

13 Naloxone as Overdose Prevention in the Prison Setting and in the Community. A Comparison of the Situation in Germany, Kyrgyzstan, and China

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Introduction

Naloxone is used worldwide in medical emergencies to reverse respiratory depression caused by opioid overdose and has become a key intervention in preventing opioid overdose deaths (Moustaqim-Barrette et al., 2021). Naloxone was discovered and patented at the beginning of the 1960s. In 1983, the World Health Organisation (WHO) added naloxone to its Model List of Essential Medicines. In 2017, a nasal spray was made available by the European Commission (EMCDDA, 2016).

But naloxone is also promoted outside of Europe. In 2016, Canada lifted the prescription requirement for naloxone to increase public access. Instead of requiring a prescription for each individual, pharmacies are able to proactively give out naloxone to those who might experience or witness an opioid overdose (Government of Canada, 2017). In the United States, access to naloxone is controlled individually in each state, with all 50 states allowing individuals to obtain the medication – it is mostly freely dispensed at pharmacies (Safe Project, n.d.).

Naloxone programmes aim to increase the availability of the medication in emergency situations by administering the medicine to opioid-using peers, family members, and other trained laypeople. In the prison system, Naloxone is distributed upon release to prevent opioid overdose death in the period of increased vulnerability following release from prison. In take-home naloxone programmes, nasal spray kits are usually administered. Over the past fifteen years, so-called ‘take-home naloxone’ programmes have gained increasing attention with several pilot programmes being initiated in European cities (EMCDDA, 2016). In these programmes, naloxone is distributed to prisoners upon release to prevent overdoses in the crucial initial time period outside of prison.

This chapter studies naloxone programmes in the prison system and in the community. As naloxone programmes are implemented in many

countries, there are different challenges surrounding scaling up naloxone training and distribution. Therefore, we conducted a comparative case study of naloxone programmes in the prison systems of three countries: Germany, Kyrgyzstan, and China. The objective of our analysis is to compare the difficulties and strengths in the naloxone programmes in each of these countries and to identify barriers to implementation. The chapter is structured as follows: first, important background information about naloxone and naloxone programmes is provided. Second, the experiences of the pilot naloxone programme for ex-detainees in Germany, the so-called 'take-home naloxone' programme, are presented. The next section discusses the debate surrounding naloxone distribution and overdose prevention in Kyrgyzstan and China. The chapter concludes with a discussion on the prospects of naloxone in the prison system in the region of Central Asia and China.

1. Background: Naloxone and Overdose Prevention

Opioid overdose is a major public health issue. Globally, an estimated 500,000 deaths in 2017 were related to drug use. Of these, the majority of deaths were related to opioid use (approximately 70%), of which 115,000 people died from opioid overdose (WHO, 2021). During the Covid-19 pandemic, the number of deaths due to opioid overdose has increased (CDC, 2020). Opioid overdose results in respiratory depression, which can be fatal. Naloxone is an antidote and reverses the effects of opioids within minutes. It was patented in 1961 and continues to be widely used in medical contexts to this day (Strang et al., 2019).

In the 1990s, the first proposals for the take-home use of naloxone were published (Strang et al., 1996). Take-home naloxone seeks to prevent overdose deaths and takes advantage of the observation that for many, overdoses happen in the presence of others (Strang et al., 2019). The groups that have an increased likelihood of being present during such an overdose can be easily summarised. These are, on the one hand, the drug users themselves and, on the other hand, relatives, social workers, and police officers. Providing these groups of people with naloxone and training them in its use enables them to administer naloxone immediately in the event of an overdose, thereby reversing the potentially lethal effects of opioids and saving the life of the person affected (WHO, 2021).

Since naloxone itself carries hardly any risks, its use by medical laypersons is unproblematic, at least since naloxone has been available as a nasal spray (Schäffer, 2020). Globally, there are various large take-home nalox-

one programmes, particularly in the United States, Canada, and England, which have reached hundreds of thousands of people (Barnsdale et al., 2017; Moustaqim-Barrette et al., 2019; Strang et al., 2019). In this regard, the effectiveness of take-home naloxone as a lifesaver has been repeatedly demonstrated (McDonald and Strang, 2016; Olsen et al., 2018) and its implementation has been recommended by both WHO and EMCDDA (EMCDDA, 2016; WHO, 2021). Take-home naloxone thus aims to empower people with an increased likelihood of being present at an opioid overdose to properly use and be equipped with naloxone to prevent opioid overdose deaths.

2. *Take-Home Naloxone in Prison*

Upon release from prison, the likelihood of dying from an overdose is particularly high (Jamin et al., 2021; Liu et al., 2021). The same is true for other phases that follow a period of abstinence (e.g. cessation or discontinuation of treatment) (WHO, 2021). Since, after a few days without consumption, the tolerance to the consumed substance decreases rapidly, too high dosages are often consumed in these phases, which can lead to a fatal overdose. For this reason, take-home naloxone can be particularly effective during prison release (Bird et al., 2016). Additionally, the setting is appropriate for naloxone education. Contact with drug users is a given, and the ability to provide more detailed group education on drug emergencies and naloxone is available. It is also possible to provide naloxone upon release from prison.

At the same time, several barriers play a role in the implementation of take-home naloxone in prison. Just like when living in the community, not all drug users are amenable to take-home naloxone education in prison. Both the conviction that they are not at risk of overdosing and the fear of repression due to disclosed opioid use, even if only prior to incarceration, may be reasons for this. In addition, take-home naloxone seems to go against the conviction to live abstinently. Thus, addressing this is not a self-fulfilling process, and face-to-face approaches and peer involvement can be helpful. The indication that naloxone can not only ensure survival in the event of one's own overdose but also offers the possibility of saving the lives of others in the event of an overdose can motivate drug users to get involved. The institution of prison itself can also stand in the way of implementing take-home naloxone. It requires staff for its implementation, money to buy the naloxone itself, and a willingness

to acknowledge possible post-release use and implement harm reduction measures.

The attitudes of prison staff can also stand in the way of naloxone training in prison. In addition, different sectors sometimes need to collaborate to coordinate training, obtaining naloxone, and dispensing naloxone upon release from prison (Horsburgh and McAuley, 2018). Scotland has been particularly successful in this and is the first country in the world with government funding for a national take-home naloxone programme, offering take-home naloxone training with naloxone dispensing upon release from prison. All prisoners who test positive for opioids are offered training, which should be completed within the last six weeks of imprisonment but is generally available at any time. Individuals who are not initially interested will be approached again at a later date and attempts will be made to motivate them to participate.

The training is linked to other pre-release programmes. While group training sessions were predominantly offered at first, short individual training sessions (10–15 min) have become increasingly popular. One-on-one trainings require fewer organisational hurdles within prison processes and are mindful of the sometimes very personal nature of the issue of overdose, which can be more difficult to address in a group setting (Horsburgh and McAuley, 2018). In doing so, 2,273 individuals in prison were reached in the first three years of the programme (2011–2013) (Bird et al., 2016). By the end of 2017, nearly 5,000 naloxone kits had been dispensed to individuals upon release from prison (Barnsdale et al., 2017).

Obtaining data on how many naloxone kits were used and how many overdose deaths were prevented in the case of different programmes is difficult and cost-intensive because the target groups need to be reached with a follow-up survey. The UNODC and WHO project ‘Stop Overdose Safely’ reported that 34.5% of the trained drug users who took part in the project witnessed an overdose and that 89.1% used naloxone. In 98.3% of cases in which naloxone was used, the victim survived the overdose (WHO & UNODC, 2021: 18).

3. Case Studies

Naloxone is effective, and laypersons are able to use naloxone correctly. With the introduction of the nasal spray, the administration of naloxone has become even easier. To reach the target group (defined as drug users and their social environment), different approaches can be applied. In the following section, we describe the prison system as a suitable context

for training people who use drugs and for distributing naloxone upon release from prison. Since the implementation of new programmes is often challenging and accompanied by various difficulties, we conducted three descriptive case studies of naloxone programmes in the prison systems of three countries: Germany, Kyrgyzstan, and China. The three examples illustrate the differences between the systems simply by the different ways in which the implementation is presented.

3.1. *Germany: Experiences of the Take-Home Naloxone Programme*

In Germany, take-home naloxone is currently only available in a few prisons. Since prisons in Germany are responsible for providing medical care to people in prisons, they also have to bear the costs for naloxone. However, since naloxone is only intended for the period after release, the question of financing is often problematic. However, the immediate availability of naloxone upon release from incarceration is critical. In addition, the implementation of naloxone education is an additional burden for prisons and must be integrated into the daily prison routine. Likewise, social and medical services need to establish a functioning cooperation to coordinate training and procurement of naloxone nasal spray.

In Germany, three federal states have so far enabled and financed take-home naloxone in prisons. Bavaria conducted a pilot project on the use of naloxone as overdose prevention in the prison system (Wodarz-von Essen et al., 2021). It remains to be seen to what extent the state-wide rollout planned in these states from 2023 will succeed. While in Bavaria naloxone training is mostly provided in prison by social workers from independent addiction support facilities, in North Rhine-Westphalia and Baden-Württemberg training is more often provided by prison staff themselves. Both are equally suitable options. In any case, the decisive factor is the cooperation of planning, addressing, and implementing the training sessions and the subsequent supply of naloxone upon release from prison. Implementation is still in its early stages, and there are no reliable statistics. It is estimated that in total, 100 to 300 naloxone kits have been issued on release from prison in Germany to date.

Since July 2021, the Federal Ministry of Health has provided funding for the nationwide project NALtrain. The objective of this programme is to provide training to prison staff and people in prison on the use of naloxone in overdose emergencies. The project aims to train as many prison employees as possible and reach out to as many drug users as possible. Especially in the prison context, there are significant differences

between the 16 federal states of Germany. The three federal states that are taking part in NALtrain have showed that with political support, it is possible to implement take-home naloxone programmes in prison settings very quickly. Besides the question of how to fund naloxone programmes, another challenge for scaling-up take-home naloxone is posed by the laws that exist in Germany for prescribing and distributing naloxone.

3.2. *Kyrgyzstan: Experiences with Naloxone in Prisons and the Community*

In Kyrgyzstan, the strategies to reduce deaths from opioid overdoses were set out in Resolution No. 445 of the Cabinet of Ministers of the Kyrgyz Republic of 10 August 2022. The resolution describes the tasks of reducing overdose mortality as follows: (1) conducting research on reducing mortality from the entire spectrum of narcotic drugs and psychotropic substances as well as new psychoactive substances, including reducing mortality from so-called 'indirect causes'; (2) providing professional training for ambulance crews; (3) providing information for drug users and those around them about overdoses, their prevention, and their treatment; and (4) the continuation of the naloxone programme.

The implementation of this programme is carried out by the Republican Center for Psychiatry and Narcology in collaboration with non-governmental organisations (NGOs). This involves distributing naloxone to clients who are injecting opioids. It should be noted that the number of opioid users in Kyrgyzstan has been declining in recent years. Nevertheless, naloxone is distributed among the customers of the syringe exchange points, both in the community and in the penitentiary system.

In Kyrgyzstan, all harm reduction programmes that are implemented in the community are also carried out in the penitentiary system. For example, methadone maintenance therapy and syringe and needle exchange points are being implemented both in the penitentiary system and in the community.

The regulatory framework for the use of naloxone was developed between 2009 and 2014. First, methodological work was carried out to include naloxone in the List of Essential Medicines. Currently, the drug naloxone is included in group 4. Antidotes used in case of drug poisoning are included in subgroup 4.2. The specifics of the List of Essential Medicines are regulated by the Decree of the Government of the Kyrgyz Republic No. 274 of 6 June 2018. Naloxone is thus included in the List of Essential Medicines of the Kyrgyz Republic and considered a specific antagonist of opioids. To prevent overdose, people with substance use

disorder are given naloxone. Naloxone is issued only in the presence of identity documents. Naloxone can be handed out to the relatives of the patient if they are able to provide documents proving their identity.

Kyrgyzstan has standards for the provision of medical services for injecting drug users. These standards include guidelines for overdose prevention using naloxone, approved by Order No. 494 of the Ministry of Health from 8 October 2010. The Standard for the Prevention of Overdoses from Opioids using naloxone prescribes a mechanism for providing naloxone to active drug users.

In 2012, the Clinical Guidelines for the Diagnosis and Treatment of Mental and Behavioral Disorders Caused by Opioid Use were approved. These are guidelines for medical professionals of narcological services, medical teachers, and health care professionals. The guidelines include chapters on 'acute opioid intoxication'; the classification according to ICD 10; general concepts of acute intoxication with surfactants; the main diagnostic criteria, F11.0, 'acute opioid intoxication' (ICD 10); clinical treatment of acute opioid intoxication (drug intoxication); differential diagnosis of overdoses from various psychoactive substances; and the definition, signs, and treatment of opioid overdose. The standards also describe the rules for how to proceed in an overdose emergency.

In 2013, the clinical protocol 'Opioid Overdose Care' was prepared and approved. It describes the definition of 'overdose', which can cause negative short-term or long-term somatic and mental consequences. The factors contributing to opioid overdose are defined. The signs of opioid overdose and the differences between the state of strong euphoria and overdose are described. The protocol has a set of step-by-step instructions for helping in an overdose emergency. The protocol includes information on providing first aid, such as artificial respiration, and on the administration of naloxone. The protocol is publicly available on the websites of the Republican Center of Psychiatry and Narcology and the Kyrgyz State Medical Institute of Personnel Training.¹

In addition, the issues of opioid intoxication, overdose, and assistance procedures are included in educational courses for medical specialists. For a long time, active work was carried out in the form of seminars and training sessions held by medical workers providing emergency medical

1 Republican Centre of Narcology, *Peredozirovka opiatami* [Opiate overdose], available at <http://www.rcn.kg/prevention-overdoses/protocol>; Ministry of Health of the Kyrgyz Republic, *Klinicheskie Protokoly* [Clinical Protocols], available at <https://www.med.kg/clinicalProtocols>.

care and by outreach workers to reduce deaths from opioid overdoses. The Republican AIDS Center, the Republican Center for Psychiatry and Narcology, and NGOs (for example, AFEW, ICCUP) conduct training for prison medical staff involved in overdose prevention programmes. The Republican AIDS Center and the Republican Center of Psychiatry and Narcology distribute informational material, new guidelines, and clinical protocols.

Since 2008, the Programme for Reducing Overdose Mortality has been implemented by the Republican Centre for Narcology. In December 2021, the centre was renamed the 'Republican Center for Psychiatry and Narcology' following the unification of psychiatric and narcological services. Furthermore, NGOs are actively working in this field, e.g. by running a phone hotline 'What to do in case of opiate overdose' and by distributing informational material (brochures, posters, leaflets) on the prevention and management of overdose emergencies, designed for injecting drug users.

NGOs in Kyrgyzstan run programmes with peer-to-peer volunteers. As a rule, they provide information on safe drug-use behaviour and on medical and social services that provide assistance for drug users, including the syringe exchange programme and the methadone maintenance treatment. Moreover, NGOs organise information meetings in prisons with people with substance-use disorders to inform them about overdose prevention. They conduct short trainings for people who use drugs to raise awareness of the signs of overdose, methods of providing pre-medical care, and the correct use of naloxone.

The Kyrgyz Republic participated in a multicentre study Stop Overdose Safely (SOS), jointly implemented by UNODC and WHO. The project included the rapid distribution of take-home naloxone and the provision of trainings for people who use opioids and are likely to be in a position to witness an overdose emergency. 14,263 potential opioid overdose witnesses were trained within the eight-month implementation phase in four countries: Kazakhstan, Kyrgyzstan, Tajikistan, and Ukraine. The project was successful and showed that naloxone is considered acceptable by key stakeholders, ranging from people using drugs to health and law enforcement officers. However, the spread of naloxone programmes continues to reach its limits due to a scarcity of public funding.

3.3. *China*

In 2008, China initiated naloxone programmes in Yunnan and Guangdong. Considering the current situation in the country, the most effect-

ive method for social workers is to distribute naloxone to peer groups, methadone maintenance treatment clinics, and needle exchange personnel. When heroin users witness an overdose emergency, they call social workers for assistance, and social workers will administer naloxone as first aid at the scene. China does not have a special programme that addresses overdose emergencies in the prison system.

Several studies on the use of naloxone in overdose emergencies have been conducted in China. The study by Luo et al. (2013) showed that naloxone first aid administered by social workers is feasible and acceptable to heroin users. The investigation of the naloxone programme in the city of Gejiu by Huang et al. (2011) revealed that naloxone first aid administered by social workers can be appropriate for small and medium-sized cities like Gejiu. In China, it is generally accepted that the use of naloxone by social workers significantly reduces heroin overdose mortality among injecting drug users. If only the mortality rate were used as the criterion for evaluation, the mortality rate of injecting drug users when social workers administer naloxone first aid would be significantly lower than when the approach of self-first assistance is used.

Social workers are non-medical personnel, whereas naloxone is considered a prescription drug in China. Some individuals are concerned about social workers' ability to recognise a heroin overdose and administer naloxone correctly. In certain cases, artificial respiration and cardiopulmonary resuscitation are preferable to other options. However, there are no medical reasons against the use of naloxone. It is a harmless medication. Seven of the 59 recipients of naloxone that took part in the study experienced withdrawal symptoms, but no other adverse effects were reported. Before being allowed to administer naloxone as first aid, social workers must undergo training. The training includes identification and diagnosis of overdoses, cardiopulmonary resuscitation, artificial respiration, and training in first aid skills. According to the investigation, some social workers received first aid training from medical doctors and obtained a first aid certificate from the Yunnan Provincial Emergency Center.

Naloxone is an effective and safe treatment for a heroin overdose. After training, drug users can use naloxone correctly for first aid; timely injection of naloxone after an overdose is the key to successful first aid, highlighting the importance of social workers arriving promptly at the scene of an overdose.

Social workers are non-medical personnel. If a dispute arises, it is illegal for them to prescribe medicine, and criminal liability may ensue if they do. Although social workers sign a first aid agreement and photograph and videotape the first aid process to avoid legal and first aid risks, legal

risks still exist, and the effect of first aid has yet to occur. It is in a state of 'acquiescence' regarding significant conflicts.

To improve overdose prevention in China, we need to consider the following three policies: Medical doctors should prescribe naloxone to people at risk of a heroin overdose; naloxone distribution programmes should be expanded to cover more people using opioids; and naloxone should be classified as a prescription drug.

4. Discussion and Conclusion

The comparison of the three cases studies shows that the implementation of naloxone programmes in the prison system and in the community is not an easy process. In all three countries, it is generally accepted that naloxone is an effective treatment in opioid overdose emergencies. Despite this finding, we are a long way away from naloxone being used in all cases of overdose. The main reason for this is that the target groups do not have access to the drug. Naloxone programmes provide an opportunity to facilitate access to the medication and to educate people on the use of naloxone in emergencies. So-called take-home naloxone programmes address an individual's increased vulnerability following prison release. Distributing naloxone as a take-home kit upon release can prevent a potentially fatal overdose. Although the benefits of this intervention are evident, take-home naloxone programmes have not yet been implemented in all the contexts where this would theoretically be possible.

The countries examined are at different stages of programme implementation. In Germany, the pilot project NALtrain has started training programmes for prison staff and for people using drugs in opioids in three federal states. Since being launched in July 2021, the pilot programme has scaled training and information exchange on naloxone. Together with an earlier pilot project in Bavaria, NALtrain shows that take-home naloxone programmes can successfully be implemented in the prison context in Germany. This has an impact on political decision makers. However, to date, there are only a limited number of German prisons that have incorporated a take-home naloxone programme into their daily routine. The result is that naloxone cannot always be used when it is needed. For the effective prevention of fatal overdoses, Germany therefore needs to upscale the intervention.

In Kyrgyzstan, the benefits of naloxone programmes are equally acknowledged. The country has created the legal basis for conducting naloxone programmes and included the drug in the List of Essential Medicines.

Kyrgyzstan is committed to creating the same conditions for harm reduction programmes in the prison system as in the community. This commitment extends to needle and syringe exchange points, methadone maintenance programmes, and overdose prevention with the help of naloxone. The prison administration conducts trainings for prison staff and for people using drugs in prison that include information on overdose prevention and on naloxone. In contrast to Germany, however, Kyrgyzstan has not introduced take-home naloxone programmes. Upon release from prison, people using drugs, or their family members, can obtain naloxone in pharmacies. The question remains whether people have the necessary information and can take on the responsibility for overdose prevention.

In China, naloxone programmes have been initiated in two regions. Chinese researchers have demonstrated that naloxone programmes are an effective treatment for overdose prevention among the Chinese population. However, to date, China has not introduced any naloxone programmes in its penitentiary system. In addition, non-medical people are not allowed to use naloxone in an overdose emergency, which creates a situation of legal insecurity.

The comparison of the three country studies shows that successful examples of administering naloxone in prison settings do exist. Despite this, naloxone is not used at a general level in any of the three countries. This shows that various legal, financial, and organisational barriers stand in the way of a broader implementation of naloxone programmes. Legal barriers include the question of whether naloxone as a substance is legal and can be used in treating an overdose emergency. Germany and Kyrgyzstan have taken the first step in creating a stable legal basis for naloxone programmes. In China, the use of naloxone is reserved for doctors, thereby reducing the possible uses of naloxone in emergencies.

The second barrier to the broader implementation of naloxone concerns financial issues. In general, health care systems must cover the costs of these interventions. In practice, there might not be sufficient financial resources to introduce naloxone programmes in the prison context, where funding is generally scarce. In addition to these legal and financial barriers, the introduction of naloxone programmes often fails due to a lack of organisational preparation. For a general scale-up, prison administrations need to introduce internal procedures. Moreover, prison staff and people using opioids in prison need to undergo training. Most importantly, however, a general level of awareness needs to be created among decision makers regarding the fact that naloxone programmes constitute an important element of harm reduction. The case studies of Germany, Kyrgyzstan, and China show that there is still a long way to go.

Bibliography

- Balster, R. L. & S. L. Walsh (2016). Ensure global access to naloxone for opioid overdose management, *Addiction*, 111(4), 589–90.
- Barnsdale, L., Graham, L., & X. Gounari (2017). National Naloxone Programme Scotland. Monitoring Report 2016/17.
- Black, E., Monds, L.A., Chan, B., Brett, J., Hutton, J. E., Acheson, L., Penm, J., Harding, S., Strumpman, D., Demirkol, A. & N. Lintzeris (2022). Overdose and take-home naloxone in emergency settings: A pilot study examining feasibility of delivering brief interventions addressing overdose prevention with 'take-home naloxone' in emergency departments, *Emergency Medicine Australasia*, 34(4), 509–518.
- Bird, S. M., McAuley, A., Perry, S. & C. Hunter (2016). Effectiveness of Scotland's National Naloxone Programme for reducing opioid-related deaths: a before (2006–10) versus after (2011–13) comparison, *Addiction*, 111(5), 883–891.
- CDC (2020). Increase in Fatal Drug Overdoses across the United States Driven by Synthetic Opioids Before and During the COVID-19 Pandemic, available at <https://emergency.cdc.gov/han/2020/han00438.asp#> (accessed 11.15.22).
- EMCDDA (2016). Preventing fatal overdoses: a systematic review of the effectiveness of take-home naloxone, EMCDDA Papers. Publications Office of the European Union, Luxembourg.
- Government of Canada (2017). available at <https://www.canada.ca/en/health-canada/services/drugs-health-products/drug-products/announcements/narcan-nasal-spray-frequently-asked-questions.html> (accessed 22 January 2023).
- Horsburgh, K. & A. McAuley (2018). Scotland's national naloxone program: The prison experience, *Drug and Alcohol Review*, 37, 454–456.
- Huang, B. M., Di, N. K., Zhang, H. et al. (2011). A study on the current situation of naloxone on-site first aid through peer organizations. *Chinese Journal of Drug Dependence*, 20(3), 204–207.
- Jamin, D., Vanderplasschen, W., Sys, O., Jauffret-Roustide, M., Michel, L., Trouiller, P., Neisa, A., Homen, M., Mendes, V. & H. Stöver (2021). My first 48 hours out”: drug users' perspectives on challenges and strategies upon release from prison, *Harm Reduction Journal*, 18(1), 32.
- Liu, Y. E., Lemos, E. F., Gonçalves, C. C. M., de Oliveira, R. D., Santos, A. da S., do Prado Morais, A. O., Croda, M. G., de Lourdes Delgado Alves, M., Croda, J., Walter, K. S. & J. R. Andrews (2021). All-cause and cause-specific mortality during and following incarceration in Brazil: A retrospective cohort study. *PLOS Medicine*, 18(9), e1003789.
- Luo, Z., Duo, L., Lin, Y. et al. (2013). Feasibility investigation on the implementation of naloxone on-site first aid by peer personnel. *Chinese Journal of Drug Dependence*, 2, 134–136.
- McDonald, R. & J. Strang (2016). Are take-home naloxone programmes effective? Systematic review utilizing application of the Bradford Hill criteria, *Addiction* 111, 1177–1187.

- Ministry of Health of the Kyrgyz Republic (n.d.). Klinicheskie Protokoly [Clinical Protocols], available at <https://www.med.kg/clinicalProtocols> (accessed 22 January 2023).
- Moustaqim-Barrette, A., Elton-Marshall, T., Leece, P., Morissette, C., Rittenbach, K., & J. Buxton (2019). Environmental Scan Naloxone Access and Distribution in Canada. <https://doi.org/10.14288/1.0379400>
- Moustaqim-Barrette, A., Dhillon, D., Ng, J. et al. (2021). Take-home naloxone programs for suspected opioid overdose in community settings: a scoping umbrella review, *BMC Public Health*, 21, 597.
- Olsen, A., McDonald, D., Lenton, S. & P.M. Dietze (2018). Assessing causality in drug policy analyses: How useful are the Bradford Hill criteria in analysing take-home naloxone programs? *Drug and Alcohol Review*, 37, 499–501.
- Republican Centre of Narcology (n.d.). Peredozirovka opiatami [Opiate overdose], available at <http://www.rcn.kg/prevention-overdoses/protocol> (accessed 22 January 2023).
- Safe Project (n.d.). State Naloxone Access Rules and Resources. Read your state's access rules and find valuable resources about naloxone, available at <https://www.safeproject.us/naloxone/awareness-project/state-rules/> (accessed 23 January 2023).
- Schäffer, D. (2020). Opioidbedingte Todesfälle in Deutschland - warum bleibt Naloxon weitgehend ungenutzt., in: 7. Alternativer Drogen- Und Suchtbericht. Pabst, Groß-Umstadt, 85–89.
- Strang, J., Darke, S., Hall, W., Farrell, M. & R. Ali (1996). Heroin overdose: the case for take-home naloxone. *BMJ*, 312, 1435–1436.
- Strang, J., McDonald, R., Campbell, G., Degenhardt, L., Nielsen, S., Ritter, A., & O. Dale (2019). Take-Home Naloxone for the Emergency Interim Management of Opioid Overdose: The Public Health Application of an Emergency Medicine, *Drugs*, 79, 1395–1418.
- Weiner, J., Murphy, S. M. & C. Behrends (2019). Expanding Access to Naloxone: A Review of Distribution Strategies, LDI/CHERISH Issue Brief, May 29, available <https://ldi.upenn.edu/our-work/research-updates/expanding-access-to-naloxone-a-review-of-distribution-strategies/> (accessed 28 October 2022).
- Zhou, Y. (2016). A survey on emergency treatment of opioid drug abusers with naloxone in some areas of Yunnan Province, <https://doi.org/10.7666/d.D01026408>
- WHO (2021). Opioid overdose, available at <https://www.who.int/news-room/fact-sheets/detail/opioid-overdose> (accessed 15 November 2022).
- WHO (n.d.). Opioid Overdose, available at <https://www.who.int/news-room/fact-sheets/detail/opioid-overdose> (accessed 28 October 2022).
- WHO and UNODC (2021). Summary Stop Overdose Safely (SOS) in Kazakhstan, Kyrgyzstan and Ukraine, available at <https://apps.who.int/iris/handle/10665/340497> (accessed 1 November 2022).

Wodarz-von Essen, H., Pogarell, O., Wolstein, J. & N. Wodarz (2021). THN Bayern Evaluation eines Schulungsprogramms für medizinische Laien zum Einsatz von nasalem Take-Home-Naloxon in Notfallsituationen bei Menschen mit Opioidabhängigkeit in Bayern (BayTHN), München: Bayerisches Staatsministerium für Gesundheit und Pflege, available at https://www.condrobs.de/wp-content/uploads/2021/09/StMGP_THN-Bayern_Bericht_DRUCK_Endversion.pdf (accessed 31 January 2023).