


# DRUG & ALCOHOL FINDINGS *Review analysis*

This entry is our analysis of a review or synthesis of research findings considered particularly relevant to improving outcomes from drug or alcohol interventions in the UK. The original review was not published by Findings; click [Title](#) to order a copy. [Links](#) to other documents. [Hover over](#) for notes. [Click to](#) highlight passage referred to. [Unfold extra text](#) . The Summary conveys the findings and views expressed in the review. Below is a commentary from Drug and Alcohol Findings.

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## ▶ **Preventing opioid overdose deaths with take-home naloxone.**

**Strang J., McDonald R. (eds)**

**European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), 2016.**

*To aid policymaking, experts commissioned by the European Union's drug misuse monitoring centre review the evidence and offer guidance on the provision of the medication naloxone, which reverses the effects of drugs like heroin, helping to prevent overdoses becoming fatal.*

**SUMMARY** This multi-authored book from European Union's [drug misuse monitoring centre](#) both reviews the evidence on the use of the medication naloxone to prevent overdoses due to heroin and other [opioid](#) drugs becoming fatal, and offers guidance on how to set up programmes to make the medication more widely available. It was produced at a time when a number of European countries were considering mounting programmes which provide 'take-home' naloxone to non-medical personnel for them to administer in an emergency. In this context the aim was to share experiences from other countries in order to broaden the knowledge base for decision-making. This account is based on the document's own summary.

Individuals who overdose on heroin or other [opioids](#) classically receive treatment when the ambulance or emergency medical care arrives, at which point the medication naloxone is typically given. Naloxone is an opioid antagonist which reverses opioid overdose, and has been used in clinical and hospital overdose management since the 1970s. Over the past 20 years provision of naloxone kits to opioid users and others likely to witness opioid overdoses has emerged as a novel harm-reduction intervention to make the antidote available in situations of need. Several countries in Europe and elsewhere have introduced take-home naloxone programmes that combine provision of the antidote with training in overdose prevention and emergency management. In November 2014, the World Health Organization (WHO) released [guidelines](#) recommending take-home naloxone be made available to anyone likely to witness an overdose.

The featured publication provides both practitioners and policymakers with an analysis of the current evidence base on take-home naloxone. Specifically, it includes a comprehensive review of take-home naloxone initiatives in Europe. It also guides the reader through key issues of implementation, including training and programme evaluation. Finally, it engages in current debates around naloxone availability, including the development of non-injectable formulations and laws to facilitate provision.

Chapter 1 describes the pharmacological basis of [opioids](#) and the reversal of their effects. Opioids have unique pain-relieving, anti-anxiety and sedative effects, but in the event of overdose can suppress the rate of breathing to the point of loss of consciousness, organ failure and death. The potential dangers of opioid drugs are illustrated by the example of heroin and its effects on the respiratory system. The chapter also explores risk factors that influence the likelihood of overdose. The chapter then introduces the opioid antagonist naloxone and summarises its pharmacology, how it is metabolised and other factors that influence its mechanism of action, such as the half-life [how quickly a drug is eliminated from the body] of opioid agonists. The high specificity of naloxone in blocking opioid action is described as its defining feature, explaining why, 50 years after its original manufacture, naloxone remains the antidote of choice for reversing opioid overdose.



### Key points From summary and commentary

Naloxone is an [opioid](#) 'antagonist' medication which reverses overdose, preventing deaths from heroin and similar drugs.

This review and guidance published by the European Union's [drug misuse monitoring centre](#) is intended to aid policymaking on naloxone provision.

It provides an overview of take-home naloxone provision, describing the diffusion, practice and effectiveness of the intervention.

Chapter 2 covers the use of emergency naloxone by healthcare professionals in the emergency department and ambulance settings. In addition to comparing the different licensed routes of administration, it addresses the side effects of naloxone, with particular focus on precipitated withdrawal [the sudden onset of withdrawal effects due to the administration of an opioid-blocking drug] in [opioid](#)-dependent individuals. Naloxone administration also bears the risk of post-recovery re-intoxication due to its short half-life relative to some of the opioids: the naloxone-induced blockade of opioid neural receptors wears off with time, and naloxone doses may need to be repeated to ensure the overdose victim does not drift back into overdose. A concluding section discusses dosage recommendations and dose titration.


Chapter 3 highlights the significant contribution of heroin and other [opioids](#) to the high level of premature and preventable drug-induced deaths in Europe. The chapter contains a comprehensive review of the risk factors for opioid overdose. Personal correlates and predictors of risk of overdose include age, gender, history of use and comorbid medical conditions. Behavioural risk determinants include route of administration, co-use of other substances, reduced tolerance [acquired ability to tolerate larger doses after repeated use which fades with non-use] and using alone. Overdose deaths are typically clustered around specific situations, most prominently the periods following release from prison and discharge from residential detoxification and recovery treatment. In consideration of the fact that most overdoses occur in the presence of others, take-home naloxone is presented as a harm-reduction intervention that offers lay [not medically trained] bystanders direct access to a potentially life-saving medication.

Chapter 4 describes the historical development of take-home naloxone provision, from its grassroots origins in Chicago to its current role in government-funded public health programmes in Europe and beyond. Take-home naloxone was first proposed in the mid-1990s as a previously overlooked opportunity to prevent deaths by providing naloxone to peers and


proposed in the mid-1990s as a previously overlooked opportunity to prevent deaths by providing naloxone to peers and family and consequently reducing the time between overdose onset and naloxone administration. The chapter reviews two decades of take-home naloxone research, covering its first mention in the peer-reviewed literature, through initial exploration of feasibility and attitudes among potential target populations, the assessment of safety and legal concerns, to reports and programme evaluations. The chapter includes a summary of current take-home naloxone programmes in Europe and beyond, which is enriched by outcome data, examples of good practice and lessons learnt. A timeline of the history of take-home naloxone development is also provided.

**GIVE NALOXONE**

Inject into the muscle: buttock, outer thigh or upper arm.



1. Insert the needle at a 90-degree angle to the muscle.
2. Push down the plunger.
3. Put syringe in a safe place. Don't cover needle.



Tell the paramedics what you have found, seen and done.

Chapter 5 explains how take-home naloxone programmes can be implemented in practice, identifying the main target populations as well as necessary resources. Training is described as an essential part of take-home naloxone distribution programmes that can effectively increase participants' knowledge, confidence and skills in managing an **opioid** overdose. Training can be offered to former or current opioid users, their carers, and staff in frequent contact with users. It should be tailored to each setting, taking into account participant needs and available resources. Three levels of training are described: brief, standard, and advanced. The chapter also includes assessments that can be used to test overdose-related knowledge and competence before and after training. It concludes with a summary of methods for monitoring post-training impact.

**Extract from the guidance offered in chapter 5 of the featured review.**

The final chapter addresses naloxone options for the future, covering new products in development, new research initiatives, and new legislation. It briefly summarises available systematic reviews on the

effectiveness of naloxone programmes and gives an overview of recent World Health Organization [guidelines](#) on community management of opioid overdose, which recommend widespread take-home naloxone provision. Barriers to naloxone access in the European Union are identified from policy, provider and research perspectives. The final sections of the chapter address latest developments on non-injectable naloxone products and initiatives to improve legal frameworks and raise awareness among healthcare service providers, crucial facilitators for the wider availability of a life-saving intervention.

**FINDINGS COMMENTARY** In 2015 the European Monitoring Centre for Drugs and Drug Addiction which published the featured document also published a [review](#) of research on the effectiveness of naloxone programmes which found "evidence that educational and training interventions with provision of take-home naloxone decrease overdose-related mortality". More on take-home naloxone and other overdose prevention strategies in this Effectiveness Bank [hot topic](#). The Scottish Drugs Forum's [naloxone](#) web site offers more information on naloxone programmes generally and in the Scottish context.

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