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HIV and people who use drugs in central Asia: Confronting the perfect storm

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1. Introduction

Despite substantial advances in reducing HIV incidence and expanding access to antiretroviral therapy (ART), Central Asia (CA) lags behind gains made in other countries (Joint United Nations Programme on HIV/AIDS, 2012a,b,c,d). While HIV incidence is decreasing globally, the number of new HIV infections in CA is rising among people who inject drugs (PWID), female sex partners of PWID, men who have sex with men (MSM), female sex workers (FSW), and migrant workers (Joint United Nations Programme on HIV/AIDS, 2012a,b,c,d; Donoghoe, 2012; Jolley et al., 2012; Thorne et al., 2010). In several CA countries (i.e., Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, Turkmenistan), an estimated 1% of adults inject drugs, but the number exceeds 10% in areas along major drug trafficking routes, representing one of the highest rates of injection drug use in the world (Joint United Nations Programme on HIV/AIDS, 2012a,b,c). More than half of recently-diagnosed HIV infections in the region are estimated to occur in the PWID population (Joint United Nations Programme on HIV/AIDS, 2012a,b,c). Furthermore, the prevalence of hepatitis C virus (HCV) infection is exceptionally high among PWID in these countries (Beyrer et al., 2009; Walsh and Maher, 2012; El-Bassel et al., 2013), and the rates of multidrug-resistant tuberculosis (MDR-TB) in PWID in CA are also among the highest in the world (World Health Organization, 2012).

Recent evidence suggests that PWID in CA are increasingly using heroin synthetic substitutes and mixing different drugs and alcohol, which may further increase their risk for morbidity and mortality from HIV, HCV, TB, and overdose. Some forms of non-injection substance use, particularly amphetamine-type stimulants and other drugs such as “krokodil” (a home-made drug) have increased in CA (Grund et al., 2013). Excessive alcohol use in the region is associated with decreased utilization of health services, poor adherence to ART

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(Mellins et al., 2009), and engagement in risky drug-related and sexual behaviors among PWID (Wolfe et al., 2010; Abdala et al., 2010). Excessive alcohol intake among individuals receiving ART is also associated with a decreased likelihood of them having an undetectable HIV viral load (Gonzalez et al., 2013).

The relationship between non-injection drug use and HIV acquisition among PWID in the region remains poorly understood. Despite evidence suggesting widespread drug use (injection and non-injection) and the rising incidence of HIV among PWID in CA, region-specific research and scientific publications remain limited on the epidemiology of HIV and its co-morbidities, as well as HIV prevention and treatment among PWID.

In this supplement of *Drug and Alcohol Dependence*, authors from diverse disciplinary backgrounds and differing scientific expertise seek to address these large gaps in the scientific literature. This supplement is designed to deepen understanding of the HIV epidemic's scope, the scope of related co-morbidities such as HCV and TB in CA, and the status of harm reduction and other HIV-related services. Given recent advances in biomedical HIV treatment and bio-behavioral prevention, this supplement highlights the need for implementing such interventions in the region and emphasizes the importance of promoting prevention and health care for PWID in CA. Each of the articles in this supplement describes available information on a specific issue, identifies gaps in scientific knowledge, and provides an agenda for future research endeavors. Although this supplement issue focuses mainly on the five countries traditionally considered to constitute the Central Asia region (Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, Turkmenistan), a number of the included papers provide information on relevant issues from adjacent countries with similar epidemics, countries such as Afghanistan, Mongolia, and China.

1.1. Structure of the supplement

The first section of this supplement focuses on the epidemiology of HIV and the overlapping co-morbidities of HCV and TB, and describes risk environments that increase the risk of HIV among key populations in CA: PWID, MSM, female sex workers, and migrant workers. The second section focuses on the scope of harm reduction programs in CA, including policies and socio-structural barriers that prevent PWID from accessing and utilizing such programs. This section also addresses overdose prevention and access to naloxone. The third section focuses on the status of HIV testing and HIV care and treatment, and discusses coverage of biomedical prevention among PWID in this region.

1.2. Epidemiology and co-occurring issues

In this section of the supplement, the articles describe the unique features of the epidemic in the CA region. In their review of 11 published studies, Des Jarlais et al. (in press) reported that unlike other regions in the world, HIV prevalence among female PWID was not significantly higher than male PWID. They speculated that this may be due to the recency of the HIV epidemic in CA, or due to protective factors yet to be elucidated.

Baral et al. (in press) found evidence that demonstrates sustained or increasing HIV prevalence among FSWs in CA. Although the prevalence of injection drug use among FSWs

varies widely in the region, the chance of HIV infection is estimated to be 20-fold higher among FSW who are PWID. Women who inject drugs experience a 'double jeopardy' because of institutionalized stigmas for being born female and also for using drugs. Needle and syringe exchange programs (NSPs) do not address the gender-specific needs of female drug users (Latypov et al., 2010; El-Bassel et al., 2010).

In a qualitative study of HIV risk among Tajik male migrants who inject drugs, Bahromov et al. (in press) found that these men experience dual discrimination from Russian society and other Tajik migrants. The tendency of migrants to frequent FSWs elevates their risk of HIV infection through unprotected sex. Finally, Wirtz et al. (in press) reviewed studies of HIV infection among MSM, finding that HIV prevalence estimates ranged from 0.4% in Afghanistan to 1–2% for Kazakhstan, Kyrgyzstan, Tajikistan 10% in Mongolia and 6.8% in Uzbekistan. Criminalization of MSM in some CA countries and widespread discrimination against MSM in the region continue to impede research efforts in this population.

HCV, often co-morbid with HIV, presents a major cause of morbidity and mortality among PWID in the region, and it poses significant challenges for HIV treatment in CA. Given that HCV is approximately ten times more infectious than HIV when transmitted parenterally, PWID in CA are at high risk of HIV and HCV co-infection. This is especially true in prison settings, where there is a lack of injection equipment but ample access to heroin, which leads to the sharing of injection equipment. In their review, Walsh and Maher (2012) reported that the proportion of HIV-infected PWID, who are also co-infected with HCV ranges from 85–89% in Kazakhstan to 98% in Tajikistan, but that data from Uzbekistan, Kyrgyzstan and Turkmenistan are lacking.

PWID in the CA region are also at high risk of contracting TB, and HIV infection is associated with extremely high risk of progression from latent TB infection to TB disease. In a review by Schluger et al. (in press), the authors described the prevalence of co-existing HIV and TB in the four countries with the highest rates of MDR-TB in the world (Uzbekistan, Tajikistan, Kazakhstan, and Kyrgyzstan). While at present there is low prevalence of HIV co-infection in TB patients, increasing incidence of injection drug use and HIV will likely be associated with surges in the number of TB cases and with HIV co-infection in the future. Since treatment of MDR-TB and extremely drug resistant (XDR)-TB is complex, lengthy and costly, the spread of resistant TB strains in CA could pose a public health emergency that will affect neighboring regions as well. Several papers in this supplement noted major gaps in epidemiologic data, such as the scarcity of HIV incidence data and the lack of surveillance data in some regions, most notably Turkmenistan.

1.3. Harm reduction

To reduce HIV transmission among PWID, a combination of bio-behavioral and structural HIV prevention strategies are urgently needed. The combination of prevention strategies should include NSPs, opioid substitution treatment (OST), condom use, use of ART, peer education, counseling and outreach, voluntary HIV testing and counseling, drug treatment, and health services (Degenhardt et al., 2010). Structural and policy changes necessary for prevention efforts include those that eliminate environments that increase the risk of HIV

and that promote protective environments guarding against the risk of HIV infection (Rhodes et al., 1993; Mathers et al., 2010).

Despite the mounting evidence of harm reduction's effectiveness, the scope of harm reduction coverage in CA remains low, although it varies by country. For example, NSPs exist in all CA countries, but the majority of PWID in these countries avoid visiting such programs. In a recent study that included 600 PWID and their sex partners, only 11% reported that they obtained needles/syringes from NSPs; the majority obtained them from pharmacies (El-Bassel et al., 2013). Several papers in this supplement address these issues. For example, Boltaev et al. (in press) highlighted the status of harm reduction programs in CA and addressed barriers to implementing and utilizing such programs in the region. These barriers include stigma against PWID, harsh drug laws (such as mandatory long sentences for possessing small amounts of drugs for personal use), and lack of confidentiality. Since police and law enforcement officials have access to registration lists of PWID receiving drug treatment or harm reduction services, HIV prevention materials may be seized by authorities on the pretext of proof of promotion of drug use, a criminally prosecuted offense. Furthermore, Boltaev et al. (in press) critiqued the regulation that PWID must register as addicts in order to obtain drug treatment, positing that this can lead to increased social marginalization and diminish PWID's access to harm reduction programs, employment, and other governmental services.

Despite extensive research demonstrating that OST is effective in reducing HIV incidence, in improving ART adherence, and in decreasing heroin use, incarceration, and overdose, OST programs remain limited and do not exist in Uzbekistan and Turkmenistan (Boltaev et al., 2012). Lack of access to OST remains a risk factor for HIV infection in the CA region (Jolley et al., 2012; El-Bassel et al., 2013). Opponents of OST continue to promote abstinence-only approaches in the treatment of addiction, accusing OST supporters of delivering "poison rather than treatment" (Latypov et al., 2010; Boltaev et al., 2012). The influential Russian narcology lobby has hindered efforts to initiate or scale-up OST in the region, with the notable exception of Kyrgyzstan (Latypov et al., 2010). Thus, across CA, it has been estimated that less than 5% of PWID have access to OST (Degenhardt et al., 2010). Moreover, the few methadone programs operating in the region often do not provide psychosocial support to clients, and often dispense sub-optimal doses of methadone, which result in lower retention and greater likelihood of relapse (Boltaev et al., 2012). Buprenorphine, another effective and safe opioid treatment medication, is not available in CA.

Vagenas et al. (in press) reported findings on drug-related health problems and the relevant healthcare services within the criminal justice systems of CA. Their findings demonstrate that, while international evidence links imprisonment and incarceration history to high rates of HIV among PWID, thus far only Kyrgyzstan provides harm reduction services to prisoners. Furthermore, health care and HIV services within that setting are rare. Vagenas et al. (in press) discussed and underscored the need for efforts to establish harm reduction, HIV treatment, and other medical services in prisons in CA.

A systematic review conducted in 2013 demonstrated that overdose was the leading cause of mortality among PWID in the majority of the studies, exceeding AIDS mortality even among HIV-positive PWID (Mathers et al., 2013). Although naloxone is registered as an essential medicine throughout CA, its availability is exceedingly limited (Coffin, 2008; Coffin et al., 2012). Gilbert et al. (in press) provided an overview of the hidden epidemic of drug overdose and how it is linked to HIV among PWID in CA. The authors consider overdose as a medical event on par with HIV transmission and focused on the biological, behavioral and structural interactions between overdose and HIV. Such an approach may advance a public health response that efficiently targets the common macrolevel and microlevel risk factors that fuel these intertwined epidemics, and it may result in decreased social suffering, morbidity, and mortality among PWID in CA.

A major barrier to accessing harm reduction in CA is a harsh criminal justice system and intensive policing (Boltaev et al., 2012). The social contexts of injection drug use often intersect with incarceration, with up to 90% of PWID in the region are estimated to have been imprisoned at some point in their lives (World Health Organization, 2012). In the last several years, the role of the police in shaping the spread of HIV and its co-morbidities among PWID has generated interest in educational interventions targeting law enforcement. Beletsky et al. (in press) described a successful police training program in Kyrgyzstan that was designed with input from civil society; the training covered HIV prevention science, policy, and occupational safety. The results showed that such trainees were significantly more likely to support referring PWID to harm reduction organizations and to refrain from extra-judicial confiscation of syringes.

1.4. HIV testing and treatment

Preventing HIV transmission in CA depends not only on strengthening harm reduction programs for PWID, but also on providing HIV testing as well as comprehensive HIV care and treatment services (World Health Organization, 2012). At present, substantial impediments limit access to such services, which also limit their effectiveness. Terlikbayeva et al. (in press) describe how punitive drug laws, stigmatization of drug use and HIV, and the risk of police violence impede PWID from seeking HIV testing, harm reduction services, and HIV treatment. In addition, even the health sector itself does not enable a supportive environment, often exhibiting discriminatory practices by violating principles of confidentiality and privacy. Boltaev et al. (in press) describe the paucity of training in medical schools on state-of-the-art, evidence-based approaches to care and treatment of drug dependence and HIV among PWID. In addition, health care workers often lack sufficient knowledge and skills to provide psychosocial support and counseling to PWID in general, and PWID with HIV in particular. These workers also lack training in the fundamentals of HIV care and treatment, including appropriate methods to monitor patients and to support treatment adherence. Importantly, the lack of inclusion of sexual partners and risk networks in programs also impedes access to services (Terlikbayeva et al., in press).

HIV testing is a foundation of HIV-related efforts, whether for HIV prevention or for connecting HIV-positive individuals to care and treatment. McNairy et al. (in press) indicated that while HIV testing opportunities are expanding in the region, substantial

impediments to accessing HIV testing remain, including restricted availability of rapid HIV tests, delays in obtaining test results, and limitations on where and by whom HIV testing can be done. In addition, even with availability of HIV testing, structural impediments hamper access to HIV testing. For example, HIV-related services in the majority of CA countries are provided through a network of specialized programs, i.e., provincial and city AIDS Centers; their limited geographic access perpetuates stigma. In addition, as described by Boltaev et al. (in press), there is poor coordination between HIV services and other critical services for PWID, particularly those for harm reduction. Thus, providers at either type of program often may be unaware of the services available, and may even be unaware of services that their own patients are receiving at other locations.

Another critical issue highlighted in this supplement by McNairy et al. (in press) is the limited information available in the region regarding the HIV care continuum, i.e., the path of individuals from receipt of a positive HIV test, to HIV care linkage, to retention in HIV care, to initiation of ART, and to treatment adherence. Available data indicate major gaps in this continuum. The authors of the paper describe a medical record review that demonstrated that approximately only one-third of individuals found to be HIV-positive were enrolled in HIV care within six months. In addition, large numbers of registered people living with HIV were not enrolled in care and were lost to follow-up. Data also indicate that a disproportionately small proportion of HIV-positive PWID are receiving ART, suggesting the need for expansion of access to HIV treatment in order to decrease HIV-related morbidity and mortality. McNairy et al. also describe the potential of ART in prevention of HIV transmission between PWID and their risk networks in CA. In one study, ecological evidence from British Columbia, Canada, suggested that expansion of use of ART decreased the number of new HIV infections in that province, even among PWID (Montaner et al., 2010). Expanding access to ART for those who need such treatment must remain the critical priority for CA countries. Lastly, McNairy et al. described the potential for pre-exposure prophylaxis to prevent HIV acquisition among PWID based on results of recent study from Bangkok (Choopanya et al., 2013).

2. Way forward and recommendations

Countries in CA face enormous challenges due to the interrelated epidemics of drug use, HIV, HCV, and TB. This “perfect storm” requires that countries in the region carefully review their strategic plans for confronting the HIV epidemic and related co-morbidities and make appropriate policy decisions and resource allocations. Based on the critical role of injection drug use in the spread of HIV infection and HCV, and in hampering access to HIV prevention, care and treatment programs, it is critical that substantial investment be made in establishing enabling policies and in expanding harm reduction strategies via a combination of NSPs, OSTs (i.e., methadone and buprenorphine), ART, condom use, peer education, counseling and outreach, voluntary HIV testing and counseling, overdose prevention, and health care services. Moreover, structural interventions and policy changes are critically needed to reduce stigma, eliminate environments that increase HIV risks, and promote protective environmental situations that guard against vulnerability to HIV. Harm reduction programs must address the unique needs of subgroups of PWID as well. These programs should make special efforts to accommodate the needs of female drug users, who face even

greater challenges in accessing NSPs and other services than men, as well as migrant workers, who are inherently mobile.

To meet the needs of PWID, their sexual partners, and their social networks, it is critical to establish comprehensive programs that include harm reduction services that integrate HIV prevention, care, and treatment services, and target common co-morbidities. Such programs must provide strong psychosocial support components. They should also attend to other health threats that PWID face in the region, particularly HCV, TB, and consequences of drug overdose. Most importantly, redressing structural barriers is critical to enhancing access to such services. This process must involve overcoming discriminatory practices and laws and transforming the health system into one that is attuned to the needs of PWID and their families. Attention to the HIV prevention and care continuum is also critical to ensure the achievement of program effectiveness (McNairy et al., in press).

Attention to the training and supervision of health care providers is also of paramount importance. Every effort must be made to educate and train health care providers regarding the rights of PWID, to address the clinical and psychosocial needs of PWID, and to ensure that police do not interfere with prevention and treatment for drug abuse and HIV infection. In addition, efforts are also needed to increase HIV prevention and treatment literacy for both PWID and their families, to enable them to demand access to high quality services.

The paucity of data on HIV and related conditions, particularly among high risk subgroups (such as FSWs who are PWID, migrants, and prisoners) hampers the ability to design, implement and sustain appropriate programs, and to measure the performance of such programs. Establishing quality surveillance systems, program monitoring, and evaluation activities are urgent priorities to enable an effective response to the many health challenges faced by PWID and their families in the region. Finally, there is an urgent need for implementation research that identifies effective methods of implementing evidence-based interventions while building in-country research capacity. To confront the alarming escalation of HIV and related conditions in CA, there is an urgent need to expand awareness among government officials of the importance of harm reduction service coverage.

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