



Optimizing HIV prevention and treatment outcomes for persons with substance use in Central Asia: what will it take?

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Purpose of review

To summarize the status of HIV and substance use in Central Asia and discuss potential ways to move forward to effective epidemic control among people who inject drugs (PWID) in the region and beyond.

Recent findings

PWID and their partners remain the population most affected by HIV in Central Asia. Lack of effective substance use prevention and treatment options and limited involvement of PWID-led community-based organizations in HIV programs, combined with the requirement for official registration, stigma and discrimination of PWID, and criminalization of drug use remain key barriers to effective HIV prevention and treatment.

Summary

Sustainable HIV epidemic control among PWID will not be feasible without decriminalization of drug use, addressing stigma and discrimination and policy changes to enhance uptake of HIV-related prevention, treatment and support services by PWID. It is also critical to ensure adoption of innovations, particularly those that combine evidence-based biomedical, behavioral and structural interventions tailored to the needs of the PWID.

Keywords

Central Asia, HIV, people who inject drugs

INTRODUCTION

According to the 2018 World Drug Report, an estimated 275 million people worldwide used drugs for nonmedical purposes at least once during 2016. More than 30 million people who use drugs suffer from drug use disorders, and approximately 10.6 million people inject drugs, with opioids causing the most harm and accounting for 76% of drug use-related deaths [1]. In 2017, the risk of acquiring HIV by people who inject drugs (PWID) was 22 times higher than for people who do not inject drugs [2]. Thus, it is estimated that as many as 1.3 million PWID globally are living with HIV [1]. Noninjecting drug use, particularly methamphetamine and cocaine, and alcohol use are also associated with increased risks of HIV acquisition [3,4,5,6,7,8,9]. Along with this increased risk, substance use negatively affects the health of persons living with HIV (PLHIV) and has a negative impact on HIV care and treatment outcomes [10,11,12,13,14]. A study conducted by Lancaster *et al.* [11] among HIV-infected female sex workers in Malawi found that harmful drinking or alcohol dependence was associated with sub-optimal engagement in HIV treatment. Another recent study

conducted among a cohort of 1799 HIV-positive women in the United States found that substance use was associated with suboptimal adherence to antiretroviral therapy (ART) among study participants on multiple-tablet ART regimens, as well as single-tablet ART regimens [10].

On a regional level, countries of Eastern Europe and Central Asia are severely affected by substance use and its interrelation with HIV. According to the Joint United Nations Programme on HIV/AIDS (UNAIDS), unlike other regions in the world, countries of this region demonstrate neither reduction in

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KEY POINTS

- Sustainable HIV epidemic control among PWID will not be feasible without decriminalization of drug use and policy changes to enhance access to and uptake of health services by this population and reduce stigma and discrimination related to drug use.
- Strong political will and sufficient national funding is crucially important to ensure access to and coverage of PWID with high-quality harm reduction interventions, such as needle and syringe programs, naloxone distribution programs, and opioid agonist therapy.
- There is the urgent need for adoption of innovations and provision of a combination of evidence-based biomedical, behavioural, and structural interventions in a manner that is appropriate and sensitive to the needs of the PWID whether for prevention of HIV transmission or for management of HIV in the context of addiction.

HIV-related mortality nor in HIV incidence with a doubling in the annual number of new HIV infections noted in less than 20 years [15]. In addition, this region has one of the largest numbers of PWID, as well as the highest number of PWID who are living with HIV [1,2].

Central Asia includes five countries: Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan with a total population of more than 60 million ethnically, culturally and religiously diverse people. The region is located on what has been called the 'Northern drug traffic route' and in this article, we primarily focus on three countries – Kazakhstan, the Kyrgyz Republic and Tajikistan. The most recent population size estimates show that there are 120 500 PWID in Kazakhstan (UNAIDS, 2016), 25 000 in the Kyrgyz Republic (UNAIDS, 2016) and 23 100 in Tajikistan (UNAIDS, 2015). PWID and their sex partners remain the population most affected by HIV in the region. By the end of 2018, national HIV program data showed that approximately 40% of all PLHIV in Kazakhstan and the Kyrgyz Republic, and 30% in Tajikistan reported a history of injecting drug use in the past and/or were currently injecting drugs. Considering the potential underreporting of injection drug use because of stigmatization of this behavior, especially among women, the accurate proportion of HIV infections related to injection drug use might be even higher [16].

Data from the last rounds of the national integrated bio-behavioral surveys (IBBS) show that HIV prevalence among PWID ranged from 0 to 25% across sentinel sites (geographical areas) in Kazakhstan (IBBS 2018), 9.5–24.0% across sites in the Kyrgyz Republic (IBBS 2016), and from 4 to 18.5% across

sites in Tajikistan (IBBS 2018). In addition, a large proportion of PWID also have hepatitis virus C (HCV) infection, with HCV antibody prevalence among PWID ranging from 36 to 99% across sentinel sites in Kazakhstan (IBBS, 2018) and 47–79% in the Kyrgyz Republic (IBBS, 2016). In Central Asia as in other parts of the world, PWID, especially those with an incarceration history, are at high risk of tuberculosis (TB) and TB-related mortality [17,18]. Thus, for this region, the dual stigma of injection drug use and HIV as well as the high prevalence of comorbid conditions, such as hepatitis C virus (HCV) and tuberculosis, impacts the health and well being of this population [19].

CHALLENGES TO THE HIV CONTINUUM FOR PEOPLE WHO INJECT DRUGS

Key populations, including PWID face considerable challenges from the perspective of both the HIV prevention as well as the HIV care continua [20²²,21].

Firstly, stigma and discrimination associated with the use of illicit drugs create significant barriers for people in their attempts to access HIV prevention, care and treatment services in many countries [2,22²⁴]. In countries of Central Asia, stigma and discrimination at the level of service providers and the general population, combined with the requirement for official registration of PWID, and criminalization of drug use lead to high rates of incarceration and reluctance to engage with the health establishment [25²⁶,27²⁸]. Local sociocultural contexts, in particular, cultural customs, religious beliefs and gender norms, particularly in more conservative rural areas further facilitate stigmatizing beliefs [29³¹]. Secondly, limited involvement of community-based organizations in HIV programming for PWID and limited availability of HIV services for PWID at the community level also negatively affect access to and uptake of HIV services by PWID [32,33]. Thirdly, another challenge is that very few PWID in the region have access to high-quality pharmacological and abstinence-oriented drug treatment interventions. Options for rehabilitation, recovery and social reintegration are limited [34³⁶]. Although coverage of PWID with opioid agonist therapy (OAT) using methadone has increased by approximately 50% over the past 5 years in the Kyrgyz Republic and Tajikistan, it remains alarmingly low. For example, in Kazakhstan, access in 2018 was extremely limited, with only 250 patients (0.2% of the estimated number of PWID) enrolled in OAT programs at any point in time. In the absence of appropriate substance use treatment services, the impaired judgment and

mental health effects of substance use create difficulties for PWID in engaging with HIV prevention or treatment interventions [25[■],35,36,37[■]].

The increasing number of people, especially young people, injecting synthetic cathinones ('bath salts') in Kazakhstan poses another challenge to HIV prevention because of very risky drug preparation and use practices and lack of appropriate supportive services for such individuals [38[■]].

With regards to HIV treatment specifically, data from the region show that substance use including injecting drugs and harmful use of alcohol have been noted to be associated with treatment discontinuation among PWID living with HIV who were initiated on ART in Kazakhstan [39[■]]. As a result, PLHIV who inject drugs tend to be enrolled in HIV care less often and are less likely to be initiated and effectively retained on treatment compared with those who do not inject drugs as noted in Fig. 1. As a result, only 30% of PWID diagnosed with HIV had viral load suppression, compared with 37% among non-PWIDs living with HIV [40[■]].

IMPROVING ACCESS TO HIV TESTING

HIV self-testing and community-based peer HIV testing are approaches that hold promise for reaching people who are not accessing existing HIV testing services, including PWID. A cross-sectional study of 1230 individuals, including 287 PWID, conducted in Vietnam showed that HIV testing

conducted by peers enabled identifying HIV-positive individuals with high rates of ART initiation, and, thus, may be an effective approach to reach PWID who are unaware of their HIV status [41[■]]. In another study from Vietnam [42[■]], HIV self-testing was noted to be acceptable among PWID. Further work is needed to determine how best to utilize the self-test, particularly as privacy and confidentiality of HIV self-testing were the key reasons that PWID cited for choosing HIV self-testing. Implementation of social network methods, such as respondent-driven sampling and peer-based active case-finding have also been shown to be effective in identifying and engaging PWID with prior unknown HIV status in studies conducted in Tajikistan, India and Ukraine [43[■]-45[■]].

IMPROVING ANTIRETROVIRAL THERAPY INITIATION AND ADHERENCE

Opioid antagonist therapy is associated with substantial reductions in the risk for all-cause mortality in people dependent on opioids [46[■]]. There is strong evidence of the positive effects of OAT on ART initiation, ART adherence, retention on ART and viral load suppression [47,48[■],49[■]]. Integration of OAT and ART services increases ART and OAT use and reduces mortality among PWID [50[■]]. Enrollment in OAT also has positive effects on HCV and TB among PWID, facilitating the engagement in treatment, as well as improving treatment outcomes

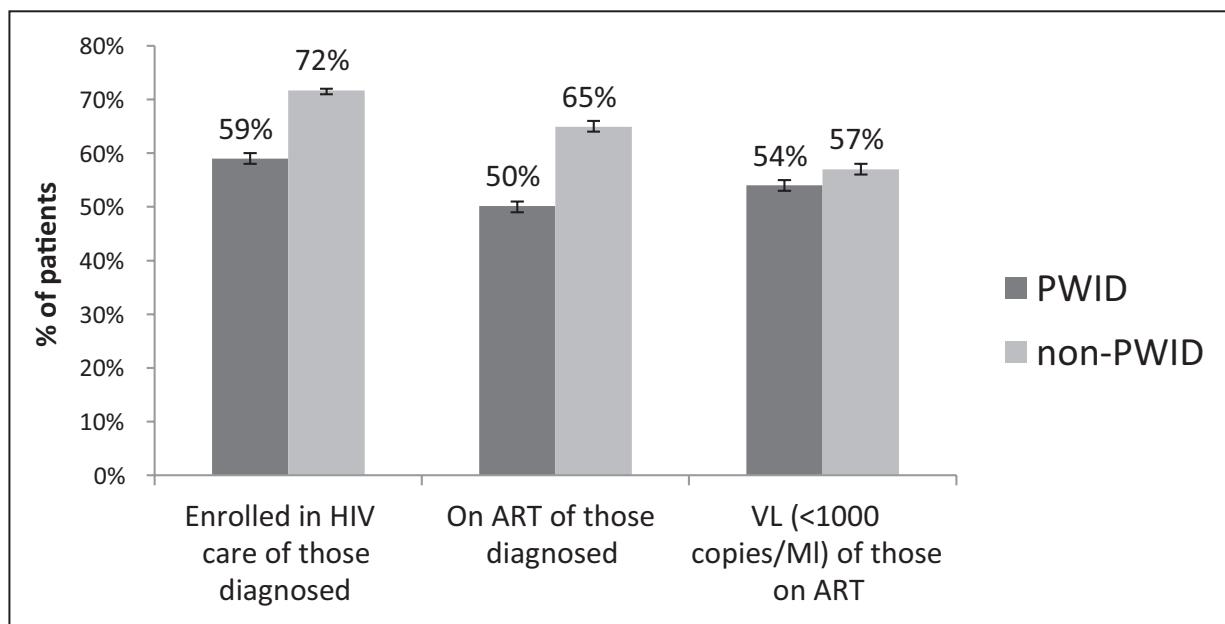


FIGURE 1. Proportion of people living with HIV (people who inject drugs [N1 = 13727] and non-PWID [N2 = 20177]) enrolled in HIV care, on antiretroviral therapy and with viral load suppression (<1000 copies/ml) as of 31 December 2018 in Kazakhstan, the Kyrgyz Republic and Tajikistan (Ministry of Health data). PWID, people who inject drugs.

[51,52,53^{*}]. On the basis of these findings, since 2014, we have supported the piloting of integrated delivery of HIV and OAT using methadone and TB services at six sites across Kazakhstan and Tajikistan. A cross-sectional analysis of patient records from 179 HIV-positive patients enrolled in OAT at integrated delivery and standard-of-care sites showed a significantly positive effect of the former on viral load suppression. Overall, 87% (95% CI: 80–93%) of PLHIV receiving services at the integrated service delivery sites had viral load suppression, whereas only 63% (95% CI 49–76%) of PLHIV enrolled at standard-of-care sites were virally suppressed [54^{*}].

Two recent randomized clinical trials showed positive effects of extended-release naltrexone (XR-NTX), an opiate antagonist that is available in long-acting formulation, on viral load suppression among incarcerated PLHIV with opioid dependence or alcohol use disorders 6 months after transitioning to the community [55^{**},56^{**}]. PLHIV who had history of injection drug use released from prison were given a monthly injection of XR-NTX for 6 months, beginning with a week before their release. Participants on the XR-NTX arm of the study were more likely than the placebo group to improve viral suppression (30.3 vs. 18.5%); maintain viral suppression (30.3 vs. 27.3%), and less likely to lose viral suppression (7.6 vs. 33.3%) by 6 months. Findings from another study among 1613 PWID in Ukraine, a

setting similar to Central Asia context in terms of HIV epidemic drivers and treatment coverage for opioid use disorders, showed that 28% of PWID were willing to initiate XR-NTX. Thus, XR-NTX offers an option for addiction treatment and ART adherence support especially for PWID who have shorter history of injection and who harbor negative attitudes regarding methadone maintenance therapy (MMT) [57^{*}]. However, XR-NTX's high cost and lack of pharmacopeia registration makes it inaccessible in several countries in Central Asia.

INTERVENTIONS FOR PREVENTION OF HIV ACQUISITION

It is widely acknowledged that needle and syringe programs (NSPs) and OAT decrease HIV incidence among persons who inject opioids by reducing injecting drug use and sharing of injecting equipment [58]. Thus, the expansion of access to NSP and OAT is as critically important to prevention of HIV acquisition as it is for enhancing outcomes among PWID living with HIV.

In terms of interventions for primary prevention, the evidence of the efficacy of preexposure prophylaxis (PrEP) for prevention of HIV acquisition among individuals at substantial risk for HIV has generated interest in its potential value among PWID. The Bangkok PrEP Trial, conducted among

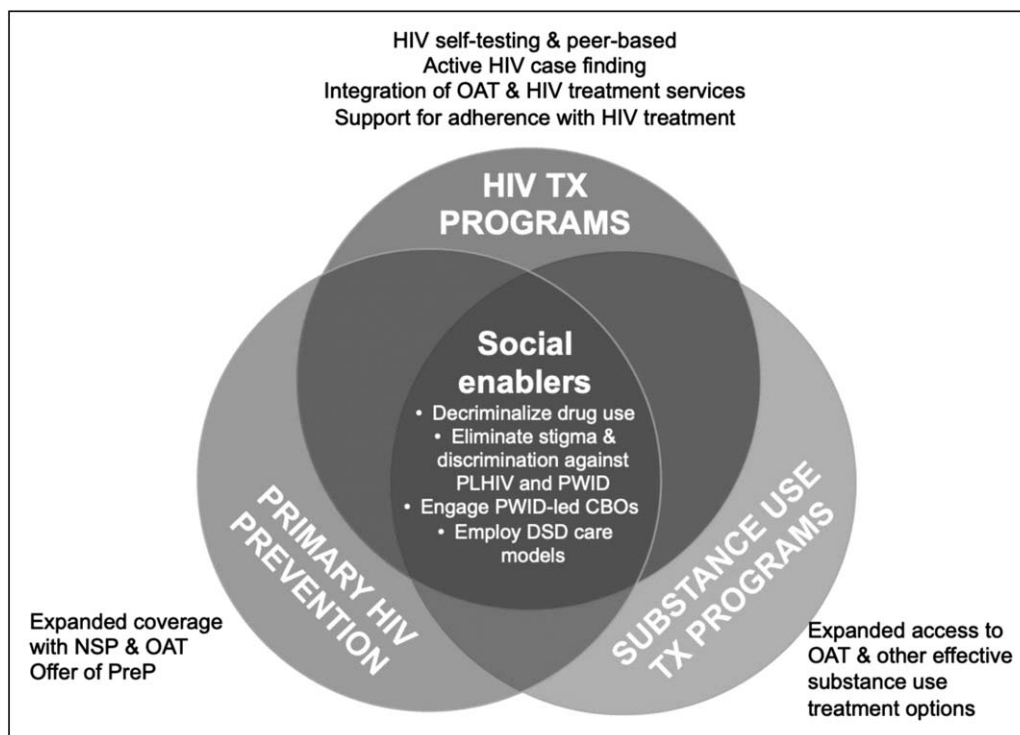


FIGURE 2. Requirements to achieving HIV epidemic control among people who inject drugs.

a large cohort of PWID, demonstrated 70% reduction of HIV acquisition among participants with detectable tenofovir levels [59]. However, implementation of PrEP among PWID is still limited and PWID are often unaware of PrEP as an HIV prevention intervention. Others from this population do not always support use of PrEP – fearing that this might shift attention from harm reduction initiatives, such as needle and syringe programs, OAT and naloxone [60]. However, a recently published qualitative study conducted in the Northeastern USA among 33 HIV-uninfected PWID and 12 clinical and social service providers [61[■]] showed that there was substantial interest in PrEP; however, both PWID and providers described several barriers to PrEP use, including fears that the high costs of PrEP could reduce funding for harm reduction programs, such as NSP, and uncertainty about the effectiveness of PrEP among PWID. Further work is needed to explore the potential use of PrEP among PWID in Central Asia. Given the high proportion of HIV-positive PWID with unsuppressed virus and low rates of consistent condom use with regular partners, implementation of PrEP should also be explored among sex partners of PWID.

Lastly, combining use of index testing of injecting and sex partners of PWID with assays that identify recent HIV infection could be fruitful in identifying those at risk for HIV acquisition for prevention efforts while ensuring prompt initiation of HIV treatment for those found to be HIV positive to prevent further transmission of HIV [62].

CONCLUSION

Control of the HIV epidemic among PWID will not be feasible without addressing fundamental factors that drive transmission of HIV and that impede engagement of HIV-positive PWID in effective care and treatment in the countries of Central Asia. Prevention of new HIV infections among PWID will require expanding access of PWID to key evidence-based primary prevention interventions, such as harm reduction programs, and OAT.

Efforts to ensure critical social enablers are essential to control of the HIV epidemic among PWID (Fig. 2). This will require prioritization of human rights over political agendas and over rigid moralistic attitudes. Decriminalization of drug use and other policy changes are needed including abandoning the existing requirement for mandatory collection of personal data as part of the registration of persons with substance use disorders, which may enhance access to and uptake of health services by this population and may facilitate reduction in stigma and discrimination related to drug use.

In addition, there is the urgent need for adoption of innovations, such as expansion of HIV testing at the community level, including self-testing options for PWID and their partners, as well as pursuit of PrEP as an additional HIV prevention intervention. Assessment of the feasibility and effectiveness of combinations of evidence-based biomedical, behavioral and structural interventions is needed. Such interventions need to be developed and implemented with active community engagement to inform their design and implementation and to take into account the needs of sub-populations of PWID, for example, substance-using youth and women. Ultimately, adoption of differentiated service delivery models is needed in order to tailor services to the needs of this population [63^{*}].

With the decrease in external HIV funding for Central Asian countries, it becomes crucially important to garner strong political will and sufficient national funding are available to enable PWID to access the package of recommended interventions that have been shown to be effective in reducing HIV transmission among this population [64]: OAT must be acknowledged as a fundamental component of the management of opioid dependence and must be integrated with other relevant health services, such as HIV services and/or primary healthcare services.

In summary, successful control of the global HIV epidemic requires attention to addressing the contribution of substance use to continued transmission of HIV. It will also require overcoming deep societal prejudices regarding substance users and concerted efforts to shape the HIV response to their unique needs.

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Conflicts of interest

There are no conflicts of interest.

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- of special interest
- of outstanding interest

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