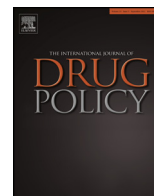




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### Research paper

# Effective use of naloxone among people who inject drugs in Kyrgyzstan and Tajikistan using pharmacy- and community-based distribution approaches

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### ABSTRACT

**Background:** Opioid overdose (OD) is a major cause of mortality among people who inject drugs (PWID) in Central Asia, and distribution of naloxone, an opioid antagonist, can effectively prevent these deaths. However, little is known about the use and wastage of distributed naloxone ampoules. Having reliable data on wastage rates is critical for accurately calculating the health impact of naloxone distribution projects targeting PWID.

**Methods:** In 2011, Population Services International (PSI) launched two pilot naloxone distribution programs in Kyrgyzstan (pharmacy-based approach) and Tajikistan (community-based approach). PWID were trained on OD prevention and naloxone use. Upon returning for more ampoules, the PWID completed a brief survey on their OD experience and naloxone use. 158 respondents in Kyrgyzstan and 59 in Tajikistan completed the questionnaire. Usage and wastage rates were calculated based on responses. A four-year model wastage rate that takes into account the shelf life of naloxone for both countries was then calculated.

**Results:** 51.3% of respondents in Kyrgyzstan and 91.5% in Tajikistan reported having ever experienced an OD. 82.9% of respondents in Kyrgyzstan and all respondents in Tajikistan had ever witnessed an OD. Out of these PWID who experienced or witnessed OD, 81.5% in Kyrgyzstan and 59.3% in Tajikistan reported having been injected with naloxone, and 83.2% in Kyrgyzstan and 50.9% in Tajikistan reported injecting another individual with naloxone. Of ampoules received, 46.5% in Kyrgyzstan and 78.1% in Tajikistan were used. In both countries, 3.1% of these ampoules were wasted. The four-year model wastage rates for Kyrgyzstan and Tajikistan were found to be 13.8% and 3.9% respectively.

**Conclusion:** Findings indicate that a high proportion of naloxone distributed to PWID is used in actual OD incidents, with low wastage rates in both countries. Expanding these distribution models can potentially create more positive health outcomes for PWID in Central Asia.

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### Introduction

According to reports from UNODC and non-governmental and community-based organizations, overdose (OD) is the leading cause of mortality among people who inject drugs (PWID) in Central Asia. In addition, it is estimated that almost 1% of the adult population in the region uses opioids, and the estimated prevalence of injecting drug use (1.3% of the population aged 15–64) is more than four times higher than the global average (Ataants, Latypov, & Ocheret, 2011; UNODC, 2013). A survey conducted by

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Population Services International (PSI) in 2010 showed that, out of 520 PWID in Kyrgyzstan and 431 PWID in Tajikistan, 23.7% and 34.1% respectively had personally suffered from an OD at least once in the past 12 months. 56% of PWID in Kyrgyzstan and 45% in Tajikistan had witnessed someone else suffering from an OD in the past year. Meanwhile, official data suggest that in 2011, 64 people died due to drug overdose in Kyrgyzstan (Aidarov et al., 2012), and that there were 39 officially documented cases of fatal drug overdoses in Tajikistan (Hasanov et al., 2012). However, it is most likely that these numbers are much higher due to under-registration of OD incidents, as PWID often avoid calling an ambulance out of fear of attracting the attention of law enforcement. The 2010 PSI survey showed that about a quarter of the PWID surveyed in Kyrgyzstan and Tajikistan had reported seeing someone die because of an OD in the past year (Population Services International, 2010).

Naloxone, a short-acting specific opioid receptor antagonist that reverses the effects of OD when injected during an OD episode, has long been known to be effective in preventing death due to OD. It is non addictive, and works by competing with opioids in binding to opioid receptors, thereby blocking the effects of the opioids and reversing OD (UNODC & WHO, 2013). Naloxone is included in the WHO Model List of Essential Medicines. Both Kyrgyzstan and Tajikistan have naloxone included in their National Lists of Essential Medicine since 2007, and in both countries it is a relatively cheap medication, costing under 1 US dollar (60 cents in Tajikistan, and 50 cents in Kyrgyzstan) per ampoule (Ataiaants et al., 2011).

Despite these benefits, naloxone is often unavailable to PWID, where in many countries it is available only through medical professionals and/or with prescription. Compared to the need, very few OD prevention programs exist, globally, that include naloxone distribution (UNODC & WHO, 2013). In Central Asia, naloxone is primarily available in emergency departments as well as drug treatment and toxicology facilities. With the exception of Kyrgyzstan, where under the PSI project naloxone is available through a redeeming-voucher system, naloxone is not available in pharmacies in Kazakhstan and Tajikistan. Moreover, OD prevention is not indicated as a priority in national health strategies, policies and programs (Ataiaants et al., 2011). Naloxone is otherwise available in Kyrgyzstan and Tajikistan only through funding from international donors, such as the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) and the UNODC (between 2010 and 2011) (Ataiaants et al., 2011).

As a response to this unmet need for accessible OD prevention methods, PSI Central Asia launched a pharmacy-based naloxone distribution pilot in Kyrgyzstan in April 2012 (registration of naloxone in Kyrgyzstan occurred in November 2011) and a direct community-based naloxone distribution pilot through local NGOs in Tajikistan in July 2011. The pilot programs are conducted in Chui oblast, Bishkek city, and Osh, Kyrgyzstan and in Dushanbe, Vahdat, Qurghonteppa, Kulob, and Khudjand, Tajikistan. Both of these distribution models ensure that PWID are trained in OD prevention and the use of naloxone before naloxone ampoules are provided to them. However, once these ampoules are distributed, the use of these naloxone ampoules by PWID in these Central Asian republics remains inadequately documented. In order to determine the utility of OD prevention education and how naloxone is being used in the community, it is important to collect more information on PWID's experiences with overdoses and overdose prevention, frequencies and conditions in which naloxone is being used, as well as data on naloxone wastage. Such evidence would also allow for greater understanding of how to improve naloxone distribution models and ensure a more efficient naloxone usage among PWID clients.

## Methodology

### Recruitment of participants and measurements

Under the naloxone distribution and OD prevention projects in Kyrgyzstan and Tajikistan, PWID were informed during outreach activities about trainings on OD prevention and naloxone use, and were then invited to NGO venues to participate in these trainings. After completing the training, every trainee in Kyrgyzstan received one voucher to redeem for free naloxone at partner pharmacies. In Tajikistan, these trainees received free naloxone ampoules at the NGO venues immediately upon receiving education. When PWID came back to NGOs for additional vouchers/ampoules, PWID were asked to be interviewed using a questionnaire designed for the purpose of tracking the use of naloxone ampoules, as well as designed to examine how the naloxone ampoules were used. Participants were described the purpose of the study, and had the option to refuse to participate and receive an additional voucher/free ampoule of naloxone. 158 unique PWID in Kyrgyzstan and 59 unique PWID in Tajikistan (i.e., participants who were interviewed the first time they returned for an ampoule and who were not interviewed again once they returned for additional ampoules) agreed to participate in the study.

PWID participants of the survey were tracked by providing each participant with a Unique Identifier Code (UIC), which is a method developed by PSI and most recently adapted by other organizations as well (WHO, 2012). Under this method of tracking participants, each PWID within the study was given a simple 7-character code comprised of the first two letters of their mother's first name, the first two letters of their father's first name, their gender (1 for male and 2 for female) and the last two digits of their year of birth. As such, this method of using UICs made it possible to gather information on unique PWID participants of the study while maintaining their anonymity.

During the survey, respondents were asked what happened to ampoules that they received from the project in the past, as well as what happened to ampoules they received from other sources. It should be highlighted that PWID were able to distinguish between naloxone ampoules received from the present projects and from other sources due to location (in Kyrgyzstan, PWID could obtain naloxone ampoules at pharmacies only through the present program, and in Tajikistan naloxone ampoules were only distributed through specific local NGO venues) as well as differences in timing of distribution (other sources experienced slight delays in distributing ampoules). In Kyrgyzstan it is most likely that these PWID received naloxone from narcology centers through UNODC, and in Tajikistan it is likely that they received naloxone through GFATM. Respondents were asked to select one of ten response options when describing what happened to the ampoules they received: (i) self administered, (ii) administered on someone else, (iii) broken/damaged, (iv) lost, (v) confiscated, (vi) stolen, (vii) expired, (viii) sold to others, (ix) given away/shared, (x) respondent still keeps the ampoules and ampoules are good to be used. Data collection lasted approximately 6 months, from October of 2012 to March of 2013, in both countries. The study was conducted in the same locations where the pilot programs were implemented: Chui Oblast, Bishkek and Osh cities in Kyrgyzstan, and Dushanbe, Vahdat, Qurghonteppa, Kulob, and Khudjand cities in Tajikistan.

### Calculation of the naloxone wastage rate

The calculations of the wastage rate of the naloxone ampoules used by PWID were made according to previous methods internally used by PSI, which take into account the shelf life of naloxone (ampoules that remain and are not used, thus expiring). PSI defines

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