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HIV Prevention Among Drug Users: An International Perspective from Thailand

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ABSTRACT *All too often in reviews of HIV prevention needs, the role of drugs is summarily dismissed, especially in contexts where the heterosexual epidemic is the primary mode of transmission. Substance use and abuse, particularly injection drug use, play a paramount role in maintaining the heterosexual spread of HIV, as well as in maintaining epidemics where heterosexual spread of the infection has come under control due to prolonged and concerted HIV prevention activities. This article presents several themes to place in the developing country context what we have learned about substance use–related HIV prevention and the special problems of HIV interventions. First, the article briefly examines the international production and trade routes of opium and heroin and their role in the HIV epidemic, as well as the importance of substance abuse in heterosexual epidemics. Second, it presents a case study of HIV control that has been internationally acclaimed as one of the few successes in achieving a meaningful reduction in heterosexually transmitted HIV—Thailand. The Thai response to the injection drug use HIV epidemic, however, has been muted, and its impact on future epidemic dynamics is evaluated. The article concludes with a discussion of existing research gaps concerning the role of drug use in HIV epidemics in the developing world, with Thailand as an example.*

KEYWORDS *HIV/AIDS, Injection drug use, Prevention, International settings.*

INTRODUCTION

In the first two decades of the HIV pandemic, 30 million deaths have been estimated and some 45 million persons are currently thought to be infected worldwide.[1] The vast majority of HIV/AIDS cases have been registered in the most impoverished regions of the world, principally sub-Saharan Africa and in Southeast and South Asia. The primary mode of HIV transmission in these regions is sexual, with estimates of 90% to 95% of all cases attributed to unprotected sex.[2] In spite of these figures, the role of drugs cannot be easily dismissed, as substance use and abuse play a paramount role in maintaining the heterosexual spread of HIV, as well as in maintaining epidemics where heterosexual spread of the infection has come under control due to prolonged and concerted HIV prevention activities.

While assessing the international scope of the HIV pandemic is beyond the scope of this article, several themes are presented that place in the context of developing countries what has been learned domestically about the role of substance use–related HIV prevention, control, and the special problems of HIV interventions. First, it briefly examines the international production and trade routes of

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opium and heroin and their role in the HIV epidemic, as well as the importance of substance abuse in heterosexual epidemics. Second, a case study of HIV control is presented that has been internationally acclaimed as one of the few successes in achieving a meaningful reduction in heterosexually transmitted HIV—Thailand. The Thai response to the drug-related HIV epidemic, however, has been muted, and its impact on future epidemic dynamics remains unclear. Finally, the article discusses existing research gaps concerning the role of drug use in HIV epidemics in the developing world.

DRUG USE, OPIUM PRODUCTION AND TRAFFICKING, AND THE HIV EPIDEMIC

It is universally recognized that drug use, particularly injection drug use of heroin and cocaine (and their combinations and derivatives), accounts for a large proportion of HIV cases in the Western world.[1,2] Yet there is little appreciation for the role of drug use in the HIV epidemics in most developing nations, and even less public support for HIV prevention initiatives that center on drug abuse. In part, this reflects the fact that the vast majority of HIV in sub-Saharan Africa is attributable to unprotected sex, and the lack of documented evidence that there is substantial injection drug use. This has lead to a widespread belief that drug use is a Western phenomenon that has a minor role, if any, in the developing world. Certainly, however, injection drug use is recognized as a worldwide phenomenon. For example, in 1998, Ball et al. documented the existence of injection drug use–related HIV in over 100 nations.[3] In 2000, this estimate increased to over 114 nations.[4] One need only look at China, Vietnam, Burma, and India to see the clear association between unsafe injection practices and rapidly escalating HIV epidemics.[5]. Yet in other countries of the region, notably Laos, Cambodia, and Thailand, little attention has been given to the contribution of drug use to major HIV epidemics, focusing rather on heterosexual transmission as if it were independent of substance use.

Considerations of Drug Use in Developing Countries

Viewing drug use as a Western problem diminishes its importance in HIV transmission dynamics in the developing world. It also signifies a lack of recognition of the role that substances other than heroin and cocaine can play in maintaining epidemics globally. Alcohol is without doubt the major substance that is a significant factor in heterosexual risk,[6] and the lack of attention to its role is widespread. This reflects the ubiquitous availability of alcohol, whether commercially produced or indigenously available, its normative use (at least by men) in most societies, and its distinct cultural norms regarding consumption. Thus, a legally available, heavily advertised, and historically culture-bound product is often not considered central in the discourse on substance abuse. The literature is, however, replete with data on the role of alcohol in promoting sexual risk taking, whether by homosexual men in the United States, bisexuals in Brazil, or by men in the beer gardens of Zimbabwe.[7–9] In the social psychology literature, alcohol is viewed as promoting disinhibition or altered outcome expectancies,[10] and is considered a key factor in explaining why risk taking increases so precipitously following drinking episodes.[11,12] To understand this, one need only observe the tacit links between alcohol and sexual conquest in many print and other advertisements for alcohol.

Opium Production, Trafficking, and HIV Epidemic Dynamics

It has been clearly established that opium production and its trade routes are associated with the unfolding of HIV epidemics in Asia and the Middle East. Beyrer and colleagues at the Walter Reed Army Institute of Research have analyzed data from the US State Department and other sources on opium production, trafficking routes, and the spread of HIV subtypes over the past decade.[13] Geopolitical changes in opium production over the past 5 years have seen a shift in production from Afghanistan to Burma during the period of Taliban control and their suppression of poppy growing. This has fueled a resurgence of trafficking along overland trade routes in Southeast Asia, and Beyrer et al. have shown how HIV subtypes have changed along these same avenues of trade. Double and triple recombinant clades are now spreading from Thailand to Manipur in India, to southern China, and through Vietnam and Laos. Aside from the parenteral transmission associated with collection of blood products, the epidemic in China is largely associated with injection drug use, and the HIV subtypes identified there have also undergone rapid change in parallel with the heroin trade routes. Thus, the HIV epidemics in the area are rapidly evolving, requiring increased attention to the role of drugs and their potential impact upon the dynamics of the epidemic.[14] Since drug users play an important bridge to the wider heterosexual population, drug use must remain at the forefront of HIV prevention strategies even in locales with little documented (or appreciated) drug use epidemics.[15]

A second drug epidemic is currently flourishing in Southeast Asia. Since 1996, there has been a major epidemic of methamphetamine use in the region.[16] Originally thought to come from Burma in response to production losses due to unfavorable weather conditions and to major competition from Afghanistan, methamphetamine production has also increased in Thailand. The drug is easily manufactured from industrial and agricultural chemicals that have been transshipped from legitimate sources in the region. The popularity of the drug is evident from the first national household survey of drug use in Thailand, published in 2002: upward of 5% of secondary school students participating in the national household survey reported use of methamphetamine in the prior 3 months.[17] The treatment community in Thailand has seen major increases in patients seeking treatment for methamphetamine abuse, and this diagnosis has become the leading reason for inpatient admissions by comprehensive drug centers in the country. Given a relatively fixed number of beds allocated to drug treatment, the national focus on methamphetamine has had the unplanned consequence of limiting drug treatment for heroin- and opium-dependent injection drug users. Unfortunately, this has increased the pool of both susceptible individuals and HIV-infected injection drug users in the community.

HIV PREVENTION AND CONTROL IN THAILAND

The first case of HIV infection in Thailand was reported in 1984.[18] Sporadic reports of cases occurred thereafter, but Thailand considered itself relatively immune from the epidemic, viewing HIV as a Western problem. In 1988, an explosive increase in HIV infection among injection drug users was documented in Bangkok, where the prevalence of HIV among patients seeking inpatient treatment at the Thanyarak Hospital of the Ministry of Public Health rose from 1% in January to over 40% by September.[19] The scope of the epidemic was validated by similar reports from

outpatient heroin treatment centers administered by the Bangkok Municipal Administration. In 1989, Thailand initiated a sentinel surveillance system in 17 provinces that expanded nationwide within a year. In all provinces and regions of the country, rates of HIV among injection drug users were documented at similarly high levels.[20] The response to this epidemic was muted, however. HIV prevention activity focused on the general population, where HIV rates in the north of the country among men seeking care for sexually transmitted diseases (STDs) and female sex workers were identified by public health authorities as requiring urgent attention. With respect to absolute numbers, this was a rational but incomplete response, and it later would vex HIV prevention and control efforts.

The Thai HIV/AIDS Prevention and Control Program

In the early 1990s, Prime Minister Anand, a revered and politic statesman, called for the first AIDS control plan, and deputed an AIDS action plan from every ministry.[19,21] The backbone of this public health response was the internationally acclaimed 100 Percent Condom Campaign.[22] Viewing commercial sex as the source of much of the HIV transmission in the nation, this campaign sought to reduce the risks of HIV acquisition in brothels through a four-pronged effort. First, local public health authorities carried out a vigorous health education campaign for brothel-based female sex workers, focusing on HIV information and condom promotion. Second, all sex workers were mandated to have monthly STD evaluations and quarterly HIV tests. Third, brothel operators were held responsible for assuring complete and consistent condom use by their customers. Sanctions included fines and threats of closure for brothels where sex workers were found to have incident STDs, viewed as proof of not using condoms. Finally, a national public health education campaign was launched extolling the importance of condom use and the consequences of acquiring HIV.

The effectiveness of the Thai response to the heterosexual HIV epidemic is without reproach. Two sets of empirical data show the impact of behavior change upon the course of the HIV epidemic. First, data from national STD centers and self-reports of female sex workers on rates of condom use over time show a nearly perfect inverse relation between rates of bacterial STDs reported nationally and increased condom use in commercial sex.[22,23] Before inauguration of the campaign, there was some decline in STD rates and a moderate increase in condom use, but the rates of each dramatically changed after the HIV control program was launched.

The second, perhaps more indirect but convincing, set of data came from longitudinal studies of Thai military conscripts. A research program directed by the Johns Hopkins University, in collaboration with the Royal Thai Army and Chiang Mai University, demonstrated the association between self-reported risk behaviors among cohorts of military conscripts (selected on the basis of a lottery) and HIV prevalence.[24] In 1991, virtually all men gave a history of unprotected sex with female sex workers; at that time, HIV prevalence was nearly 12%. After 1993, when the 100 Percent Condom Campaign was firmly established, reports of sex worker visits began to fall precipitously and, by 1998, fewer than 20% of conscripts reported a history of brothel visits, with an HIV prevalence rate of under 4%. By 2001, the HIV rate among newly inducted conscripts had fallen to under 1%. Thus, a rapid change in social norms regarding acceptable sexual behavior was associated with a dramatic decline in HIV, which would later have a direct impact on HIV transmission to their sexual partners.[25]

At the Eleventh International Conference on AIDS in 1998, a number of ple-

nary speeches hailed Thailand as an example of how a determined, vigorous campaign that had the full backing of the political leadership of the country could turn the tide on the epidemic. This reputation reinforced Thailand's commitment to the AIDS control program, but other forces beyond governmental control set factors in motion that began eroding the effort. The 1997 economic crisis that affected all of Southeast Asia weakened the government's ability to sustain funding of the condom promotion effort. In addition, the emergence of effective antiretroviral agents shifted the focus from prevention to treatment of those already infected. As documented in a 2000 report by the World Bank, as the budget shifted to procure essential AIDS drugs[26] (to 85% of the national AIDS budget), funds for condom procurement and prevention declined precipitously. It appeared that Thailand had contained the HIV epidemic as it turned its attention to treating those already affected by AIDS. But there was a lingering concern among AIDS activists and the public health community that, as prevention efforts subsided, HIV might reemerge in the general population.

Drug Use and HIV in Thailand

Opium production has a long history in the mountains of northern Thailand (one axis of the infamous Golden Triangle), where it is associated with the ethnic minorities ("hill tribes") who have cultivated and consumed it for years. By the 1960s, with assistance from the United States, a major eradication and crop substitution effort succeeded in dramatically reducing production.[27] However, unintended consequences of this policy led to the eventual HIV epidemic in Thailand. First, as domestic cultivation declined in Thailand, it increased significantly in the neighboring countries of Burma and Laos. There was a dramatic rise in illegal trafficking of drugs across the border into Thailand to fulfill the needs of thousands of opiate-dependent Thais. Second, the declining supply of Thai opium forced opium smokers (traditionally the ethnic minority population) to begin using heroin, principally by injection. Thus, populations who had never before been parenteral drug users initiated heroin injection to meet their opiate needs.

National data on the extent of injection drug use are limited. One report in the late 1980s estimated that there were 36,600 opiate users in Bangkok.[28] Similar data are not available for other regions of the country. However, data from the few comprehensive drug treatment centers in Thailand indicate that the demand for heroin detoxification is high. The Northern Drug Treatment Center in Chiang Mai had in excess of 2,500 annual admissions for opiate detoxification throughout the 1990s.[29] This is a fraction of the addicted population, however, as waiting lists for treatment are long, and detoxification is widely viewed as inadequate for long-term opiate cessation.

Thailand's HIV sentinel surveillance program has been conducted since 1989, and it continues to show no moderation in HIV prevalence among injection drug users. In fact, HIV rates have been between 35% and 45% annually in every region of the country except for the south, where the rates have continued to rise.[30] Thus, HIV prevalence has declined in the general population, as evidenced by sentinel rates among women seeking antenatal care, men attending STD clinics, and military conscripts, but it has remained steady or increased among injection drug users.

Data from longitudinal studies of military conscripts in northern Thailand show how insidious opiate use has become in Thailand with respect to the HIV epidemic. In 1991, when HIV prevalence hovered around 12% among these 21-year-old men, less than 1% of the HIV-infected men gave a history of parenteral

drug use. By 1998, the fraction of HIV cases attributable to injection drug use was nearly 25%, signaling a major shift in the route of HIV infection.[31] Therefore, the HIV prevention response to the needs of drug users should have been as vigorous as that in the public health campaign focused on brothel sex at the start of the decade. Unfortunately, such a response did not occur, and its absence may be the legacy of the HIV epidemic in the present decade.

Recent studies conducted in northern Thailand have documented the extent to which HIV has affected the drug-using population.[32] The prevalence of HIV among injection drug users admitted to the Northern Drug Treatment Center in 1999 and 2000 was 30%, but among opium smokers and methamphetamine-smoking youth, it was under 3%. Moreover, HIV prevalence among Thais was significantly higher than the ethnic minority population regardless of drug of choice or route of administration, suggesting that drug abuse in this region is a critical problem for Thai citizens. Further, in a study of HIV risk factors among drug users, longitudinal data on a cohort of individuals completing detoxification showed a relapse rate in excess of 90% among injectors and 80% among drug smokers. HIV incidence is currently 8 infections per 100 person-years annually among injectors, and virtually nil among the noninjecting population. While HIV rates appear to be moderating somewhat with time, the virus continues to spread and will clearly be a significant health problem if left unchecked.[33]

HIV Prevention and Control for Drug Users in Thailand

The Thai response to the HIV epidemic among drug users has been muted, at best. Until 2002, epidemiologic data suggested that the epidemic was overwhelmingly heterosexual in nature (in excess of 80%). Thus, efforts to prevent the epidemic in the general heterosexual population were foremost among policymakers. While perhaps understandable, this policy may have unwittingly led to an unchecked and growing epidemic among drug users, which may have implications for the general population in the years to come.

The principal approach to HIV control among drug users in Thailand has been drug treatment. However, the accessibility of drug treatment is minimal. The Department of Medical Services operates six regional drug treatment centers nationally. The scope of their mission is daunting; for example, the Northern Drug Treatment Center has approximately 275 beds that offer 42-day detoxification for a population of 12 million citizens. Outside of the capital region, outpatient treatment services have been largely unavailable; a total of 85 methadone maintenance slots have been offered in Chiang Mai for the past several years, clearly insufficient to meet the needs of individuals who have failed detoxification (the center acknowledges an annual remission rate in excess of 90%).

In response to the public outcry against methamphetamine use among youths, the Department of Medical Services has shifted its inpatient drug treatment services away from opiate detoxification to providing palliative treatment for adolescents and young adults who have become dependent upon methamphetamine. National data on drug treatment admissions have shown that, while heroin was the leading reason for treatment through 1998, it now accounts for fewer than 25% of all admissions. This does not represent success in confronting the drug problem so much as the policy of shifting scarce resources to another group of patients. This policy has had two major consequences for the Thai HIV epidemic. First, treatment of methamphetamine abuse by palliative care has not been shown to be effective, and hence one might argue that these resources might better be used elsewhere.

Second, with declining admissions for heroin users, a greater number of active injectors will reside in the community. Given the high HIV prevalence among injectors, and the fact that most are sexually active, they act as a continuing bridge for HIV transmission to the non–drug-using population.

Other drug treatment approaches are not widely available in Thailand. In the north, there is one therapeutic community based at the regional inpatient treatment center that offers approximately 40 slots. Until 2002, the Ministry of Public Health did not condone methadone maintenance, although some providers have discreetly given long-term methadone to patients, which the Ministry of Public Health tacitly overlooks. It is anticipated that methadone will become more widely prescribed in the future, but availability is currently limited. Other HIV risk reduction approaches are conspicuous by their absence. For example, programs for drug users that are traditionally found in the West, such as needle exchange, bleach distribution, or outreach programs, are not available in Thailand.

In February 2002, the newly elected prime minister, Thaksin Shinawatra, announced that drug use was a scourge in the country and that new policies would be introduced to respond to the burgeoning methamphetamine epidemic. The initial response focused on interdiction of trafficking and major drug dealers. In March 2003, the prime minister declared a "war on drugs" and authorized local law enforcement officials to rid the country of drugs within 90 days. The short-term impact of this policy was the execution of over 2,000 suspected drug users in the first 3 months of the "war" and the arrest of over 45,000 drug users nationwide. The longer term impact of the policy remains unknown, but it is likely to drive drug users underground so they will be less accessible to HIV prevention efforts or willing to seek drug treatment. As a consequence, HIV infections will continue to spread among this highly vulnerable, drug-using population.

FUTURE NEEDS

The context of conducting HIV prevention research and programs in international settings is complicated by several factors. Many nations affected by drug use do not recognize addiction as a health problem so much as one of the legal system. For example, HIV prevention programs in some countries, such as China or Malaysia, may unwittingly lead to imprisonment or police-controlled treatment. Few countries follow a public health model in their treatment of addicted populations, as do Australia or the Netherlands. But as this article has made clear, Thailand's success in confronting HIV in the heterosexual population is worthy of emulation by its neighbors in the region, but its approach to drug users should be avoided at all costs.

Questions remain as to the best approach to HIV prevention for drug users. Given the diversity of drug users, their communities, and their cultures, no single strategy will work equally well for all drug users. Rather, a comprehensive approach is needed—one that includes multiple and complementary strategies that are tailored to the risk factors, characteristics, and local community context of the drug user. Research is needed to identify the strategies and components that make up a comprehensive approach, and to determine what interventions work best, for whom, for how long, and under what conditions. In the near term, however, the National Institute on Drug Abuse has produced a research-based guide on principles of HIV prevention in drug-using populations that can be applied to reduce and prevent the acquisition and transmission of HIV among a variety of drug users in

multiple settings.[34] It describes, for example, community-based outreach to hard-to-reach drug users about their risks for HIV and the behavioral changes they need to make to prevent becoming infected, the importance of HIV counseling and testing services so that drug users can learn their serostatus and seek medical care, the role of drug treatment in HIV prevention, and the effectiveness of sterile syringe programs as one component in a comprehensive approach to reduce the transmission of HIV among injection drug users.

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