

Overdose Prevention – Status Quo and Challenges

Graham Shaw & Jean-Paul Grund
Stop Overdose Now (SON)



Colophon

Authors: Graham Shaw & Jean-Paul Grund, Stop Overdose Now (SON)
Review: Eberhard Schatz (C EHRN), C EHRN Overdose Prevention Expert Group
Editing: Graham Shaw

© Correlation – European Harm Reduction Network, 2019.

This publication of Correlation – European Harm Reduction Network is protected by copyright. Reproduction is authorised provided the source is acknowledged.

Recommended citation: Graham Shaw & Jean-Paul Grund (2019),
Overdose Prevention – Status Quo and Challenges
Correlation European Harm Reduction Network, Amsterdam.

Correlation – European Harm Reduction Network

c/o Foundation De REGENBOOG GROEP
Droogbak 1d
1013 GE Amsterdam
The Netherlands

www.correlation-net.org

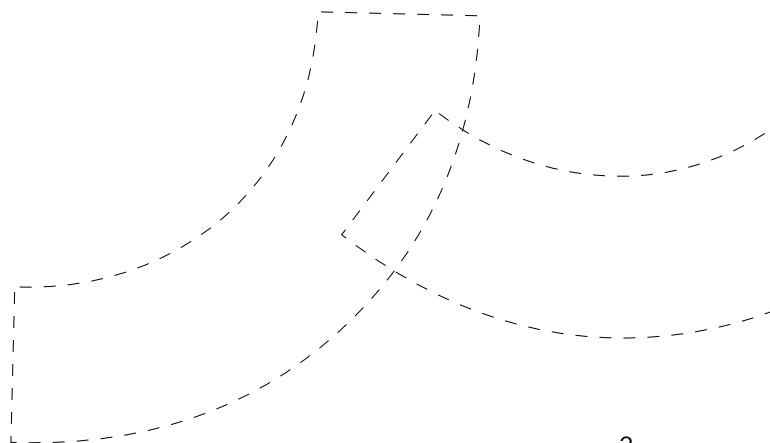


Correlation - European Harm Reduction Network is co-funded by the European Union

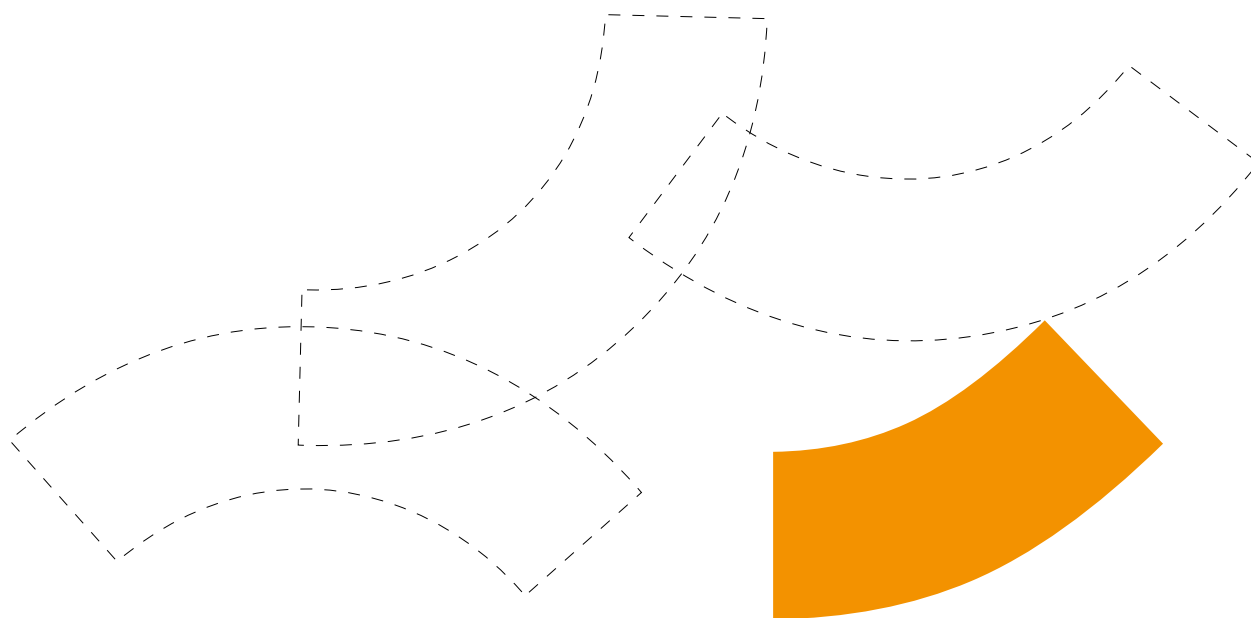
Executive summary

Fatal and non-fatal overdoses related to opiates use are on the rise in many parts of the world, with North America, Australia and Central Asia being the most affected regions. In Europe as well opioid-related overdose deaths show a continuous increase, at least since 2013. Naloxone is the centrepiece of the response to opioid overdose. This opioid antagonist medication rapidly and completely reverses the effects of opioids and thus, when timely administered, prevents opiate overdose death. Globally, about half of the countries (101 out of 196) had registered injectable naloxone by September 2017, a requirement for the drug to be legally available in the country and for licenses to be issued for the manufacture, importation and/or distribution of the drug. In Europe, by the same time, 80% of the countries (37 out of 45) had Naloxone registered by national authorities. Lack of legislation and registration can hinder Naloxone access. Policymakers and advocates can count with several guidelines to support them in drafting required policies and standard operating procedures to allow the drug's manufacture, importation and/or distribution. Another barrier to Naloxone access is the costs. Generic and domestically produced naloxone, as well as country-collaboration for bulk purchase can help addressing this. Finally, fostering Good Samaritan Laws, positive media, community education and the meaningful involvement of people who use drugs can help broadening naloxone access, as it fights stigma and discrimination.

Good practice interventions to respond to opioid overdoses include naloxone take-home programs, peer-to-peer naloxone programs, prison and treatment pre-release programmes, and broader interventions such as drug consumption rooms and safe injecting facilities, heroin assisted treatment, and drug checking services (including fentanyl test stripes). These interventions demonstrate that Naloxone and overdose prevention must move from mainly hospital and clinical settings into the hands of people in the community (street users, carers, agency staff) to improve access and timely response. Peers can be a great asset both to improve Naloxone availability and to provide training to various actors in how to administer the drug. Training prison staff and engaging prisoners who use opiates with local health services in the weeks following their release also helps preventing overdose deaths in this population.



This is the first part of our Overdose Prevention Report.
Part Two 'New technology-based Solutions'
is accessible at:
www.correlation-net.org/publications



Contents

Acknowledgements	6
Conflict of Interest Statement.....	6
Acronyms	7
1. Introduction	8
1.1. Opioids and overdose	8
1.2. Global trends in opioid overdose mortality	8
1.3. Opioid overdose in Europe	9
2. Responding to opioid overdose	11
2.1. Naloxone - the Centrepiece of the response to opioid overdose	11
2.1.1. Availability of naloxone	11
2.1.2. Access to naloxone	12
2.1.3 Barriers to naloxone access and responses	14
2.2. Recognised good practice interventions.....	21
2.2.1 Naloxone take-home programmes	21
2.2.2 Peer-to-Peer naloxone programmes	23
2.2.3 Prison and treatment pre-release programmes	23
2.2.4 Other modalities	24
3. Discussion	27
20 th Century Modi Operandi are resulting in insufficient coverage	27
4. Recommendations	28
5. References.....	30

Acknowledgements

We thank Jamie Favaro (NEXT) and Igor Kuzmenko (Harm Reduction 2.0) for fact checking the sections that describe their initiatives and our friends in Kazakhstan for providing us access to the scientific literature.

Conflict of Interest Statement

Jean-Paul Grund and Graham Shaw are both involved in the Stop Overdose Now Foundation (SON). Jean-Paul is SON's executive director and Graham is its adviser strategy & resource mobilization.



Acronyms

API	Application Programming Interface
DCR	Drug Consumption Room
FTIR	Fourier Transform Infrared Spectrometer
FTS	Fentanyl Test Strip
GIS	Geographic Information Systems
GSL	Good Samaritans Law
Fentalogues	Fentanyl and its analogs
HAT	Heroin-Assisted Treatment
HIDTA	High Intensity Drug Trafficking Areas
NAL	Naloxone Access Law
NPS	New Psychoactive Substance(s)
OD	Overdose
ODMAP	Overdose Detection Mapping Application Program
OST	Opioid Substitution Therapy
OTC	Over-The-Counter
OUD	Opioid Use Disorder
OWN	Overdose Warning Network
P2PN	Peer-to-Peer Naloxone
QALY	Quality-Adjusted Life Year
SCF	Safe Consumption Facility
SIF	Safe Injecting Facility
SITD	Italian Drug Addiction Society
SON	Stop Overdose Now
THN	Take-Home Naloxone
TONI	Texas Overdose Naloxone Initiative
UNODC	United Nations Office on Drugs and Crime
WHO	World Health Organization

1. Introduction

1.1. Opioids and overdose

Psychoactive substances made from the opium poppy are called *opiates* and include heroin and morphine. Substances made in a laboratory that mimic opiates are known as *synthetic opioids* and include fentanyl, a particularly powerful synthetic opioid that is 50-100 times more potent than morphine^{1 2} and is available as a prescription drug and made and used illegally; in hospital settings, fentanyl is often administered following surgery³. *Synthetic opioid analogues*, also known as *New Psychoactive Substances* (NPS), mimic the pharmacology of natural opiates and include, for example, carfentanyl⁴. Grouped together, all of these substances are referred to as *opioids* and are most commonly used for the relief of moderate and severe pain.

“People restarting opioid use after a period of abstinence, including after release from prison, have a heightened risk of OD linked to reduced tolerance to the drug.”

Typical characteristics of people most at risk of an opioid overdose (OD) include a history of 'substance use disorders', high prescribed dosage (over 100 mg of morphine or equivalent daily), male gender, older age, multiple prescriptions (including benzodiazepines), mental health con-

ditions and lower socio-economic status⁵. People restarting opioid use after a period of abstinence, including after release from prison, have a heightened risk of OD linked to reduced tolerance to the drug^{6 7}. Increasing risk of a fatal overdose also occurs among individuals who have experienced a number of prior non-fatal overdoses⁸.

1.2. Global trends in opioid overdose mortality

“The global incidence of fatal opioid OD is estimated at 0.65% per 100 person years with non-fatal opioid ODs several times more common.”

Of the estimated 450,000 people who died in 2015 as a result of all forms of drug use disorders⁹, 118,000 died as a result of opioid use disorders (OUD)¹⁰ with between one-third and one-half of those due to opioid OD¹¹. The global incidence of fatal opioid OD is estimated at 0.65% per 100 person years¹² with non-fatal opioid ODs several times more common¹³. In North America, fentanyl mixed into heroin and other drugs is driving the exponential increase in OD fatalities¹⁴. Opioid OD deaths in Australia have increased from 3.8 per 100,000 in 2007 to 6.6 per 100,000 in 2016 with most deaths (76%) attributable to pharmaceutical opioids¹⁵. There is also a high prevalence of *opiate* use in the past year in both Central Asia and Transcaucasia at 0.9%¹⁶. 17 of 20 (85%) countries in Asia reported opioids as the primary cause of drug-related deaths in 2016¹⁷. The non-medical use of the opioid painkiller *tramadol* is an emerging cause of

concern in countries of North, West and Central Africa as well as in the Near and Middle East^{18 19} and is also becoming more prevalent in Asia²⁰.

1.3. Opioid overdose in Europe

As shown in Figure 1, the drug-induced mortality rate per one million adults in Europe (using the most recent data available) is highest in Scotland at 213 and reported to be lowest in Romania at 2 with the European average at 23. However, the actual number of OD fatalities is likely to be much higher due to systematic under-reporting in many countries of Europe²¹.

The total number of opioid-related deaths reported by country - using the most recent year for which data is available - shown in Figure 2 - highlights that most European countries have less than 250 such fatalities per year but that England and Wales, Scotland, Germany and Sweden have considerably more, with a high of 2,208 deaths per year in England and Wales.

Figure 1
Drug-induced mortality rate among adults (aged 15-64 years) per million population in European countries⁹⁶

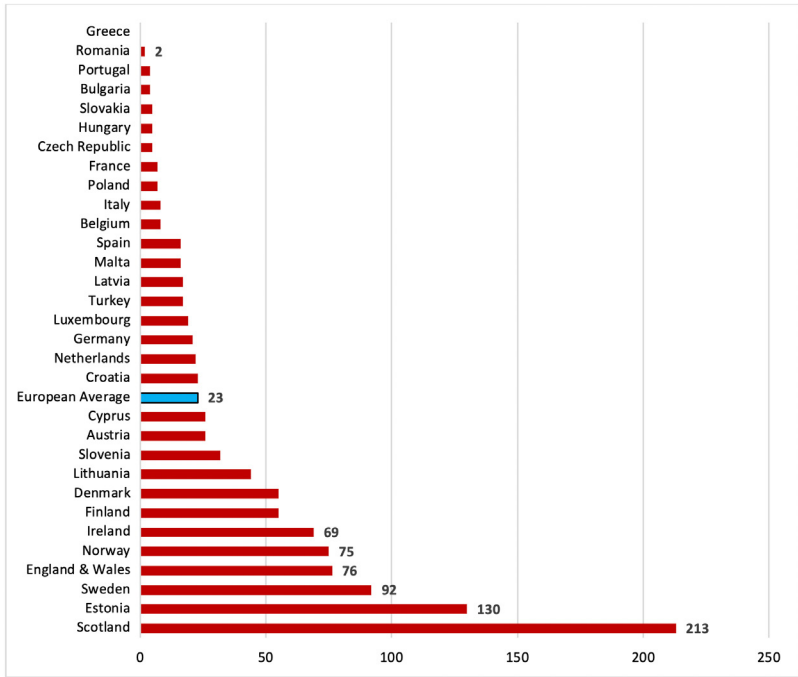
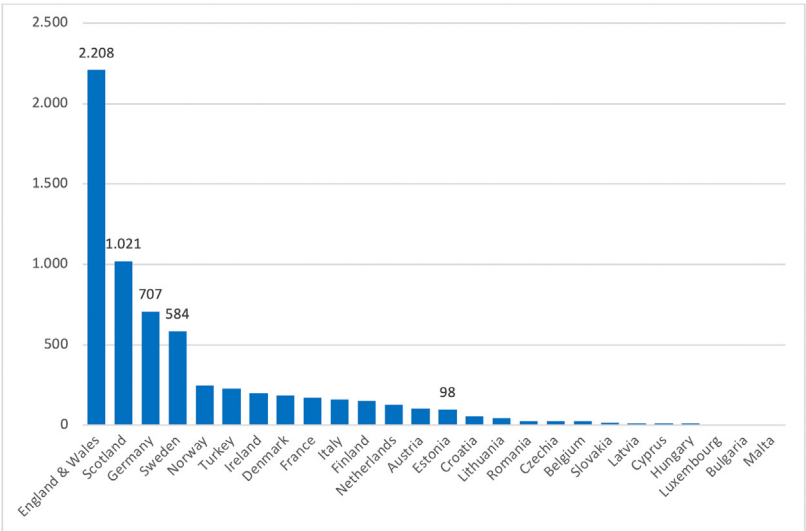


Figure 2

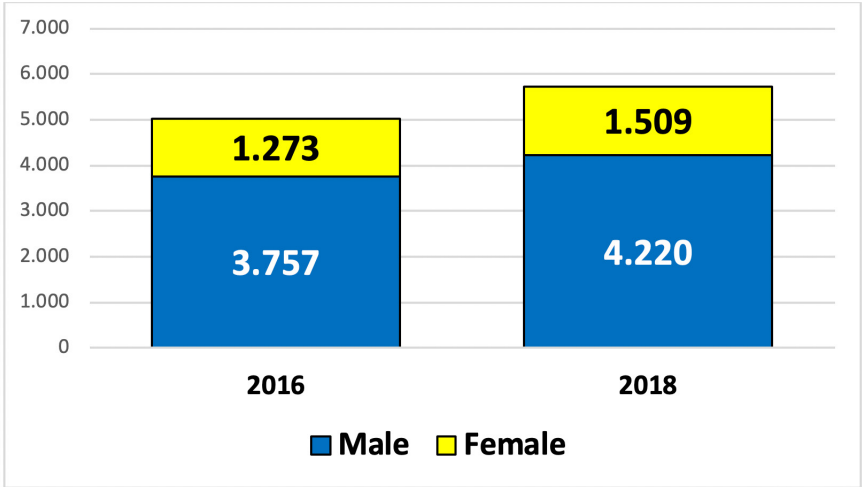
Number of opioid-related deaths confirmed by toxicology reports by country in Europe for most recent year available²²



The total number of opioid-related overdose deaths across Europe continues to increase, as shown in Figure 3, with 5,819 deaths in 2016 (22% female) rising to 6,436 in 2018 (36% female; no gender breakdown is available for Germany)²³.

Figure 3

Opioid-related deaths in Europe by gender, 2016 and 2018²⁷



2. Responding to opioid overdose

2.1. Naloxone - the Centrepiece of the response to opioid overdose

“Naloxone has virtually no effect on people who have not taken opioids and the cost of manufacturing naloxone is low. There is also no evidence that possessing naloxone leads to riskier drug use.

Opioid OD is treatable with *naloxone*, a medication (also known as an opioid antagonist) which rapidly and completely reverses the effects of opioids and prevents death, when timely administered. Effective methods of administering naloxone include intravenous, intramuscular, subcutaneous, and intranasal routes. Naloxone has virtually no effect on people who have not taken opioids²⁴ and the cost of manufacturing naloxone is low²⁵. There is also no evidence that possessing naloxone leads to riskier drug use²⁶. The World Health Organization (WHO) recommends the following specific actions concerning an opioid OD²⁷:

A. People likely to witness an opioid overdose should have access to naloxone and be instructed in its administration to enable them to use it for the emergency management of suspected opioid overdose.

- B. Naloxone is effective when delivered by intravenous, intramuscular, subcutaneous and intranasal routes of administration. Persons using naloxone should select a route of administration based on the formulation available, their skills in administration, the setting and local context.
- C. In suspected opioid overdose, first responders should focus on airway management, assisting ventilation and administering naloxone.
- D. After successful resuscitation following the administration of naloxone, the level of consciousness and breathing of the affected person should be closely observed until full recovery has been achieved.

2.1.1. Availability of naloxone

Legislation is usually required for a specific drug to be legally available in a country and for it to be registered with the duly authorised national authority, usually the Ministry of Health, from which licenses can be issued for the manufacture, importation and/or distribution of the drug. Naloxone is one of a limited number of drugs that are included in the WHO Model List of Essential Medicines²⁸.

“Globally, 101 out of 196 countries (52%) had registered naloxone for injection by September 2017.

Globally, 101 out of 196 countries (52%) had registered naloxone for injection by September 2017²⁹. Using categorisation of regions and sub-regions of the United Nations Office on Drugs and Crime (UNODC), Table 1 shows the extent of naloxone registration in Europe.

Table 1 Naloxone registration by national authorities in Europe, September 2017

UNODC Sub-Region	Number of countries ^a	Countries with naloxone registered ^b	Countries with no data available	Ratio of countries with naloxone registered
Eastern Europe ³⁰	4	4	0	100%
South-Eastern Europe ³¹	9	7	2	78%
Western and Central Europe ³²	32	26	5	81%
Total	45	37	7	82%

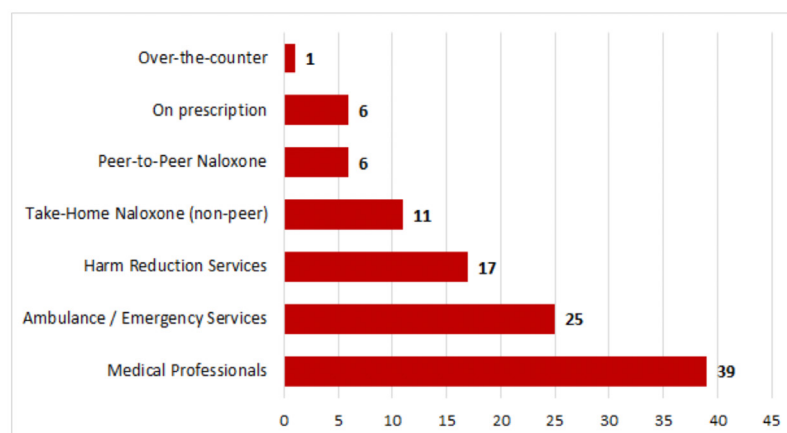
- a. United Nations Office on Drugs and Crime. World Drug Report 2018. Vienna; United Nations, June 2018, Booklet 2, Global Overview of Drug Demand and Supply: Latest trends, cross cutting issues, p60. https://www.unodc.org/wdr2018/prelaunch/WDR18_Booklet_2_GLOBAL.pdf. Accessed 28 April 2019.
- b. World Health Organization. Global Health Observatory data repository: Registration of naloxone for injection for opioid overdose: Data by country. Updated 1 September 2017. <http://apps.who.int/gho/data/node.main.RSUD510?lang=en>. Accessed 29 April 2019.

2.1.2. Access to naloxone

37 European countries have officially *registered* naloxone, according to WHO, and 39 countries have naloxone accessible by medical professionals^{33 34}. Albania, Bulgaria and Finland provide access to naloxone without the drug being formally registered.

Figure 4

Number of European countries with naloxone access by delivery mechanism³⁵



Various approaches have been piloted or rolled-out across Europe to increase access to, and administration of, naloxone as outlined in Figures 4 and 5. Traditionally, ambulance crews in many countries, as well as medical professionals at hospital accident and emergency (A&E) departments, have been authorised to administer naloxone in cases of opioid overdose. However, the time taken by ambulance crews to reach an overdose victim, or in transporting such a person to an A&E facility, often results in naloxone being administered too late to save life. Consequently, as recommended by WHO, people most at-risk of an opioid overdose, and those who are most likely to be present when an opioid overdose occurs, need to know how to call an ambulance, to then manage the airway of the overdose victim and assist with ventilation and then to administer naloxone to prevent death.

Italy is the only European country where naloxone is freely available without prescription **over-the-counter**, although few people acquire naloxone through this mechanism as it is available at a much lower cost from harm reduction service providers³⁷. Naloxone is available **on prescription** in Denmark, Germany, Ireland, the Netherlands, and the UK and it is officially available on prescription in Latvia but, in reality, it is very difficult to access³⁸. **Peer-to-Peer Naloxone (P2PN)** is an approach whereby peers delivery basic training in opioid overdose response to other opioid users most at risk of overdose and, depending on the laws governing access to naloxone, are issued with naloxone kits. Through a snowball effect over time, rapid access to naloxone can be achieved in a community. In Europe, P2PN, or its equivalent, is operational in Denmark, Italy, Norway, Portugal, Ukraine and the UK, respectively³⁹. **Take Home**

Figure 5
Availability of naloxone and other interventions in Europe³⁶



“ *Peer-to-Peer Naloxone (P2PN) is an approach whereby peers delivery basic training in opioid overdose response to other opioid users most at risk of overdose and, depending on the laws governing access to naloxone, are issued with naloxone kits.*

Naloxone (THN) is similar to P2PN but peers are not the primary trainers of how to respond to opioid overdose. THN is often provided through harm reduction services and, in most European countries, remains a pilot initiative such as in Austria, Estonia, Germany, Norway, Spain, Ukraine and the UK; THN is available as a standard programme in Denmark, France, Ireland and Italy⁴⁰. Naloxone can also be accessed **through fixed site and mobile harm reduction services**. Unlike THN, this approach does not allow individuals to be in possession of naloxone themselves, nor their close family members or partners. Countries in Europe where harm reduction service providers make naloxone available - either formally or informally - include Denmark, Estonia, France, Ireland, Italy, Lithuania, Moldova, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovenia, Spain, Ukraine and the UK.

2.1.3 Barriers to naloxone access and responses

a) Legislation and registration

A lack of national, or state, **legislation**, results in naloxone being prohibited and thereby not available on prescription or over-the-counter (OTC). However, until legislation is enacted – which can take considerable time - temporary exemptions can be negotiated with the relevant national authority to respond to an urgent need for naloxone access at the sub-national and/or community level. Pilot projects can also be used in collaboration with the relevant national, sub-national and community authorities to demonstrate the safe and cost-effective application of naloxone and thereby be used to advocate for legislative support for naloxone. In addition, key government decision-makers and legislators can be shown how legislation works in support of reducing opioid overdose deaths in other countries through study visits, including naloxone in prisons and other closed settings.

“ *A lack of national, or state, legislation, results in naloxone being prohibited and thereby not available on prescription or over-the-counter.*

When naloxone is not **registered** in a country, its importation, sale and monitoring is problematic. However, as naloxone is included in the WHO Model List of Essential Medicines⁴¹, the process of national-level registration can be speeded up considerably as safety and related issues have already been thoroughly assessed by WHO. Furthermore, in response to an urgent need, temporary arrangements can be made with the duly authorised government authority prior to formal registration of naloxone.

“ *Legal restrictions on who can possess and/or administer naloxone can limit access to the medication by those who need it most, including people in prison and other closed settings.* ”

Legal restrictions on who can possess and/or administer naloxone can limit access to the medication by those who need it most, including people in prison and other closed settings. Various countries, however, allow third-party possession of naloxone, such as family and friends of people most at-risk of an opioid overdose. In addition, collaboration between legally authorised dispensers of naloxone, such as doctors and pharmacists, and harm reduction service providers have been successfully implemented in various countries including Australia, Denmark, Germany, Myanmar, Norway, Spain and the UK.

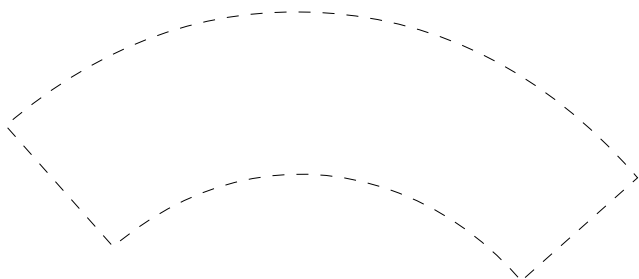
b) Cost

Naloxone is unaffordable for many people most at-risk of an opioid OD but cost varies depending on where you live and other factors such as the availability of medical insurance.

For example, in the USA, generic naloxone in a vial for injection costs around US\$40⁴², in Australia it costs from US\$35 to US\$56 without a prescription⁴³ but in Italy it can be bought for US\$2.35 to US\$3.80⁴⁴. In the UK, a naloxone kit with a pre-filled syringe costs from US\$22 to US\$28^{45 46}.

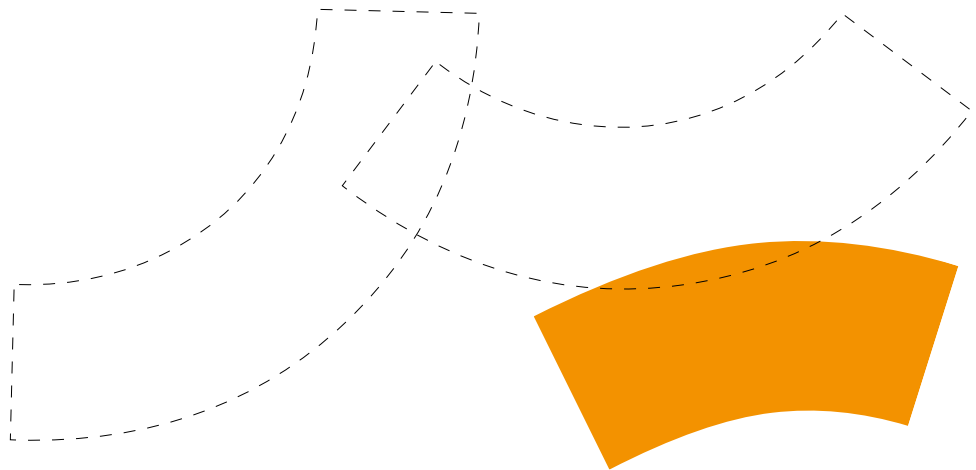
“ *Naloxone is unaffordable for many people most at-risk of an opioid OD but cost varies depending on where you live and other factors such as the availability of medical insurance.* ”

Narcan, a naloxone nasal spray, costs about US\$125 for two doses in the USA⁴⁷ whilst in Australia it retails for between US\$53 and US\$60 without a prescription; opioid dependent people able to get a prescription pay a flat rate of US\$28 in Australia for the medication and for those with a health concession it can be acquired for as little as US\$4.50⁴⁸. A review of naloxone prescribing across the USA between 2011 and 2018, cost remained a major factor prohibiting the wide distribution of the life-saving medication⁴⁹.



There are various opportunities to reduce the cost of naloxone that can include one or more of the following:

- An appropriate government authority can permit the importation of generic forms of naloxone from international manufacturers that have received approval from recognised regulators, such as the USA's FDA or other relevant agencies⁵⁰;
- In collaboration with the designated national authority as well as NGOs and community-based organisations and peer groups working with affected communities, work with a domestic company to enter into a contract with an international naloxone manufacturer to domestically produce less costly versions of patented naloxone in exchange for reasonable royalties⁵¹;
- Incentives can be offered to companies to obtain approval to market generic versions of naloxone by prioritising more timely approval and waiving application user fees⁵²;
- Bulk purchase of naloxone by a central agency for distribution within a country; this may also allow for special discounts and donations from manufacturer(s); this approach has already proven effective in reducing the cost of purchasing vaccines, for example⁵³; and,
- For countries that are part of a regional grouping, such as the EU or the Association of South-East Asian Nations (ASEAN), collaboration between multiple countries for the bulk purchase of naloxone might be possible to reduce cost.



For (drug using) individuals, cheaper types of naloxone administration can be considered with a vial of naloxone administered with a needle/syringe usually being cheaper to purchase than a nasal spray or an auto-injector (see 3.5.5). If an at-risk individual has medical insurance, checks

“ *In some countries, national, sub-national and/or community public health programmes may cover the cost of naloxone, making it free to the individual.*

should be undertaken to see if it covers the cost of naloxone. In some countries, national, sub-national and/or community public health programmes may cover the cost of naloxone, making it free to the individual. Finally, The Harm reduction Coalition and many THN programs in the US have negotiated significantly lower prices with pharmaceutical companies for distribution to PWUD by THN programs.

c) Policies, guidelines and procedures

Barrier to naloxone access can be caused through the limited **human and financial resources** available to develop national policy and related guidelines and standard operating procedures (SOPs) for opioid overdose and responses. Many countries have heavy punishments for drug use and severely restrict the rights of people who use drugs, including access to health services, with **evidence-based approaches ignored**. In addition, the often complex and bureaucratic systems in many countries make the development of such policies, guidelines and SOPs problematic, resulting in long delays and further overdose mortality.

In response, government decision-makers should be mindful of the 2016 UN General Assembly Special Session on the World Drug Problem which recommends each member state to,

“ *Promote the inclusion in national drug policies, in accordance with national legislation and as appropriate, of elements for the prevention and treatment of drug overdose, in particular opioid overdose, including the use of opioid receptor antagonists such as naloxone to reduce drug-related mortality*”⁵⁴

Governments can also request technical assistance from WHO and other international institutions and donors to support them in drafting required policies, guidelines and SOPs using international good practice templates. Advocacy with decision-makers – especially by people and communities most affected by the lack of access to naloxone, including people using opioids themselves - can be undertaken to adopt, fund and implement evidence-based policies for people who use drugs and to strengthen capacity and funding of peer-led community-based interventions to facilitate widespread access to naloxone, including for people in prison and upon release.

Many materials that are available online and follow WHO recommendations can be used to implement simple approaches for community-based responses to opioid overdose, as can reaching out to existing naloxone service provid-

ers in other countries for advice and guidance. Key decision-makers can see how good practice naloxone programmes are implemented in the community and in prisons and other closed settings through study visits.

d) Stigma and discrimination

The lack of public awareness of the safe use and lifesaving effect of naloxone, and societal stigmatisation and discrimination of people who use drugs, may often result in the unwillingness of members of the public to respond to an opioid-related overdose event.

“*Such stigma and discrimination arise through fear of people engaged in what is deemed by the government and its institutions, as well as by the mainstream media, as an illegal and dangerous activity.*”

Such stigma and discrimination arise through fear of people engaged in what is deemed by the government and its institutions, as well as by the mainstream media, as an illegal and dangerous activity. Consequently, people who use drugs are widely considered by the public to be unworthy of assistance. Some individuals may also have had bad experiences with individuals thought to use drugs. Furthermore, bystanders to a drug overdose may fear the legal repercussions of helping a person viewed by the law as a criminal or in administering a drug to that person, including naloxone.

“*An increasing number of countries - including many, but not all, States of the USA, Germany, Luxembourg, the Netherlands and the UK - now have a Good Samaritan Law (GSL) which absolves a person in the event of administering naloxone to save somebody's life.*”

An increasing number of countries - including many, but not all, States of the USA⁵⁵, Germany, Luxembourg, the Netherlands and the UK⁵⁶ - now have a Good Samaritan Law (GSL) which absolves a person in the event of administering naloxone to save somebody's life; in some US States, however, the GSL has faced challenges in its use. Information campaigns through traditional and online media can be used to inform the general public about naloxone and its use⁵⁷. Reporters or online influencers can be encouraged and/or sponsored to produce news items, feature articles and programmes on opioid-related risks; the increased dependence on prescription opioids; increasing prevalence of illicit fentanyl and its analogues; and the resulting rapid increase in deaths from opioid overdose and, consequently, the need for easy access to naloxone in the community. Furthermore, the competencies of drug users and their networks need to be recognised, legitimised and valued and for incentives to be provided to peer support approaches in the community.

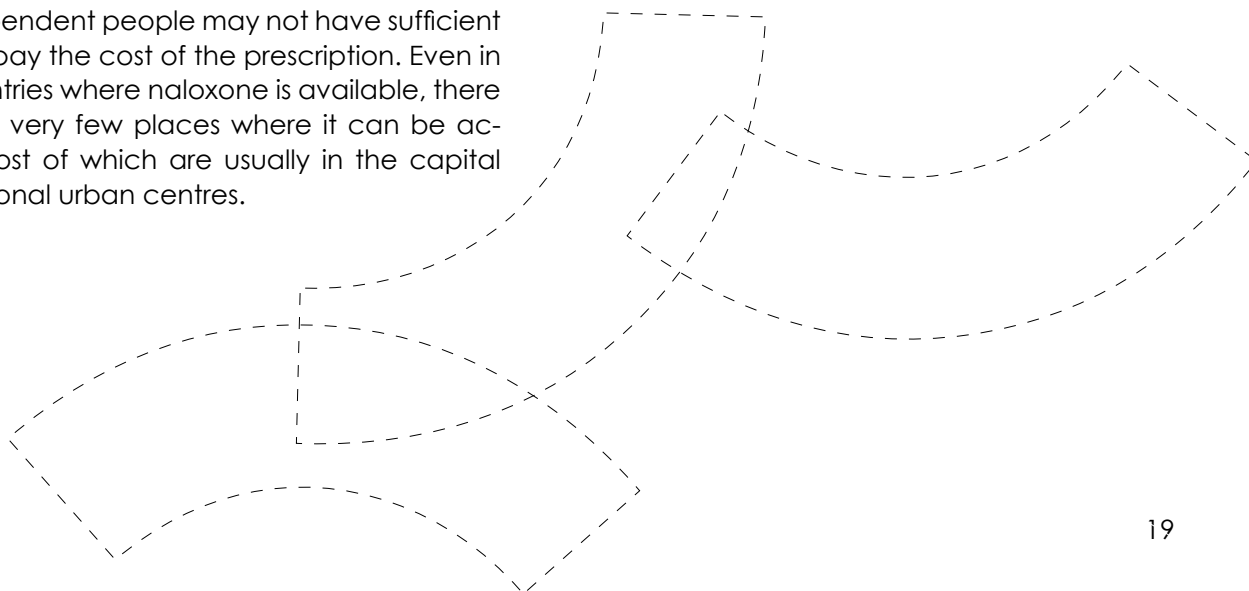
People who use drugs should also be encouraged, and supported, to use existing procedures – if available – to submit a formal complaint to rel-

evant government authorities / institutions if they are unable to access required treatment / medication, such as naloxone; this approach has been used in St. Petersburg and Moscow, Russia, with regards to HIV treatment. If existing complaint procedures are unproductive, and if funding is available, people who use drugs may wish to consider legal action against the relevant government authority / institution for failing to provide life-saving medication recommended by WHO and others.

“Even in those countries where naloxone is available, there are usually very few places where it can be accessed, most of which are usually in the capital city or regional urban centres.

e) Distribution and access to naloxone

Access to naloxone is most often available to medical professionals who can use it under strict control. Often such use is confined to hospital settings, such as the accident and emergency department, or by medical staff treating people with OUDs; in some countries, this includes ambulance staff who are trained to administer the drug but may fail to save the life of the overdose victim due to response time to reach the incident site. In some countries, naloxone is available by prescription but the process of obtaining such a prescription may be arduous, particularly for opioid dependent people who may find the administration onerous; also, this approach is not suitable for an emergency response in the community and many opioid dependent people may not have sufficient money to pay the cost of the prescription. Even in those countries where naloxone is available, there are usually very few places where it can be accessed, most of which are usually in the capital city or regional urban centres.



In response to such barriers, various countries have adopted one, or more, of the following approaches:

- A *Naloxone Access Law* (NAL), such as in 46 states of the USA, that allows members of the public not associated with a person experiencing an opioid overdose to administer and distribute naloxone without fear of legal repercussions⁵⁸;
- The so-called *Good Samaritans Law* (GSL), as mentioned above, allows anybody who seeks medical assistance for someone experiencing a drug-related overdose to be free from charges or prosecution for possession of a controlled substance, such as in Ireland⁵⁹;
- Making naloxone available at *opioid substitution therapy* (OST) dispensing sites;
- Making naloxone available through *harm reduction service providers*, especially *needle/syringe programmes* and related agencies, such as homeless services;
- Making naloxone easily accessible in *custodial facilities*, including remand and youth justice centres as well as traditional prisons and other closed settings;
- Making legal provision for naloxone to be purchased over *the counter* (OTC) without a prescription, such as in Italy;
- Encourage, and incentivize, the *availability of naloxone at multiple public and private locations*, such as train/bus stops, libraries, supermarkets, general stores, bars/pubs/clubs, in taxi cabs, etc.; and,
- Make *device-based opioid overdose education* software widely available and targeted to both people at risk as well as their family and friends⁶⁰.

2.2. Recognised good practice interventions

2.2.1 Naloxone take-home programmes

For responses to opioid overdoses to be most effective, people in the community need to be in possession of naloxone and know how to administer naloxone without having any formal medical training. Consequently, naloxone has had to move from mainly hospital and clinical settings into the hands of people in the community, including:

- **People who use opioids**, especially those who inject the drug, because they are the individuals most likely to have an overdose and are also likely to be most willing to intervene to assist someone experiencing an overdose. Such people include former opioid users upon release from prison or when released from in-patient detoxification/rehabilitation services/facilities; individuals in OST (those initiating the treatment in particular); individuals registered for drug use treatment in the first 4 weeks after hospital discharge; and prescription opioid users, such as chronic pain patients. However, it is believed that most opioid users have no connection with treatment programmes⁶¹. Therefore, more innovative approaches are constantly being devised to make naloxone more easily accessible in the community.
- **Carers**, who have regular close contact with opioid users, including family members, partners and peers.
- **Agency staff** that interact with people who use opioids, including those working at hostels, homeless shelters, needle/syringe programs and outreach workers. Other staff can include first responders such as ambulance, fire, police and other staff of law enforcement and criminal justice services⁶².

The Chicago Recovery Alliance in the USA first developed this *Take-Home Naloxone* (THN) approach in 1996 and similar programmes have been implemented in the USA and across the world since the late 1990's. Various Euro-

pean countries have THN programmes including Denmark, Estonia, France, Germany, Ireland, Italy, Lithuania, Norway, Spain, Ukraine and the UK^{63 64}. There is significant evidence that THN is effective in reducing the number of fatalities caused by opioid overdoses⁶⁵ and a range of studies have shown that THN is an effective approach when basic training is provided to those who are likely to witness a suspected opioid OD^{66 67 68} and are cost-effective⁶⁹.

“ There is significant evidence that THN is effective in reducing the number of fatalities caused by opioid overdoses and a range of studies have shown that THN is an effective approach when basic training is provided to those who are likely to witness a suspected opioid OD and are cost-effective.

Legal issues exist in some countries where possession or use of naloxone without authorisation can be considered an offence. In addition, first responders could be held liable for injury or death of a person experiencing an opioid overdose. However, the principle of duty to rescue those in need to avoid greater harm provides protection for first responders to opioid overdoses in some countries, especially in Europe, and a similar approach in many States of the USA with a Good Samaritan Law that frees bystanders from legal liability for acting to save a person's life. Some jurisdictions, such as Germany, consider it a criminal violation

if a person does NOT assist a person having a suspected opioid overdose⁷⁰. In the UK, peers can become volunteers of local government drug-related services to legally administer naloxone in the community.

2.2.2 Peer-to-Peer naloxone programmes

Peer-to-peer naloxone (P2PN) is an approach that focuses on the role played by peers to saturate high prevalence of opioid using communities with naloxone so that the medication is rapidly accessible to an individual experiencing an opioid overdose.

Access to naloxone is assessed through peer-led mystery shopper activities and peer focus groups to determine the level of naloxone knowledge. Professional partners involved in the planning and provision of services for opioid users join peers to develop strategies to overcome barriers to naloxone access, particularly legal and regulatory constraints. For example, in the UK, peers are engaged by official drug user service organisations as volunteers or paid staff, an approach developed in collaboration with the UK chapter of EuroNPUD⁷¹.

“ P2PN provides an effective, affordable, and efficient method of putting naloxone into the hands of those most likely to be present when a drug user overdoses on opioids.

Consequently, peer educators are registered with local drug services, thereby allowing them to provide training and/or brief interventions usually lasting around one hour, following which a professional dispenser (such as a doctor or authorised pharmacist or nurse) joins to dispense naloxone kits to graduates of the training course. As a result, P2PN provides an effective, affordable, and efficient method of putting naloxone into the hands of those most likely to be present when a drug user overdoses on opioids and ensures that enough naloxone is available in the drug using community to achieve the coverage levels required to deliver consistent opioid overdose reversals.

At a time when funding of health interventions is limited, it is of note that a separate assessment of the cost-effectiveness of distributing THN in the UK found it decreased overdose fatalities by around 6.6% at an incremental cost per quality-adjusted life year (QALY) gained of £899 (around €990).

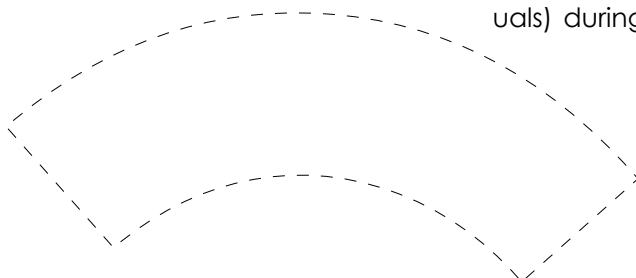
Such training can be delivered at a range of sites, such as at recovery, offender, youth and community centres, at cafes and in the home of peers. The peer educator keeps a record of those peers trained and records the dispensing of naloxone kits. This P2PN approach can take various forms and has already been successful in Glasgow, Scotland, and in Canberra, Australia, where it forms part of a comprehensive harm reduction programme run by a drug user group, as well as an extension to a local needle/syringe programme in Myanmar.

2.2.3 Prison and treatment pre-release programmes

In 2011, Scotland established a national naloxone programme (NNP) following the transfer of responsibility for healthcare in prison from the Scottish Prison Service to the National Health Service (NHS)⁷². A group of experts from all stakeholders formed the National Naloxone Advisory Group to provide advice and guidance to the NNP⁷³. A key component of the strategy is to engage prisoners who have a higher risk of opioid overdose in the weeks following their release. This approach includes the training of prison nursing staff in the use of naloxone in prison and the training of peers as well as making naloxone kits widely available together with awareness and information materials⁷⁴. Crucially, a systematic approach is using linking the release of a person from prison and their initial reintegration at the community level through collaboration between prison staff and the local health authority⁷⁵.

“Crucially, a systematic approach is using linking the release of a person from prison and their initial reintegration at the community level through collaboration between prison staff and the local health authority

As a result of the NNP, the number and ratio of opioid related deaths within 4 weeks following release from prison has steadily reduced from 10% (193 individuals) during 2006-10 to 6% (76 individuals) during 2011-13 to 4% (60 individuals) during



2014-16⁷⁶. As the programme has been embedded into the NHS, sustained funding is available to continue programme implementation.

2.2.4 Other modalities

a) Drug Consumption Rooms / Safe Injecting Facilities

To reduce the high risk of disease and overdose death associated with injecting or inhaling drugs by marginalised drug users, supervised *drug consumption rooms* (DCRs) - also known as *safe*

“No DCR's appear to be operating in low- and middle-income countries despite the disproportionate burden of harm to public health linked to drug use in such countries.

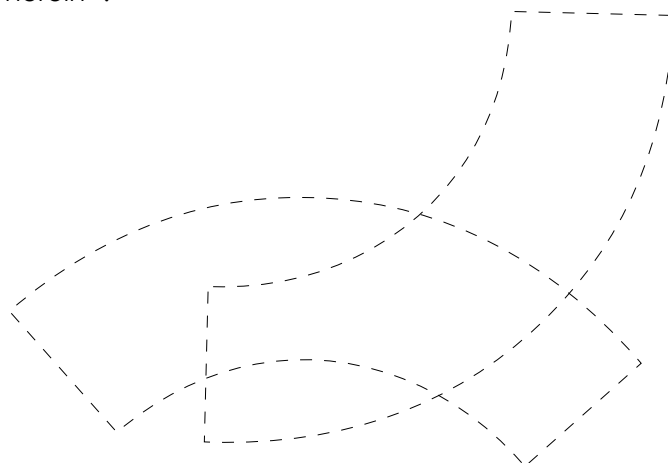
injecting facilities (SIFs) or *safe consumption facilities* (SCFs) - currently operate in 15 countries worldwide⁷⁷; however, no DCR's appear to be operating in low- and middle-income countries despite the disproportionate burden of harm to public health linked to drug use in such countries⁷⁸. DCR's also link PWID with a network of health and social services, either provided within the DCR or through referral to external agencies. In so doing, DCRs reduce public drug use and associated nuisance which is often of considerable public concern. Studies suggest that DCRs are associated with lower overdose mortality. In the case of the first DCR in North America, located in Vancouver, Canada, data shows that 88 fewer overdose

deaths occurred per 100,000 person-years compared with other areas of the city where no DCR existed⁷⁹.

Services most often available at DCRs - and provided free of charge to drug users - include emergency overdose response; first aid, especially for injection-related injuries; assessment and referral to primary health care; counselling to reduce harms; exchange of used needles, syringes and other drug paraphernalia; distribution of condoms; and support referral to people who use drugs (PWUD) seeking drug detoxification and treatment for drug dependence⁸⁰.

b) Heroin-Assisted Treatment

Heroin-assisted treatment (HAT) involves the administration of injectable pharmacological heroin each day by a doctor under strict controls in a clinical setting. Recipients of HAT are usually long-term heroin users who have attempted other detoxification and treatment programmes, including OST (methadone or buprenorphine), without success⁸¹. Once stabilised, participants in HAT begin to reduce their daily dose of heroin. Over a period of around 3 years in HAT, individuals reengage in meaningful aspects of life, with only 15% still taking heroin⁸².



HAT is available at an estimated 58 facilities in 8 countries⁸³, mainly in Europe, including Belgium, Denmark, Germany, the Netherlands, Spain and Switzerland as well as Canada, although implementation of HAT in some countries continues as pilot/demonstration projects or randomised controlled trials; HAT programmes are also planned in Scotland (mid-2019) and Norway (2020). Research since the late 1990's has shown that the main effects of HAT include:

- High rates of retention in the programme;
- Illegal use of heroin (from the street) fell considerably, by up to 70% in some cases;
- Evidence suggests a significant drop in illegal activities by participants;
- The amount of money spent each month on illegal drugs dropped; and,
- Significant improvement in the medical and health status of participants^{84 85}.

Studies also show, though, that there is a greater risk of serious adverse events from HAT than in methadone substitution programmes⁸⁶ and that the initial costs of HAT are higher than for methadone, although such costs are more than offset by savings in the criminal justice and health sectors⁸⁷.

c) Drug Checking

The ability to rapidly and cheaply analyse the contents of a drug to ascertain its potential dangers if consumed has become a reality in recent years. Drug checking services existed in 11 European countries as of late 2017, including Austria,

Germany, the Netherlands, Spain and Switzerland, using a range of different approaches to drug analysis.

Drug checking services often operate within a particular area or venue, including festivals and night-clubs, such as *Check It* in Austria, *Safer Dance* in Switzerland, and *Check !n* in Portugal⁸⁸. This provides an opportunity to deliver brief interventions – such as safe opioid use and how to respond if you witness a suspected opioid overdose – to people who do not usually engage with drug user services because they do not see their drug use as problematic⁸⁹. Other approaches, such as the small-scale *DanceSafe* project in the USA, provide drug analysis results online.

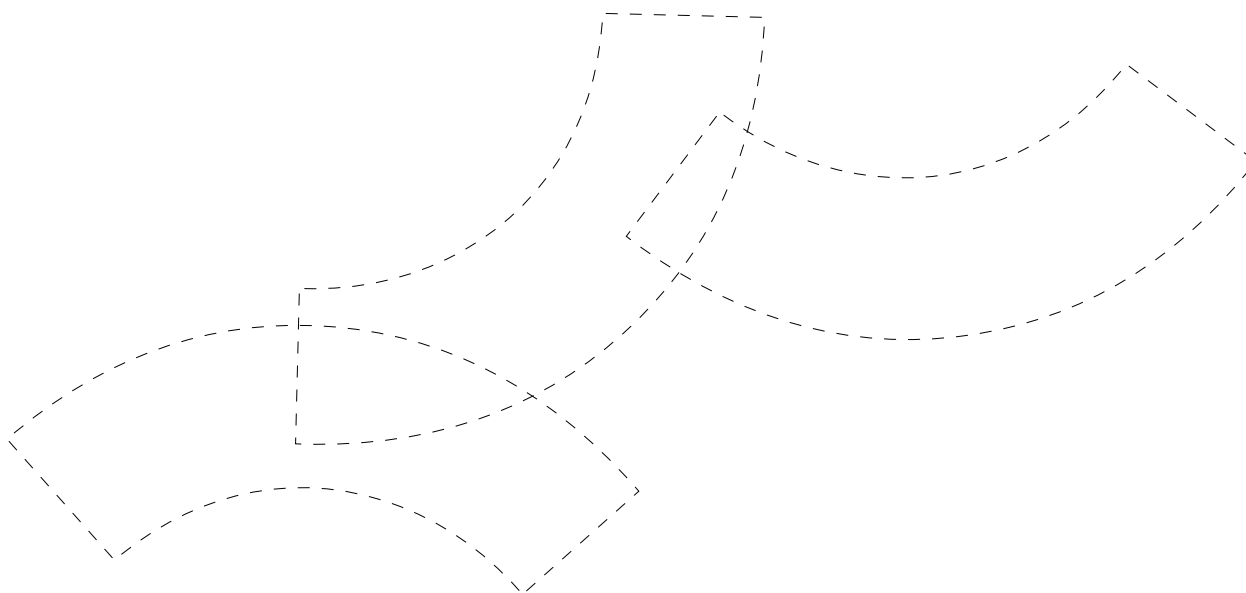
“That the identification of drugs that contain unwanted, or unknown, chemicals provides an early warning system that allows for an early public health response.

The justification given for providing legal exemption from drug control legislation is that the identification of drugs that contain unwanted, or unknown, chemicals provides an early warning system that allows for an early public health response. Drug checking also helps avoid overdose by giving information to users on potency and thereby reduces harm. For example, in Vancouver, Canada, a pilot initiative in 2017 involved dipping a test strip into a drug sample diluted with a few drops of water that then revealed a positive or negative result for the presence of a fentanyl analogue within seconds. The Vancouver Coastal

Health authority found that people who found fentanyl in their drugs were 10 times more likely to reduce their dose and were thereby 25% less likely to overdose⁹⁰.

Critics argue that some drug checking approaches are unreliable and provide inaccurate results that give a false sense of security to the user. It is also suggested that drug users will take a specific drug regardless of the results of a drug check and that it makes drug taking a normal an acceptable behaviour and thereby potentially undermines drug use prevention efforts⁹¹. However, initial studies have found that drug use behaviours and perceptions of overdose safety do change following test results, such as the use of fentanyl test strips (FTS) in the USA⁹² and the UK⁹³, although further assessment is suggested⁹⁴.

Due to the need for knowledge of chemistry and spectral databases to test NPS, such as fentanyl and its analogues, coordination is required between drug checking, academic and forensic services to maximise the outcomes for reducing harm to individuals. The use of more than one drug at the same time – polydrug use – complicates potential harm to the individual due to interactions between drugs which may be unpredictable⁹⁵.



3. Discussion

20th Century Modi Operandi are resulting in insufficient coverage

Whilst some progress has been made in recent years in expanding the availability of, and access to, naloxone in some European countries through the introduction of new approaches, some of which include the very people most at risk of an opioid overdose, coverage remains dangerously low.

“A step-change is required in the approach taken by legislators, regulatory authorities and manufacturers to make naloxone readily available and at low cost.

A step-change is required in the approach taken by legislators, regulatory authorities and manufacturers to make naloxone readily available and at low cost. This is particularly important given the ever-increasing presence of NPS and Fentalogues across the continent with the potential to cause an exponential increase in opioid-related overdose deaths as has been experienced in the USA and Canada. As more innovative approaches are introduced through the rescheduling of naloxone, people who use opioids, and especially those at most risk of an overdose, can become the drivers in saturating communities with naloxone availability, as demonstrated by existing peer-to-peer models of training and community response.

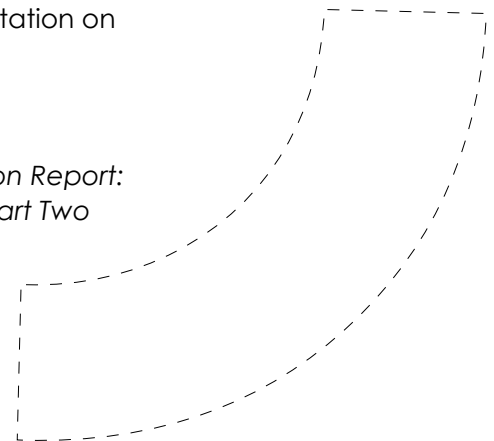
4. Recommendations

As people who use opioid drugs are both those most at risk of overdose and the most important actors in preventing overdose, all stakeholders in overdose prevention should work collectively towards a coordinated community based and peer driven response to this public health treat.

- European Union and national legislative and regulatory authorities should ensure that naloxone becomes readily available to those most at risk of overdose at low cost. Likewise, abolishing legal barriers against lay application of naloxone and the implementation of (EU model) Good Samaritan Laws should be prioritized.
- Overdose prevention and harm reduction programs, as well as organizations of people who use drugs should actively participate in the development of harm reduction technology. This includes the development of materials and trainings in support of its implementation, but also organizing and securing a sustained community based response, making full use of the available technology. Ultimately, this will involve a critical re-evaluation of current MOs and staff roles in harm reduction service delivery and community organizing.
- The EU, member states and other funding bodies should actively support the development of tech-fuelled community based responses to overdose and invest in the technology in particular, e.g. through dedicated funding calls or competitions.

Stakeholders at every level are recommended to act without hesitation on the above to avoid repeating the experience in North America.

Recommendations apply for both parts of our Overdose Prevention Report: Part One 'Overdose Prevention - Challenges and Solutions' and Part Two 'New technology-based Solutions' both accessible at: www.correlation-net.org/publications



5. References

1. Volpe DA, Tobin GAM, Mellon RD, et al. Uniform assessment and ranking of opioid Mu receptor binding constants for selected opioid drugs. *Regul Toxicol Pharmacol*. 2011;59(3):385-390. doi:10.1016/j.yrtph.2010.12.007.
2. Higashikawa Y, Suzuki S. Studies on 1-(2-phenethyl)-4-(N-propionylanilino)piperidine (fentanyl) and its related compounds. VI. Structure-analgesic activity relationship for fentanyl, methyl-substituted fentanyls and other analogues. *Forensic Toxicol*. 2008;26(1):1-5. doi:10.1007/s11419-007-0039-1.
3. National Institute on Drug Abuse (NIDA). Fentanyl. USA; February 2019. <https://www.drugabuse.gov/publications/drugfacts/fentanyl>
4. Schueler HE. Emerging Synthetic Fentanyl Analogs. *Acad Forensic Pathol*. 2017 7(1): 36-40, doi:10.23907/2017.004
5. World Health Organization. Information sheet on opioid overdose. Geneva; WHO, August 2018. https://www.who.int/substance_abuse/information-sheet/en/
6. World Health Organization. Preventing overdose deaths in the criminal-justice system. Copenhagen, Denmark; WHO Regional Office for Europe, updated reprint 2014. http://www.euro.who.int/__data/assets/pdf_file/0020/114914/Preventing-overdose-deaths-in-the-criminal-justice-system.pdf
7. Strang J, McCambridge J, Best D, Beswick T, Bearn J, et al. Loss of tolerance and overdose mortality after inpatient opiate detoxification: follow up study. *BMJ*. 2003 May 3;326(7396):959-60. doi: <https://doi.org/10.1136/bmj.326.7396.959>.
8. Caudarella A, Dong H, Milloy MJ, Kerr T, Wood E, Hayashi K. Non-fatal overdose as a risk factor for subsequent fatal overdose among people who inject drugs. *Drug Alcohol Depend*. 2016 May 1;162:51-5. doi: 10.1016/j.drugalcdep.2016.02.024
9. United Nations Office on Drugs and Crime (UNODC). World Drug Report 2018. Vienna; United Nations, June 2018, Booklet 2, Global Overview of Drug Demand and Supply: Latest trends, cross cutting issues. https://www.unodc.org/wdr2018/prelaunch/WDR18_Booklet_2_GLOBAL.pdf
10. World Health Organization. Information sheet on opioid overdose. Geneva; WHO, August 2018. https://www.who.int/substance_abuse/information-sheet/en/
11. World Health Organization. Information sheet on opioid overdose. Geneva; WHO, August 2018. https://www.who.int/substance_abuse/information-sheet/en/
12. UNODC, WHO. Opioid overdose: preventing and reducing opioid overdose mortality, Discussion Paper. Vienna; United Nations Office of Drugs and Crime, World Health Organization, 2013. https://www.who.int/substance_abuse/publications/opioid_overdose.pdf
13. Darke S, Mattick R, Degenhardt L. The ratio of non-fatal to fatal overdose. *Addiction*. 2003;98:1169–1170, in, UNODC, WHO. Opioid overdose: preventing and reducing opioid overdose mortality, Discussion Paper. Vienna; United Nations Office of Drugs and Crime, World Health Organization, 2013. https://www.who.int/substance_abuse/publications/opioid_overdose.pdf. Accessed 30 April 2019.
14. World Health Organization, United Nations Office on Drugs and Crime. Fifth WHO–UNODC Expert Consultation on New Psychoactive Substances Addressing the challenges of non-medical use of opioids, Meeting Report. Geneva; WHO, September 2018. <https://www.unodc.org/pdf/opi->

- oids-crisis/Meeting_Report_24-25_September_2018_Fifth_WHO_UNODC_Expert_Consultation_on_New_Psychoactive_Substances_Addressing_the_challenges_of_non-medical_use_of_opioids.pdf. Accessed 29 April 2019.
15. Roxburgh A, Dobbins T, Degenhardt L, Peacock A. Opioid-, amphetamine-, and cocaine-induced deaths in Australia: August 2018. Sydney, Australia; National Drug and Alcohol Research Centre (NDARC), UNSW. https://ndarc.med.unsw.edu.au/sites/default/files/newsevents/events/Drug%20Induced%20Deaths_August%202018_Drug%20Trends%20Bulletin.pdf. Accessed 30 April 2019.
16. United Nations Office on Drugs and Crime (UNODC). World Drug Report 2018. Vienna; United Nations, June 2018, Booklet 2, Global Overview of Drug Demand and Supply: Latest trends, cross cutting issues, p12. https://www.unodc.org/wdr2018/prelaunch/WDR18_Booklet_2_GLOBAL.pdf. Accessed 28 April 2019.
17. United Nations Office on Drugs and Crime (UNODC). Statistics and data: Drug-related deaths and mortality rates in Asia. Vienna; UNODC. <https://dataunodc.un.org/drugs/mortality/asia>. Accessed 1 May 2019.
18. World Health Organization, United Nations Office on Drugs and Crime. Fifth WHO–UNODC Expert Consultation on New Psychoactive Substances Addressing the challenges of non-medical use of opioids, Meeting Report. Geneva; WHO, September 2018. https://www.unodc.org/pdf/opioids-crisis/Meeting_Report_24-25_September_2018_Fifth_WHO_UNODC_Expert_Consultation_on_New_Psychoactive_Substances_Addressing_the_challenges_of_non-medical_use_of_opioids.pdf. Accessed 29 April 2019.
19. Tecimer N. The Dangerous Opioid from India. In, New Perspectives in Foreign Policy, Issue 15, Spring 2018, Center for Strategic and International Studies (CSIS), p48-53, https://csis-prod.s3.amazonaws.com/s3fs-public/180323_opioid_india_tecimer.pdf. Accessed 1 May 2019.
20. United Nations Office on Drugs and Crime (UNODC). World Drug Report 2018. Vienna; United Nations, June 2018, Booklet 2, Global Overview of Drug Demand and Supply: Latest trends, cross cutting issues, p6. https://www.unodc.org/wdr2018/prelaunch/WDR18_Booklet_2_GLOBAL.pdf. Accessed 28 April 2019.
21. European Monitoring Centre for Drugs and Drug Addiction. European Drug Report 2019: Trends and Developments. Luxembourg; Publications Office of the European Union, 2019, Table A6. ; http://www.emcdda.europa.eu/system/files/publications/11364/20191724_TDAT19001ENN_PDF.pdf National Records of Scotland. Drug-related deaths in Scotland in 2018. Edinburgh; National Records of Scotland, 16 July 2019. <https://www.nrscotland.gov.uk/files//statistics/drug-related-deaths/2018/drug-related-deaths-18-pub.pdf>; Office for National Statistics. Deaths related to drug poisoning in England and Wales: 2018 registrations. 15 August 2019. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsrelatedtodrugpoisoninginenglandandwales/2018registrations/pdf>
22. European Drug Report 2019, Op.cit.; National Records of Scotland, 2018, Op.cit.; Office for National Statistics, 2018, Op.cit.
23. European Drug Report 2019, Op.cit.; National Records of Scotland, 2018, Op.cit.; Office for National Statistics, 2018, Op.cit.
24. World Health Organization. Information sheet on opioid overdose. Geneva; WHO, August 2018. https://www.who.int/substance_abuse/information-sheet/en/. Accessed 30 April 2019.
25. World Health Organization. Community management of opioid overdose. Geneva; WHO, 2014. https://apps.who.int/iris/bitstream/handle/10665/137462/9789241548816_eng.pdf; see also, World Health Organization. Information sheet on opioid overdose. Geneva; WHO, August 2018. https://www.who.int/substance_abuse/information-sheet/en/. Accessed 30 April 2019.
26. Jones JD, Campbell A, Metz VE, Comer SD. No evidence of compensatory drug use risk behavior

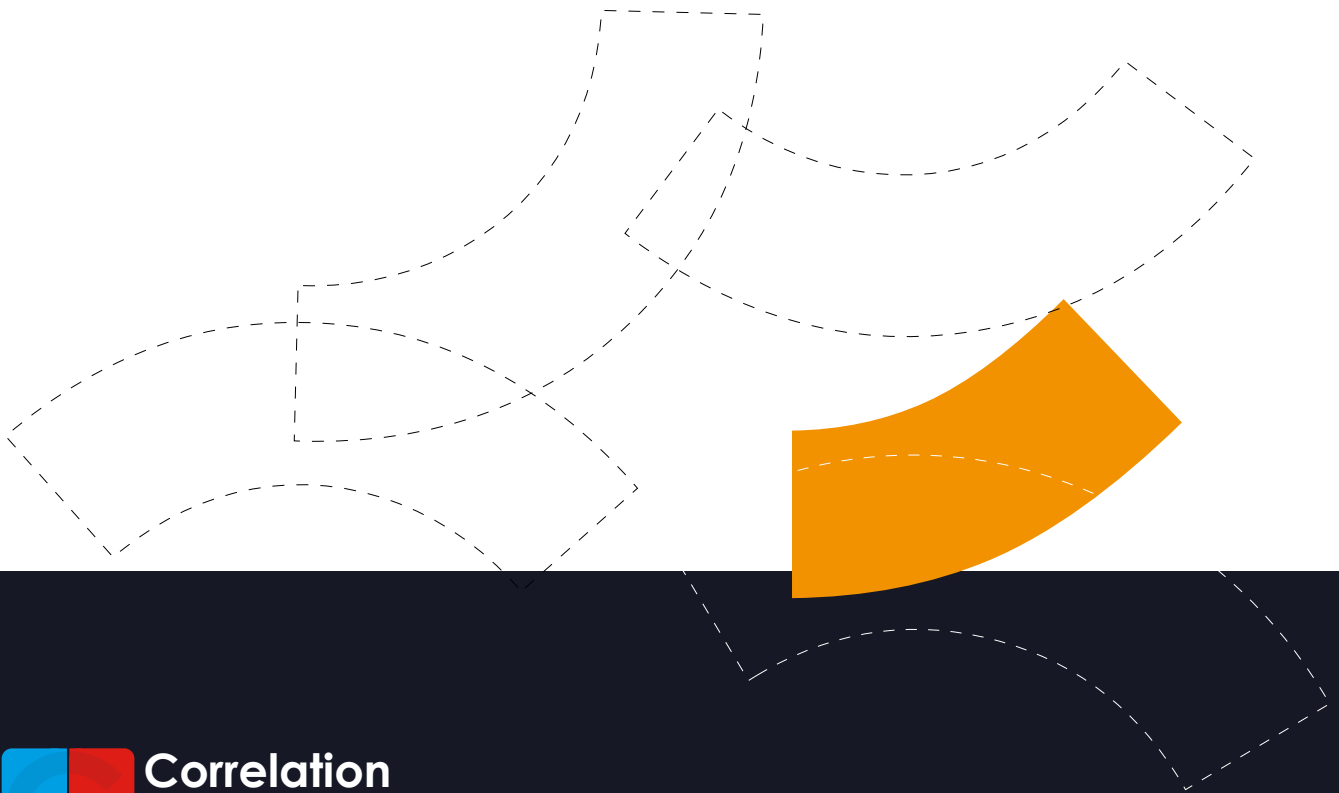
- among heroin users after receiving take-home naloxone. *Addictive Behaviors*, Vol. 71, August 2017, p104-106. <https://doi.org/10.1016/j.addbeh.2017.03.008>. Accessed 9 May 2019.
27. World Health Organization. Community management of opioid overdose. Geneva; WHO, 2014, pX. https://apps.who.int/iris/bitstream/handle/10665/137462/9789241548816_eng.pdf. Accessed 30 April 2019.
 28. World Health Organization. WHO Model List of Essential Medicines. 20th List. Geneva; WHO, Amended August 2017, p4. <https://apps.who.int/iris/bitstream/handle/10665/273826/EML-20-eng.pdf>. Accessed 2 May 2019.
 29. World Health Organization. Global Health Observatory data repository: Registration of naloxone for injection for opioid overdose: Data by country, updated 1 September 2017, <http://apps.who.int/gho/data/node.main.RSUD510?lang=en>; additional registration information from Papua New Guinea and Zambia was identified by the author through a separate search using Google.
 30. Belarus, Republic of Moldova, Russian Federation and Ukraine.
 31. Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, North Macedonia, Romania, Serbia and Turkey.
 32. Andorra, Austria, Belgium, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland and the UK.
 33. World Health Organization. Global Health Observatory data repository: Registration of naloxone for injection for opioid overdose: Data by country. Updated 1 September 2017. <http://apps.who.int/gho/data/node.main.RSUD510?lang=en>. Accessed 29 April 2019.
 34. No data is available for Hungary and Luxembourg as well as for the smaller countries of Andorra, Liechtenstein, Monaco and San Marino, respectively.
 35. World Health Organization. Global Health Observatory data repository: Availability of naloxone: Data by country. Updated 1 September 2017. <http://apps.who.int/gho/data/node.main.RSUD520?lang=en>. Accessed 29 April 2019; additional information was gathered through an internet-based search using the Google LLC Web Search at <https://www.google.com/>
 36. Hedrich D. Harm Reduction in Europe – here are the facts. European Monitoring Centre for Drugs and Drug Addiction. Presentation to the European Harm Reduction Conference, Bucharest, Romania, 21-23 November 2018, p15.
 37. Ronconi S, Beccaria F, Camposeragna A, Rolando S, Nencini P, Jarre P. Preventing opioid overdose deaths: A research on the Italian naloxone distribution model, 2016. *Forum Droghe*, 2017. <http://formazione.fuoriluogo.it/wp-content/plugins/download-attachments/includes/download.php?id=726>. Accessed 1 May 2019.
 38. See, <https://harmreductioneurasia.org/overdose-awareness-day/> and also, https://www.opensocietyfoundations.org/sites/default/files/overdose_20080801.pdf. Accessed 6 May 2019.
 39. Stone K, Shirley-Beavan S. Global State of Harm Reduction 2018. London, UK; Harm Reduction International, 2018. <https://www.hri.global/files/2019/02/05/global-state-harm-reduction-2018.pdf>. Accessed 13 May 2019.
 40. Strang J, McDonald R (eds.). Preventing opioid overdose deaths with take-home naloxone. Luxembourg; European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), 2016. <http://www.emcdda.europa.eu/system/files/publications/2089/TDXD15020ENN.pdf>. Accessed 19 June 2019.

41. WHO Model List of Essential Medicines, Ibid.
42. LaVito A. FDA clears the way to increase access and lower cost of life-saving opioid overdose treatment drug. CNBC, 17 January 2019. <https://www.cnbc.com/2019/01/16/fda-wants-pharma-to-bring-opioid-antidote-naloxone-over-the-counter.html>. Accessed 9 May 2019.
43. Paola S. Intranasal naloxone now available in Australia. *Australian Journal of Pharmacy*, 18 February 2019. <https://ajp.com.au/news/intranasal-naloxone-now-available-in-australia/>. Accessed 30 April 2019.
44. Ronconi S. Voices: Learning from Italy's Lead on Naloxone. New York, USA; Open Society Foundations (OSF), March 30, 2017. <https://www.opensocietyfoundations.org/voices/learning-italy-s-lead-naloxone>. Accessed 9 May 2019.
45. https://www.exchangesupplies.org/shopdisp_prenoxad_naloxone_prefilled_syringe.php
46. <https://bnf.nice.org.uk/medicinal-forms/naloxone-hydrochloride.html>
47. LaVito A, Ibid.
48. Paola S, Ibid.
49. Freeman PR, Hankoskya ER, Lofwall MR, Talbert JC. The changing landscape of naloxone availability in the United States, 2011 – 2017. *Drug and Alcohol Dependence*. Vol. 191, 1 October 2018, p361-364. <https://doi.org/10.1016/j.drugalcdep.2018.07.017>. Accessed 10 May 2019.
50. Kesselheim AS, Avorn J, Sarpatwari A. The High Cost of Prescription Drugs in the United States: Origins and Prospects for Reform. *JAMA*. 2016;316(8):858-871. doi:10.1001/jama.2016.11237. Accessed 9 May 2019.
51. Kapczynski A, Kesselheim AS. 'Government Patent Use': A Legal Approach To Reducing Drug Spending. *Health Affairs* 35, No. 5 (2016): 791–797. DOI: 10.1377/hlthaff.2015.1120. Accessed 9 May 2019.
52. Gupta R, Shah ND, Ross JS. The Rising Price of Naloxone — Risks to Efforts to Stem Overdose Deaths. *N Engl J Med* 2016; 375:2213-2215 DOI: 10.1056/NEJMp1609578. Accessed 1 May 2019.
53. Gupta R et al, Ibid.
54. United Nations Office on Drugs and Crime. Outcome Document of the 2016 United Nations General Assembly Special Session on the World Drug Problem. New York; United Nations, 2016, p7. <https://www.unodc.org/documents/postungass2016/outcome/V1603301-E.pdf>. Accessed 8 May 2019.
55. Rees DI, Sabia JJ, Argys LM, Latshaw J, Dave D. With a Little Help from My Friends: The Effects of Naloxone Access and Good Samaritan Laws on Opioid-Related Deaths. NBER Working Paper No. 23171. Cambridge, MA, USA; National Bureau of Economic Research, February 2017. <https://www.nber.org/papers/w23171.pdf>. Accessed 1 May 2019.
56. European Monitoring Centre for Drugs and Drug Addiction. Preventing overdose deaths in Europe (Perspectives on drugs). Lisbon, Portugal; EMCDDA, October 2018. http://www.emcdda.europa.eu/system/files/publications/2748/POD_Preventing%20overdose%20deaths.pdf. Accessed 1 May 2019.
57. A recommendation from Forum Droghe. Preventing opioid overdose deaths: A research on the Italian naloxone distribution model, 2016. Forum Droghe, 2017. <http://files.server.idpc.net/library/THN-ENG.pdf> Accessed 10 May 2019.
58. Rees DI, Sabia JJ, Argys LM, Latshaw J, Dave D. With a Little Help from My Friends: The Effects of Naloxone Access and Good Samaritan Laws on Opioid-Related Deaths. NBER Working Paper No. 23171. Cambridge, MA, USA; National Bureau of Economic Research, February 2017. <https://www.nber.org/papers/w23171.pdf>. Accessed 1 May 2019.
59. Civil Law (Miscellaneous Provisions) Act 2011, SI 449; <http://www.drugs.ie/resources/naloxone/>. Accessed 7 May 2019.

60. For example, Dunn KE, et al. (2017). Randomized controlled trial of a computerized opioid overdose education intervention. *Drug and Alcohol Dependence*, 173 (Suppl 1), 2017, S39-S47. <http://dx.doi.org/10.1016/j.drugalcdep.2016.12.003>. Accessed 10 May 2019.
61. European Monitoring Centre for Drugs and Drug Addiction. Preventing opioid overdose deaths with take-home naloxone. Luxembourg; Publications Office of the European Union, 2016, p50-52. <http://www.emcdda.europa.eu/system/files/publications/2089/TDXD15020ENN.pdf>. Accessed 1 May 2019.
62. European Monitoring Centre for Drugs and Drug Addiction. Preventing opioid overdose deaths with take-home naloxone. Luxembourg; EMCDDA, 2016, p50-52. <http://www.emcdda.europa.eu/system/files/publications/2089/TDXD15020ENN.pdf>. Accessed 1 May 2019.
63. European Monitoring Centre for Drugs and Drug Addiction. Preventing opioid overdose deaths with take-home naloxone. Luxembourg; Publications Office of the European Union, 2016. <http://www.emcdda.europa.eu/system/files/publications/2089/TDXD15020ENN.pdf>. Accessed 1 May 2019.
64. Stone K, Shirley-Beavan S. Global State of Harm Reduction 2018. London, UK; Harm Reduction International, 2018, Table 1.1.1., p14-17. <https://www.hri.global/files/2019/02/05/global-state-harm-reduction-2018.pdf>. Accessed 13 May 2019.
65. Chimbar L, Moleta Y. Naloxone Effectiveness: A Systematic Review. *Journal of Addictions Nursing*, Jul/Sep 2018, Vol. 29/3, pp167-171. DOI: <http://dx.doi.org/10.1097/JAN.0000000000000230>. Accessed 23 May 2019.
66. McDonald R, Campbell ND, Strang J. Twenty years of take-home naloxone for the prevention of overdose deaths from heroin and other opioids - Conception and maturation. *Drug Alcohol Depend.* 2017 Sep 1;178:176-187. doi: 10.1016/j.drugalcdep.2017.05.001. Accessed 1 May 2019.
67. European Monitoring Centre for Drugs and Drug Addiction. Preventing fatal overdoses: a systematic review of the effectiveness of take-home naloxone, EMCDDA Papers. Luxembourg; Publications Office of the European Union, 2015. doi: 10.2810/396726. Accessed 14 May 2019.
68. Clark AK, Wilder CM, Winstanley EL. A systematic review of community opioid overdose prevention and naloxone distribution programs. *J Addict Med.* 2014 May-Jun;8(3):153-63. doi: 10.1097/ADM.0000000000000034. Accessed 8 May 2019.
69. Coffin PO, Sullivan SD. Cost-effectiveness of distributing naloxone to heroin users for lay overdose reversal. *Ann Intern Med.* 2013 Jan 1;158(1):1-9. doi: 10.7326/0003-4819-158-1-201301010-00003. Accessed 1 May 2019.
70. Strang J, McDonald R (eds.). Preventing opioid overdose deaths with take-home naloxone. Luxembourg; European Monitoring Centre for Drugs and Drug Addiction, 2016, p54. <http://www.emcdda.europa.eu/system/files/publications/2089/TDXD15020ENN.pdf>. Accessed 1 May 2019.
71. Southwell M. Peer-to-Peer distribution of Naloxone (P2PN) – Technical Briefing. London; European Network of People who Use Drugs (EuroNPUD), 17 February 2019, p8. https://static1.squarespace.com/static/58321efcd1758e26bb49208d/t/5cc1b6e58165f5f7caf78294/1556199312966/EuroNPUD_Technical_Briefing_P2P_Naloxone_final_3.pdf. Accessed 8 May 2019.
72. Scottish Prison Service. Drug Misuse – Targeted Call for Views. Edinburgh, Scotland; Health and Sports Committee, Scottish Parliament, 10 January 2018. http://www.parliament.scot/S5_HealthandSportCommittee/Inquiries/SPS.pdf. Accessed 30 July 2019.
73. <https://www2.gov.scot/Topics/Justice/policies/drugs-alcohol/overdose-prevention>. Accessed 30 July 2019.
74. <https://www.gov.scot/policies/alcohol-and-drugs/naloxone-provision/>. Accessed 30 July 2019.
75. Scottish Prison Service. Drug Misuse – Targeted Call for Views. Edinburgh, Scotland; Health and Sports Committee, Scottish Parliament, 10 January 2018. http://www.parliament.scot/S5_HealthandSportCommittee/Inquiries/SPS.pdf. Accessed 30 July 2019.
76. Bird SM, McAuley A. Scotland's National Naloxone Programme. *The Lancet*, Vol. 393, Issue 10169,

- p316-318, January 26, 2019. DOI: [https://doi.org/10.1016/S0140-6736\(18\)33065-4](https://doi.org/10.1016/S0140-6736(18)33065-4). Accessed 12 July 2019.
77. As of April 2018, this includes: 76 in Australia, Canada, USA; 10 in Denmark, Norway; 4 in France, Ireland, Belgium; 27 in Germany; 2 in Luxembourg; 31 in the Netherlands; 1 in Slovenia; 17 in Spain, Portugal; 14 in Switzerland; see, International Network of Drug Consumption Rooms (INDCR), <http://www.drugconsumptionroom-international.org/>, accessed 27 June 2019; European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). Drug consumption rooms: An overview of provision and evidence (Perspectives on Drugs). Lisbon, Portugal; EMCDDA, October 2018, p2. http://www.emcdda.europa.eu/system/files/publications/2734/POD_Drug%20consumption%20rooms.pdf Accessed 27 June 2019; Stone K, et al, GSHR 2018, Ibid.
78. Beletsky L, Baker P, Arredondo J, Emuka A, Goodman-Meza D, et al. The global health and equity imperative for safe consumption facilities. *The Lancet*, Vol 392, Issue 10147, p553-554, August 18, 2018. DOI: [https://doi.org/10.1016/S0140-6736\(18\)31469-7](https://doi.org/10.1016/S0140-6736(18)31469-7). Accessed 21 May 2019.
79. Marshall BD, Milloy MJ, Wood E, Montaner JSG, Kerr T. Reduction in overdose mortality after the opening of North America's first medically supervised safer injecting facility: a retrospective population-based study. *Lancet* 2011;377(9775):1429-37. DOI: [https://doi.org/10.1016/S0140-6736\(10\)62353-7](https://doi.org/10.1016/S0140-6736(10)62353-7). Accessed 21 May 2019.
80. Ng J, Sutherland C, Kolber MR. Does evidence support supervised injection sites? *Can Fam Physician*. 2017 Nov; 63(11): 866. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5685449/>. Accessed 21 May 2019.
81. Drug Policy Alliance (DPA). Fact Sheet: Heroin-Assisted Treatment (HAT). New York, NY, USA; DPA, February 2016. https://www.drugpolicy.org/sites/default/files/DPA%20Fact%20Sheet_Heroin-Assisted%20Treatment_%28Feb.%202016%29.pdf. Accessed 13 May 2019.
82. NZ Drug Foundation. Cheese, chocolate, watches - and heroin-assisted treatment. *Matters of Substance*, October 2017, Vol. 28, Issue No. 3. <https://www.drugfoundation.org.nz/matters-of-substance/october-2017/cheese-chocolate-watches-and-heroin-assisted-treatment/>. Accessed 13 May 2019.
83. Smart R. Evidence on the Effectiveness of Heroin-Assisted Treatment. Santa Monica, CA, USA; RAND Corporation, December 2018. https://www.rand.org/content/dam/rand/pubs/working_papers/WR1200/WR1263/RAND_WR1263.pdf. Accessed 13 May 2019.
84. Smart R, Ibid.
85. Uchtenhagen A. The challenges in introducing regulated heroin treatment. Oxford, UK; The Beckley Foundation, 2016. <https://beckleyfoundation.org/wp-content/uploads/2016/04/The-Challenges-in-Introducing-Regulated.pdf>. Accessed 13 May 2019.
86. Smart R, Op. cit.
87. Dijkgraaf MGW, van der Zanden BP, de Borgie CAJM, Blanken P, van Ree JM, van den Brink W. Cost utility analysis of co-prescribed heroin compared with methadone maintenance treatment in heroin addicts in two randomised trials. *BMJ* 2005;330:1297. doi: <https://doi.org/10.1136/bmj.330.7503.1297>. Accessed 13 May 2019.
88. Brunt T. Drug checking as a harm reduction tool for recreational drug users: opportunities and challenges. Lisbon, Portugal; European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), 30 October 2017. http://www.emcdda.europa.eu/system/files/attachments/6339/European-ResponsesGuide2017_BackgroundPaper-Drug-checking-harm-reduction_0.pdf. Accessed 1 May 2019.
89. EMCDDA Health and social responses, Ibid.
90. Coulter E. Vancouver fentanyl screening program expands to overdose prevention sites. *News1130*, Vancouver, BC, Canada; Rogers Media, August 31, 2017. <https://www.citynews1130.com/2017/08/31/fentanyl-screening-program-vancouver-expands-overdose-prevention-sites/>. Accessed 22 May 2019.

91. EMCDDA Health and social responses, Op.cit.
92. Peiper NC, Clarke SD, Vincent LB, Ciccarone D, Kral AH, Zibbella JE. Fentanyl test strips as an opioid overdose prevention strategy: Findings from a syringe services program in the Southeastern United States. *International Journal of Drug Policy* 63 (2019) 122–128. <https://doi.org/10.1016/j.drugpo.2018.08.007>. Accessed 14 May 2019.
93. Southwell M. feedback on the use of fentanyl test strips and the harm reduction actions taken by user following test results. EuroNPUD Facebook page, May 2019.
94. McGowan CR, Harris M, Platt L, Hope V, Rhodes T. Fentanyl self-testing outside supervised injection settings to prevent opioid overdose: Do we know enough to promote it? *International Journal of Drug Policy* 58 (2018) 31–36. <https://doi.org/10.1016/j.drugpo.2018.04.017>. Accessed 14 May 2019.
95. EMCDDA Health and social responses, Op.cit.
96. European Drug Report 2019, Ibid.; National Records of Scotland, 2018, Ibid.; Office for National Statistics, 2018, Ibid.
97. European Drug Report 2019, Op.cit.; National Records of Scotland, 2018, Op.cit.; Office for National Statistics, 2018, Op.cit.



Correlation
European
Harm Reduction
Network