidemic started somewhat later in China than in most of the Western countries and even later than in the developing nations, largely because of the self-imposed isolation from outside influences and because of strict systems of controls and cultural mores of China. China’s first case of HIV was reported in 1985 and first case in injecting drug users in 1989 (Lu et al., 2004). By December 2007, there were an estimated 700,000 HIV infected cases in China (China State Council, 2006). The national HIV prevalence is 0.05% (range 0.04% to 0.07%) (WHO, 2006). Prevalence among IDUs increased from 1.95% in 1996 to 6.48% in 2004, and is rising and spreading from these groups to the general population. IDUs continue to engage in high-risk behaviors. Recently published national surveillance data show that 40% of IDUs reported needle-sharing (State Council, 2007). Estimated data indicate a focused spread of HIV infection among IDUs. At the end of 2005, there were

about 288,000 drug users living with HIV/AIDS, accounting for 44.3% of the total estimated HIV cases (Gill & Okie, 2007; Wu et al., 2008). The escalating number of HIV-infected IDUs is concentrated in Yunnan, Xinjiang, Guangxi, Guangdong, Guizhou, Sichuan, and Hunan provinces, with each province having an HIV prevalence of more than 5% among IDUs. Together, they account for 89.5% of all people infected through injecting drug use (WHO, 2006).

LINKED IMPACT—INTERVENTIONS FOR DRUG USE AND HIV/AIDS

Treating Addiction Can Lead to Reductions in HIV Infection and Better HIV Outcomes

Preventing opioid use and reducing dependence via effective treatment can directly and indirectly reduce transmission of HIV (Sullivan, Metzger, Fudala, & Fiellin, 2005; Ward, Mattick, & Hall, 1998). Research has shown that the use of opioid agonist substitution therapy with methadone or buprenorphine is an effective way of managing opioid dependence, thereby preventing and reducing HIV/AIDS infection by curtailing drug administration behaviors that promote transmission of HIV (Morris, Levine, & Weaver, 2004; WHO, 2006). Effective substitution therapy also enables the opportunity to educate about unsafe sexual practices and to reduce HIV-risky sexual behaviors, such as having concurrent [multiple] sexual partners, especially in overlapping networks that greatly increase HIV transmission (Morris, 1997; Morris & Kretzschmar, 1997). Research has documented significant reductions in HIV risk behavior, overdose deaths, and improved outcomes from antiretroviral treatment in HIV-infected opioid users when treated with the substitution medication buprenorphine (Johnson et al., 2000), and strategies to expand access to buprenorphine treatment may help combat the spread of HIV (Sullivan et al., 2005).

An important aspect of the intertwined conditions of drug misuse and HIV/AIDS is the negative effect of drug use on adherence with antiretroviral therapies (ART) among drug-using individuals receiving such medications. Rates vary among different populations and users of different drugs, but the impact is considerable. For example, compliance with AIDS medications occurred in fewer than 27% of cocaine users, compared to more than two thirds of nonusing comparators, with attendant adverse HIV/AIDS consequences among the users (increased viral load) compared to the non-users (Arnsten et al., 2002). Notably, drug use was the strongest predictor of poor adherence among a broad range of behaviors and characteristics.

It appears that a main factor in the nonadherence with AIDS medications among drug users is the intoxication itself, as found in a study of 150 HIV-positive individuals of whom 102 tested positive for drug use, which conferred a four-fold risk of medication noncompliance (Hinkin et al., 2007).

Given the importance of intervening to reduce HIV/AIDS risk when and where opportunity presents, various methods have been tried, including “direct observation of therapy” in methadone maintenance settings, where clinicians can promote adherence with AIDS medications in a similar way that they ensure administration of methadone (Berg et al.,

2009). The in-clinic provision and supervision of AIDS medication has been shown to improve AIDS outcomes (Lucas et al., 2006).

Buprenorphine to Reduce Opioid Addiction and Associated HIV Risk Behaviors

As noted above, interest has greatly increased in the use of buprenorphine for treating opioid addiction, with resultant reduction in associated HIV risk behaviors. Buprenorphine is a mu-opioid partial agonist, distinct from methadone, a full agonist. Controlled clinical trials in several thousand patients over the past 15 years have provided overwhelming support for its therapeutic efficacy in opioid-dependent individuals (Amass, Kamien, & Mikulich, 2000; Copenhaver, Bruce, & Altice, 2007; Fiellin, Rosenheck, & Kosten, 2001; Fudala, Bridge, Herbert, Chiang, Leiderman, & the Buprenorphine/Naloxone Collaborative Study Group, 1998; Ling et al., 1996, 1998; Ling & Wesson, 2003). Suboxone, a sublingual combination tablet containing both buprenorphine and naloxone (an opioid antagonist) has been developed to mitigate use and diversion.

Buprenorphine has less potential for psychological and/or physical dependence than traditional full agonist opioids (e.g., methadone) and has fewer side effects. Its potential use in an office-based treatment setting versus daily dispensing at a clinic provides could be well suited to China as a means of avoiding the stigma of the standard methadone programs. Buprenorphine treatment also allows patients to receive medication by prescription to be taken at home for weeks or even months, thereby avoiding daily attendance at a traditional treatment program. This allows patients to return to a more “normal” life routine in a relatively short time span. Buprenorphine treatment can help stabilize the lives of patients and in turn provide opportunities for educational efforts directed toward reducing risky sexual behavior and risky injection behavior (e.g., sharing injection equipment).

Buprenorphine has been well received in the United States and in Europe, increasing the number of patients seeking treatment for opioid dependence because of its availability at private office-based practices, its less restrictive controls, and its favorable safety profile (Amass et al., 2004; Compton, Wesson, Charuvastra, & Ling, 1996; Fudala et al., 2003; Ling et al., 1998, 2005; Ling & Wesson, 2003). A particularly important aspect of buprenorphine is its compatibility with HIV ART, especially compared to methadone, the traditional substitute medication for opioid dependence—the literature indicates fewer interactions between buprenorphine and AIDS medications than have been documented with methadone and AIDS medications (Carrieri, Vlahov, & Dellamonica, 2000; Carrieri et al., 2003; McCance-Katz, Rainey, Friedland, & Jatlow, 2003; Rainey, Friedland, & Snidow, 2002). Buprenorphine is the preferred agonist medication for co-morbid opioid dependence and HIV/AIDS, given the ability of a treating clinician to medically care for an HIV-infected patient and also prescribe the less-restricted agonist therapy, whereas methadone, due to its “abuse liability” requires specialized clinic attendance and oversight by licensed clinicians.

Buprenorphine is not yet widely used in China except as a detoxification medication, although it has been examined for its utility in treatment of heroin addiction (Tang & Jiang, 1998). Concerns regarding its “abuse liability” may have stifled acceptance among policymakers, although Chinese research has indicated a fairly low potential for misuse (Liu et al., 2004), confirming existing European and American work.

In sum, the nexus of drug addiction and HIV/AIDS poses both a challenge and also an opportunity to engage afflicted individuals into effective treatments for both conditions, helping to ameliorate the overall consequences. Treatment for drug use disorders has been and is associated with reductions in the frequency of drug use, fewer HIV-related risk behaviors, and fewer new incidents with potential for HIV transmission. For HIV-positive people who come into contact with the addiction treatment system as a result of their addiction, treatment can provide access to HIV/AIDS treatment and also improves adherence to HIV medication.

RESPONSES TO HIV/AIDS IN CHINA

The recognition among international and national-level policymakers that HIV/AIDS is a major threat worsened by untreated drug use(r) has resulted in a more progressive strategy of treatment provided to opiate addicts. China has achieved remarkable national progress in its comprehensive response to HIV/AIDS. The first and second five-year Action Plans (2001–2005 and 2006–2010) were formulated (China State Council, 2006); the second aimed to cover at least 90% of high-risk populations and vulnerable migrants with effective prevention interventions. By 2010, methadone maintenance treatment clinics will be set up to provide services for at least 70% of opiate addicts (mainly heroin addicts) in counties and cities with more than 500 registered drug users. More than 50% of IDUs in the areas implementing NSPs will be provided with clean needles and syringes (IHRDP, 2008). In 2006, the State Council issued the AIDS Prevention and Treatment Regulations that include promotion of programs for drug users such as methadone maintenance treatment and other effective interventions (China State Council, 2006). Although the regulation does not explicitly mention needle exchange programs, implementation of the approach in 775 sites in 17 provinces indicates the endorsement of this approach in the country (IHRDP, 2008).

Methadone is the most widely used pharmacological treatment for opiate dependence globally, and China has followed that example. A large body of international research has shown the efficacy of methadone maintenance for the treatment of opiate addiction and subsequent reduction in HIV risk behaviors. Following the success of the proven “substitution” pharmacotherapy approach that has been tested extensively in the Western nations, China has adopted methadone maintenance therapy (MMT) as a primary strategy to combat the combination threat of drug use and HIV/AIDS.

In February 2003, the Ministry of Health, MPS and the State Food and Drug Administration (SFDA) issued an interim “Opium abusers community-based drug maintenance treatment protocol” to start piloting MMT (China Ministry of Health, 2003). In July 2006, the three agencies revised the protocol to support expansion of the MMT program in 22 provinces (China Ministry of Health, 2006). Guidelines for dosage follow international standards, with initial dosage around 15–30 mg, not exceeding 40 mg, and not exceeding 50 mg the first day, with 5–10 mg increase every 5–10 days up to 60–80 mg. Most patients are expected to be stabilized around 60 mg. Patients meet with the doctor every day, and pay 10 Yuan (or 1.25 American dollars) for the daily dosage. Urine testing is routinely required. The services offered at methadone clinics have been broadened and provide access to other services,

including HIV and hepatitis testing, ART for eligible AIDS patients, group activities, peer education, and skills training for employment.

A 2007 evaluation survey conducted in the first phase of eight MMT clinics documented a positive change in the self-reported rate of injecting drug use, drug use-related illegal offences, employment opportunities and family relations (State Council, 2007). The average frequency of drug injection declined from 90 to 2 times per month and self-reported criminal behaviors reduced from 20.7% to about 3.8% (Pang et al., 2007). Entry requirements deterred many people from accessing the services, especially migrants and others without the required documents (IHRDP, 2008). In 2006, the Government made adjustments to methadone delivery, such as permitting access to methadone clinics anywhere, linkages to other services, mobile methadone provision and waiving of residency documents (IHRDP, 2008).

By December 2007, China had 503 functional MMT clinics. Cumulatively, over 97,554 drug users had entered the program. In addition, 45,121 injecting drug users had regularly attended NSPs (Wu, 2008). These clinics regularly provide free HIV testing and counseling services to all who join the MMT program. China has operated around 700 MMT clinics by the end of 2008. The Chinese government has taken bold steps to scale up HIV testing and counseling, offer free ART to AIDS patients, and expand primary prevention measures such as MMT and NSPs for drug users, and condom promotion for sex workers and men who have MSM. The achievements in such a short period of time indicate that China is committed to addressing the problems of drug misuse and HIV/AIDS in order to reduce HIV prevalence in the future (Wang, 2007).

In China, eligible HIV-positive IDUs in the community have had access to free ART since 2003 through referral linkages between MMT clinics, hospitals and CDC in China. Over 31,000 adult and pediatric patients have been treated (Zhang et al., 2007). China is also piloting ART in prisons in Guangxi, Yunnan, Sichuan, and Hunan. Prisoners on ART are mainly drug users. Although the current policy environment is favorable for harm reduction activities, China faces several difficult challenges in establishing a comprehensive HIV/AIDS response among IDUs. These include (1) difficulty in coordination among different bodies; (2) inadequate implementation of prevention strategies; (3) increasing the demand for care, support and treatment for IDUs to reach all those in need; (4) need for effective control of HIV/AIDS transmission inside closed settings; and (5) insufficient linkage to after-care and other drug user treatment in community.

RESPONSE TO DRUG ADDICTION IN CHINA

The long-standing policy regarding drug use in China is that it is an illegal behavior. Drug addicts are allowed to voluntarily enter treatment facilities before detection by the public security department. Initial detection of drug use results in a term in a compulsory detoxification center for one to six months, and repeat offenders were remanded to compulsory rehabilitation facilities for one to three years before “*Law of the People’s Republic of China on Narcotics Control*” acted on June 1, 2008.

The compulsory detoxification centers and compulsory rehabilitation facilities play the major role in the treatment system in China. The compulsory detoxification is run by the public security system and often involves detoxification by medicine for three months. The compulsory rehabilitation facility is run by the justice system and often involves some form of physical exercise, education, and farming activity, but few offer psychosocial counseling or formal behavioral therapies. The treatment facilities for voluntary individuals are run by the health system, and represent only a small part in the treatment system when compared to compulsory facilities. Therefore, voluntary treatment only plays a complementary role in China.

Most of the voluntary drug user treatment facilities only offer a short period of detoxification without comprehensive psychosocial treatment. During the time in either of these “residential based” settings, individuals may participate in education programs regarding drug use and HIV behaviors, but typically they do not receive comprehensive care for HIV/AIDS or for addiction. Medications used in detoxification include methadone, buprenorphine, clonidine, Chinese medicines, sedative medications, and other medications to reduce the withdrawal symptoms. Naltrexone is available as a medicine for relapse prevention in China.

In spite of efforts to treat drug addicts, the high relapse rate is still a big challenge in China. The relapse rate is as high as 80% to 95% (McCoy et al., 2001; Wu et al., 2004), and many addicts continue in a cycle of substance use, detection, and the resultant return to compulsory rehabilitation. In order to control drug use, one new term “community rehabilitation” was defined in the recently promulgated “*Law of the People’s Republic of China on Narcotics Control*” on December 29, 2007. Since it came into force in June 2008, the previous compulsory detoxification centers and compulsory rehabilitation facilities are both renamed as “compulsory isolated rehabilitation facilities.” According to the new legislation, if detected by the public security department, drug addicts are sent to compulsory isolated rehabilitation facilities for one–three years, and need to be followed for another three years for “community rehabilitation.” During the period of “community rehabilitation,” the community should provide support to help the drug addicts to integrate into the society and live a drug-free life. In order to monitor their drug use, drug addicts are required to present for urine testing and routinely report their status to the community rehabilitation sites in their residential area. This approach has become even more strict with the recent changes in laws and nomenclature.

The fact remains that the compulsory isolated rehabilitation facilities separate drug addicts from mainstream Chinese society. This separation sunders the social support and shared identity that is an important characteristic of Chinese culture, further alienating and stigmatizing the addicts, resulting in an ever-widening gulf from family and friends who otherwise could be used as a support network useful in promoting and sustaining recovery from addiction and involvement in a healthy lifestyle. Although “community rehabilitation” was proposed as the aftercare in the community, few jurisdictions have established social worker systems to provide the “community rehabilitation,” except for some developed areas such as in Shanghai, Jiangsu, and Zhejiang provinces. The slow implementation of the aftercare system is attributable to economic and other limitations, including lack of specific

organizations to provide the “community rehabilitation,” which should include comprehensive support and counseling provided by professional social workers. The direction to shift the focus on compulsory isolated rehabilitation to community rehabilitation for drug addicts is promising, and there is a good opportunity to improve drug user treatment although there are huge challenges such as funding restrictions and need for greater capacity building for community service.

Linkage to aftercare and methadone programs after release from compulsory treatment facilities is a promising approach to combat disease transmission, facilitate reentry into the community, and reduce recidivism and relapse (Kinlock et al., 2007; Rich et al., 2005). Thus, as described below in the case of Shanghai, providing aftercare service and connecting addicts with treatment programs could help to break the cycle of substance use, health risks, criminal behavior, and re-incarceration among heroin-dependent drug users.

Comprehensive Aftercare Service: A Good Example from Shanghai in China

Shanghai is the largest and most developed urban city in China, and has 13 million permanent residents and 4 million transient residents, with more than 30,000 registered addicts. There are three compulsory rehabilitation facilities (two for men and one for women) and 10 MMT clinics in Shanghai. To complement these efforts to control drug use, a network of social workers tracks all drug addicts from rehabilitation facilities once released into the community.

Established in 2003, the Council of Shanghai Ziqiang social service is an NGO supported by the government to help drug addicts to reintegrate into the community after being released from compulsory rehabilitation facilities. The number of social workers in each community is based on the number of registered drug addicts in the community, generally one social worker is responsible for 30 drug addicts. There are about 730 social workers hired from communities to help clients living within those communities in Shanghai.

The government provides the operational funding, including the salary for the social workers. Social workers are trained to assist clients by providing or arranging services as needed at no cost to the clients. The social worker’s primary responsibility is to keep regular contact with clients and provide counseling and to encourage regular drug test. Most importantly, interactions with clients are confidential, although the social workers do submit written reports to their supervisors about frequency and content of contacts with clients. A nonconfrontational, supportive attitude enables a rapport with the clients and affords reliable assistance.

Operationally, social workers in Shanghai meet addicts about to be released from compulsory rehabilitation centers to prepare them for discharge. In collaboration with local police, the social worker and addict work out post-discharge reporting requirements, including regular contact (at least monthly) with the social worker and random urine testing in a community hospital several times per year. A contract stipulates that noncooperation with social services will require urine tests to be conducted by the police, with consequences for a drug-positive test. A positive urine test in either case enables the client to enter methadone treatment, or return to the compulsory rehabilitation facility. The aftercare

service provided by the social worker has proven effective in reducing the relapse rates and improving addicts' social functioning. The 2008 report from the Council of Shanghai Ziqiang Social Service showed that the average abstinence rates within one year after release from compulsory rehabilitation are 60% among the clients who received the social service, and there are 4,015 heroin addicts who have remained abstinent for more than three years since the social worker system began (2008 report of Council of Shanghai Ziqiang Social Service, interior material, unpublished data). While there is a continued reliance on the criminal justice system, the Council of Shanghai Ziqiang Social Service for addicts is considered a model program in China, and it has proven to be effective as a platform for additional access to a high-risk group for the purpose of preventing the spread of HIV/AIDS.

MOVING FORWARD: WHAT CAN BE DONE AND WHAT SHOULD BE DONE

Based on a meeting of the High-Level Committee on Programme (HLCP) in Vienna at its first regular session of 2001, (February 26–27), the United Nations produced a paper—*Preventing the Transmission of HIV among Drug Abusers*—to set forth its position on “policy and strategies to prevent the transmission of HIV among drug abusers” (United Nations, 2001). The focus was on reducing harms associated with HIV infection associated with drug use by injection. Since that time, the scope of the interaction of HIV/AIDS, and drug use has expanded to include other related factors besides injection use, such as unsafe sex practices among drug users, and mother-to-child-transmission of HIV among drug-using pregnant women. These matters certainly pertain to the situation in China, but region-specific differences complicate the process of addressing HIV and addiction problems, even within China. Greater interaction with researchers and clinicians from around the world can foster increased awareness of effective practices and help generate new strategies to deal with the twin epidemics.

Recommendations for Reducing Harms Associated with HIV/AIDS and Addiction in China

The summary suggestions below are aimed at the situation in China but may be pertinent in most countries affected by addiction and HIV/AIDS, although limited in feasibility because of shortages in expertise and infrastructure. The United States, for example, lacks a universal healthcare structure, thereby constraining the ability to broadly implement policies that would comprehensively prevent and treat addiction and HIV/AIDS to most effectively reduce the harms associated with both conditions. Still, elements of recommendations have universal applicability.

1. **Reduce drug use by treatment:** First and foremost, concerted efforts must be made to reduce use and misuse of illicit drugs, particularly opiates, via evidence-based treatment made available at a nationwide scale. This includes the provision of formal therapy that is based on research-proven practices, consistently implemented and delivered as designed. Treatment must be made available in any and all settings in all levels of judicial, medical, and social systems that deal with drug users, at no cost or at low cost according to ability to pay, for any and all persons with a drug use disorder.

2. Reduce legal consequences of self-exposure of addiction: In accord with the U.N. master policy and policies of most Western nations, the Chinese government has recognized the interplay between HIV/AIDS and addiction. While effective programs—specifically, methadone maintenance—have been implemented to reduce drug use in order to help control the spread of HIV, drug use is illegal in China, which compromises engagement of addicts into methadone programs.
3. Improve collaboration between intervention programs and law enforcement agencies: In cases of offenders (nondrug crimes) who are found to be drug users, criminal justice agencies should remand non-violent offenders to drug user treatment in lieu of incarceration or consider providing effective drug user treatment within prisons.
4. Address stigma regarding addiction and HIV/AIDS: Advocacy efforts at all levels are needed to reduce the stigma and discrimination around HIV/AIDS and drug use. An aspect of this would include programs and policies that adhere to the WHO Basic Principles for Treatment of Drug-dependent People Living with HIV/AIDS:
 - Provide supportive environments to enable and facilitate treatment, care, and support.
 - Client participation in the planning, delivery, evaluation, and monitoring of services.
 - Participation of community and other stakeholders.
 - Community and nongovernment organizations should be active participants and advocates for treatment, care, and support for drug dependent people living with HIV.
5. Implement other effective pharmacotherapy in addition to methadone: Recent changes in policy have elicited new interest in buprenorphine, especially in a long-acting formulation that could prove very effective in helping to curb HIV-risky behaviors by increasing medication compliance. A multi-site randomized trial is comparing the long-acting form of buprenorphine with the sublingual preparation. This formulation may be an important step toward more effective therapies to reduce HIV and addiction problems.
6. Coordination of pharmacotherapies for addiction and HIV: ARTs are effective in stemming the progression of HIV infection to full-blown AIDS, but non-compliance with medication regimens compromises their effectiveness, and the medications are expensive. For HIV-positive opioid addicts on maintenance/substitution therapy with buprenorphine or methadone, education about AIDS medications and provision of ARTs as medically appropriate should be part of the drug user treatment program. One example of this is directly provision of ARTs in the context of the methadone daily-dosing setting, ensuring adherence to the medication regimen and improving HIV outcomes.
7. Expand prevention of HIV transmission among drug users: Needle exchange programs have proven effective at reducing HIV transmission. Although needle

exchange has been available in some areas in China with high HIV/AIDS prevalence, education campaigns have been the primary approach in China. HIV/AIDS education are not broadly effective in preventing HIV risk activities among individuals within high-risk populations, especially in compulsory rehabilitation centers or prisons, therefore, harm reduction such as needle exchange programs are needed to expand in China to decrease the spread of HIV/AIDS transmission.

8. **Countering unsafe sex among stimulant users:** The use of opiates by injection remains the primary vector for HIV infection in drug-using populations in China, but surrounding regions have experienced increased prevalence of severe-level use of ATS, particularly MA. Stimulant-using men who have MSM often have multiple sex partners, concurrent sex partners, and unsafe practices including minimal use of condoms.
9. **Improve effectiveness of existing treatment programs through training:** Evidence-based treatment approaches for addiction are effective only when properly implemented and conducted. Many countries and regions of countries lack sufficient expertise in managing pharmacotherapy-based treatment or in delivering behavioral therapies. When resources are devoted to a program that fails due to lack of well-trained treatment staff, the message back to funders and policymakers is that the “treatment didn’t work.” The U.N.-supported “Treatment” effort is an example of a training strategy that can efficiently improve effectiveness of existing resources via “train-the-trainer” techniques (UNODC, 2009).
10. **Increase collaborative research and training activities:** Phenomena related to HIV/AIDS and drug use are poorly characterized in Asian populations, among whom possible genetic differences must be examined as potential factors in responses to illicit drugs and to HIV/AIDS, and in responses to medications for those conditions. For example, the authors are currently exploring plasma levels of methadone in a sample of patients on methadone maintenance in Shanghai to determine possible genetically driven variations that affect treatment processes (e.g., dosage) and outcomes.

As principal investigator of NIDA’s (National Institute on Drug Abuse) Clinical Trial Network’s Pacific Region Node, He has extended ISAP’s research beyond the US, in collaboration with international researchers in China, Southeast Asia, and Australia.

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GLOSSARY

Addiction

The related concept of drug addiction has many different definitions. Some writers give in fact drug addiction the same meaning as substance dependence, others for example provide drug addiction a narrower meaning which excludes drugs without

evidence of tolerance or withdrawal symptoms. The American Society of Addiction Medicine has this definition for Addiction: Addiction is a primary, chronic disease of brain reward, motivation, and memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social, and spiritual manifestations. This is reflected in the individual pursuing reward and/or relief by substance use and other behaviors. Addiction is characterized by impairment in behavioral control, craving, inability to consistently abstain, and diminished recognition of significant problems with one's behaviors and interpersonal relationships.

AIDS (Acquired Immunodeficiency Syndrome)

An epidemic disease caused by an infection by HIV, a retro-virus that causes immune system failure and debilitation and is often accompanied by infections such as tuberculosis. AIDS is spread through direct contact with bodily fluids, especially by sexual contact or contaminated needles.

Amphetamine-type stimulants

Amphetamine type stimulants encompass some of the most common, well known and used drugs including Ecstasy, Speed and Base, Ice, and Methamphetamine. They are synthetic drugs meaning. They are not natural and created by processing chemical ingredients.

Antiretroviral therapies (ARTs)

ART means treating retroviral infections like HIV with drugs. The drugs do not kill the virus. However, they slow down the growth of the virus. When the virus is slowed down, so is HIV disease. Antiretroviral drugs are referred to as ARV. ARV therapy is referred to as ART.

Buprenorphine

Is a mu-opioid partial agonist, and a medication used to treat adults addicted to or dependent on opioids such as heroin.

Counseling

Professional guidance of the individual by utilizing psychological methods especially in collecting case history data, using various techniques of the personal interview, and testing interests and aptitudes.

Dependence

When an individual persists in use of an addictive substance despite problems related to use of the substance. Compulsive and repetitive use may result in tolerance to the effect of the drug and withdrawal symptoms when use is reduced or stopped.

Drug abuse

It refers to a maladaptive pattern of use of addictive drugs that is not considered dependent.

HIV

Human immunodeficiency virus, the virus causes acquired immunodeficiency syndrome (AIDS).

Opioid	A chemical that works by binding to opioid receptors, which are found principally in the central nervous system and the gastrointestinal tract. The receptors in these organ systems mediate both the beneficial effects and the side effects of opioids. The analgesic effects of opioids are due to decreased perception of pain, decreased reaction to pain as well as increased pain tolerance. The side effects of opioids include sedation, respiratory depression, and constipation. Opioids can produce a feeling of euphoria, motivating some to recreationally use opioids.
Methadone maintenance therapy (MMT)	A form of treatment for opioid dependence. A comprehensive approach to methadone maintenance treatment generally includes a number of components—which can be delivered in a variety of ways and at varying levels of intensity—including methadone dose; medical care; treatment for other substance use; counselling and support; mental health services; health promotion, disease prevention and education; linkages with other community-based supports and services; and outreach and advocacy.
Needle exchange program (NSP)	Organized services for exchange of sterile needles and syringes used for injections as a potential means of reducing the transmission of infectious diseases.
Stimulant	A substance that acts to increase physiological or nervous activity in the body.
Suboxone	A sublingual combination tablet containing both buprenorphine and naloxone (an opioid antagonist).

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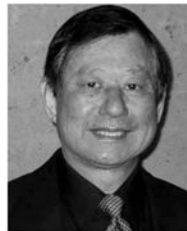
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