



European Monitoring Centre  
for Drugs and Drug Addiction

## PERSPECTIVES ON DRUGS

# Preventing overdose deaths in Europe

It is estimated that over 70 000 lives were lost to drug overdoses in Europe in the first decade of the 21st Century. Reducing drug-related deaths, therefore, remains a major challenge for public health policy. This analysis describes some of the factors that increase the risk of fatal and non-fatal overdoses and a number of interventions developed to prevent these events.

The heroin epidemics, which spread across Europe in the 1980s, resulted in increasing numbers of overdose deaths among opioid users <sup>(1)</sup>. Although the annual number of reported deaths peaked around the turn of the millennium, drug overdose still claimed more than 70 000 lives in Europe in the subsequent decade. Contrary to the promising overall trend between 2009 and 2013, when the number of reported overdose deaths fell from around 7 100 to 6 100, the most recent data from a number of countries with relatively robust reporting systems, including Germany, Sweden and the United Kingdom, show an increase.

Drug overdose continues to be a major cause of death, especially among young people in Europe, with recent data showing that it accounts for more than 3.4 % of all deaths among Europeans between the ages of 15 and 39 (Eurostat, 2013). European countries have implemented a variety of approaches in their attempt to reduce overdose deaths at the national level using evidence-based interventions drawing on an understanding of individual and environmental risk factors.

### Which factors increase the risk of fatal and non-fatal overdose?

The type of substance used, the route of administration and the health of the user all have an impact on the risk of overdose. Most overdose deaths are linked to the use of opioids, primarily the injection of heroin. Heightened levels of risk are also associated with the misuse of certain prescription

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[emcdda.europa.eu/topics/pods/preventing-overdose-deaths](http://emcdda.europa.eu/topics/pods/preventing-overdose-deaths)



<sup>(1)</sup> In this analysis, the term 'overdose deaths' refers to deaths that are caused directly by the consumption of one or more illicit drug (<http://www.emcdda.europa.eu/activities/drd>). Generally, overdose deaths occur shortly after the consumption of the substance(s). These deaths are also known as 'poisonings' or 'drug-induced deaths'.

drugs (e.g. benzodiazepines), and the non-medical use of prescribed substitution medications and opioid analgesics (Giraudon et al., 2013). In addition, a substantial number of deaths involve polydrug use, particularly heroin in combination with other central nervous system depressants, such as alcohol or benzodiazepines.

A number of environmental factors increase the risk of drug overdose death, including in the case of opioid users, disruption of treatment provision or discontinuity of treatment and care. And in certain situations, for example following detoxification or discharge from drug-free treatment, the tolerance of drug users to opioids is greatly reduced and as a result they are at particularly high risk of overdosing. For these same reasons, inadequate throughcare between prison and community has also been identified as an important environmental risk factor (Zlodre and Fazel, 2012).

Finally, the lack of response or inadequate interventions by those witnessing overdoses, whether due to poor first aid knowledge, lack of access to effective medication or fear of legal repercussions, increases the risk of an overdose event having a fatal outcome (Frischer et al., 2012).

### A range of responses: reducing the number of overdoses and preventing deaths

Drawing on the insights gained from risk and protective factors, the prevention of overdose deaths is generally addressed at two levels: the first involves a set of interventions geared towards the complete prevention of overdoses, while the second focuses on reducing fatal outcomes when overdoses do occur (Frischer et al., 2012). At both levels, strategies used include the scaling-up of known protective factors and the reduction of existing risks. Below, we introduce some of the most important strategies used by countries to address these intervention levels.

#### *Increasing awareness of and information about overdose risks*

As many drug users either are unaware of or seriously underestimate overdose risks, effective communication with users can act as a catalyst for reducing harm. Ideally, overdose prevention, education and counselling interventions would be provided by trained professionals as a matter of routine in the relevant health and primary care settings. Screening for overdose risk by those treating heroin users may contribute to reductions in overall mortality (Darke et al., 2011), while the use of overdose risk assessment interventions can assist the early identification of high-risk individuals.

28 EMCDDA reporting countries now report the distribution of overdose risk information, which is sometimes also available in different languages, in order to reach migrant drug users. There is increasing use of the Internet and new channels of

## Facts and figures

**1.3 million** problem opioid users in Europe

**6 100** overdose deaths in 2013

More than **70 000** overdose deaths during the first decade of the 21st century

**3.4 %** of all deaths in adult males under 40

**730 000** clients in opioid substitution treatment in 2013

**7** countries with take-home naloxone programmes

**8** countries, including Switzerland, with drug consumption rooms

communication in this field, for example an e-health overdose risk assessment tool and overdose awareness videos, which may be projected in the waiting rooms of drugs facilities (e.g. <http://vimeo.com/album/1655129>). Acknowledging the similarity of trends in mortality related to prescription opioids in Europe to those witnessed in the US, countries now have an opportunity to adapt and scale up their prevention measures, reinforce surveillance and introduce improved regulatory measures to prevent deaths reaching epidemic proportions (Giraudon et al., 2013).

#### *Provision of effective drug treatment and retention in treatment*

There is convincing evidence that opioid substitution treatment (OST) substantially reduces the risk of mortality, as long as doses are sufficient and continuity of treatment is maintained (e.g. Degenhardt et al., 2011). A prospective observational cohort study conducted in Edinburgh recently confirmed that survival is increased by cumulative exposure to treatment (Kimber et al., 2010). As retention in drug treatment is a protective factor against overdose deaths, many European countries have given priority to increasing access to and coverage of treatment services.

With OST provision high, medical staff and service planners face the challenge of minimising the diversion of substitution medications to those without prescriptions while continuing to ensure that access to treatment is not impeded. Another widely used approach to reduce the risk of overdose is the implementation of good treatment practice, which involves the use of clinical guidelines and training doctors in prescribing practices (including benzodiazepine prescribing).

### *Improving throughcare between prison and community*

Several interventions are recommended to help reduce the high numbers of overdose deaths among former prisoners in the period shortly after leaving prison (Merrall et al., 2010; Binswanger et al., 2013). (Merrall et al., 2010; Binswanger et al., 2013). These include pre-release education on overdose risks and prevention, continuation and initiation of substitution treatment and improved referral to aftercare and community treatment services (WHO, 2010). A randomised trial (N-ALIVE trial) is under way to test the hypothesis that giving naloxone on release to prisoners with a history of heroin injecting will reduce heroin overdose deaths in this population during the most risky period — the first 12 weeks after release (Strang et al., 2013).

### **| Prevention of deaths in overdose situations**

A second set of responses focuses on the prevention of fatalities when overdoses occur. These include a range of targeted interventions, the purpose of which is to enhance safety and ensure a rapid and effective response in emergency situations.

#### *Supervised drug consumption rooms*

A total of 74 facilities for supervised drug consumption operate across five Member States and Norway, serving specific subgroups of highly marginalised and homeless drug users. Supervised drug consumption facilities aim to reach marginalised high-risk drug users and connect them to the wider network of care, to reduce acute risks of diseases and overdose death associated with injecting or inhalative drug use, and to reduce public drug use (EMCDDA, 2015). Consumption rooms are highly targeted services, usually integrated within facilities that offer a broad range of other health and social services. They provide a safer drug use environment, advice on safer injecting and medical supervision, and are equipped to manage drug overdoses and reduce related morbidity and mortality. Millions of injections have been supervised and no overdose fatalities have occurred in the facilities. Evidence from robust studies document increased access to health and social services among clients of supervised drug consumption facilities as well as decreased public drug use and associated nuisance. A reduction in overdose mortality at population level was documented in the local area in the city of Vancouver, where a supervised injecting facility operates (Marshall et al., 2011). See also, Drug consumption rooms (EMCDDA Perspectives on Drugs, 2015).



### *Improved bystander response*

Most overdoses occur when others are present and most injecting drug users have witnessed or experienced overdoses. Therefore, drug users themselves, or their friends and family, are likely to be both bystanders and potential first responders in emergency overdose situations (Strang et al., 2008). These human networks, with appropriate training and awareness raising, can be utilised to prevent overdose deaths. Interventions that aim to improve bystander responses consist of training peers and family members of drug users in overdose prevention, recognition and response. In their new guidelines on community management of opioid overdose, the World Health Organization recommends that people likely to witness an opioid overdose should have access to naloxone — an effective antidote that can reverse opioid intoxication — and should be instructed in its administration (WHO, 2014).

Evidence shows that educational and training interventions for peers and family members, complemented by take-home naloxone, help decrease overdose-related mortality (EMCDDA, 2015). In October 2014, the EMCDDA brought together naloxone projects for a Europe-wide exchange of knowledge and experience.

### **| Conclusions**

Drug overdose deaths are preventable, and there is good evidence to show that specific interventions can both reduce the occurrence of overdose events and prevent fatal outcomes in overdose situations. Although the overall numbers of drug-induced deaths remain high, Europe has seen some positive trends and developments in recent years. The accumulated knowledge about risk and protective factors associated with overdoses, and about the successful management of overdose situations, has grown.

Access to OST, which constitutes an important protective factor, has been substantially scaled up across the region. In addition, some countries have introduced new and targeted approaches, searching for innovative ways to identify those at risk of overdose, to raise risk awareness and to enable those who witness overdoses to intervene and prevent fatal outcomes.

## Interactive element: video



Video: example of an overdose awareness video projected in waiting rooms of drugs facilities available on the EMCDDA website: [emcdda.europa.eu/topics/pods/preventing-overdose-deaths](http://emcdda.europa.eu/topics/pods/preventing-overdose-deaths)

## Peer naloxone distribution

Naloxone (Narcan®) is an opioid antagonist medication used worldwide in emergency medicine to reverse respiratory depression caused by opioid overdose. Naloxone is listed by the World Health Organization as an essential medicine and is available in injectable form (intramuscular and intravenous) and in some countries as an intranasal spray. The effectiveness of concentrated intranasal naloxone has been shown to be similar to that of intramuscular naloxone as a first-line treatment for heroin overdose (Kerr et al., 2009). Community-based opioid overdose prevention programmes which combine naloxone distribution by training potential bystanders, such as opioid users and their peers and family on how to administer the drug in order to reverse the effects of opioid overdose are among the range of overdose prevention responses in the US and Europe (CDC, 2012; Clark et al., 2014; Williams et al., 2014).

A recent EMCDDA systematic review of the available studies on take-home naloxone concludes: 'There is evidence from one interrupted time-series study, involving 2 912 opioid users at risk of overdose in 19 communities followed up for seven years, that educational and training interventions

complemented by take-home naloxone decrease overdose-related mortality. There is weaker, but consistent, evidence that similar interventions for opioid-dependent patients and their peers effectively improve knowledge, while forming positive attitudes to the correct use of naloxone and the management of witnessed overdoses' (EMCDDA, 2015).

Currently, seven European countries (Denmark, Estonia, Germany, Italy, Norway, Spain and the United Kingdom) report the existence of take-home naloxone programmes, some of them small and time limited. Scotland and Wales run nationwide programmes of naloxone distribution to high-risk users in the community and to inmates released from prison. Latest data from the national naloxone programme in Scotland show a reduction in the rate of opioid-related deaths within four weeks of prison release to 4.7 % in comparison to the 2006–10 baseline indicator of 9.8 % (Information Services Division, 2014). In some countries, legislative reform may be needed to allow the low-threshold provision of naloxone, but the measure is regarded as a low-cost approach that can empower healthcare workers and people who use drugs to save lives (WHO, 2014, p.9).

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