

# Polydrug use: health and social responses

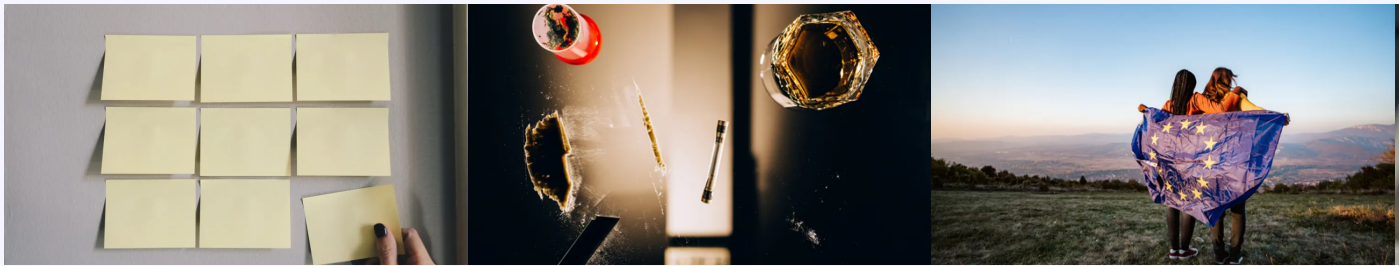
## Introduction

This miniguide is one of a larger set, which together comprise [Health and social responses to drug problems: a European guide](#). It provides an overview of the most important aspects to consider when planning or delivering health and social responses to problems related to polydrug use, and reviews the availability and effectiveness of the responses. It also considers implications for policy and practice.

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## Overview

### Key issues

The term 'polydrug use' is used to describe the use of more than one drug or type of drug by an individual either at the same time or sequentially. It encompasses the use of both illicit drugs and legal substances, such as alcohol and medicines, and most people who use drugs will on occasion use more than one substance.

Polydrug use is important because the use of multiple drugs potentially increases both the acute and chronic risks associated with consumption. Interactions can occur between substances, for example cocaine and alcohol, which can exacerbate the risks associated with using either substance in isolation. The more severe consequences of polydrug use include a greater risk of fatal and non-fatal overdoses and accidents, hepatotoxicity, co-dependency and compromised treatment outcomes.

## Evidence and responses

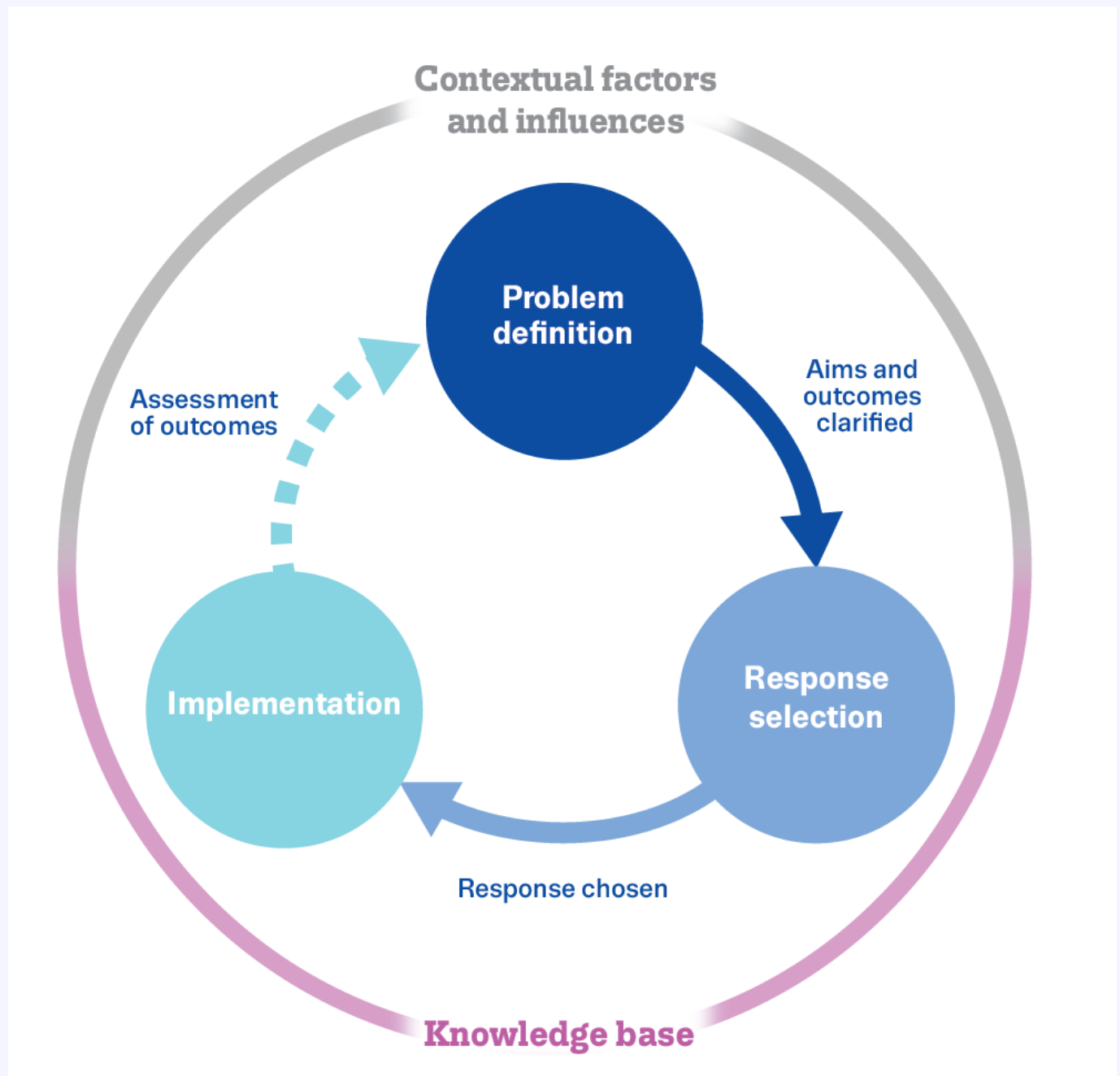
- The majority of effective prevention approaches are non-substance-specific and they may well help reduce polydrug use.
- Assessment processes that can identify problematic polydrug use in treatment clients are important, as such use is common in this group.
- The co-use of multiple substances can complicate the delivery of drug treatment and result in worse outcomes; however, large outcome studies also show that treatment can significantly reduce multiple drug use.
- Harm reduction measures for reducing alcohol and drug use in festival and nightlife settings and measures to address the misuse of medicines may be helpful for awareness-raising and in reducing the potential for harm.
- Overdose prevention is an important area of harm reduction with respect to polydrug use, in particular raising the awareness of those who use opioids regarding the risks associated with the consumption of other depressant substances, particularly alcohol and benzodiazepines, together with opioids.

## European picture

- Polydrug use is very common in Europe among people who seek treatment for drug-related problems.
- Information is limited on current treatment practices in Europe for managing polydrug use.
- European countries provide a number of non-substance-specific prevention measures, a wide range of harm reduction services and various forms of treatment, including pharmacological and psychosocial interventions. These can apply also to polydrug use.

# Action framework for developing health and social responses to drug problems

*The three broad stages of developing responses to drug problems*



Health and social responses to drug problems are any actions or interventions that are undertaken to address the negative health and social consequences of illicit drug use, such as deaths, infectious diseases, dependency, mental health problems and social exclusion. Developing and implementing such responses, whether at EU, national, local or individual level, involves three basic steps:

- identifying the nature of the drug problems to be addressed;
- selecting potentially effective interventions to tackle these problems; and
- implementing, monitoring and evaluating the impact of these interventions.

The [action framework](#) details the most important factors that need to be considered at each stage.

## Key issues: patterns of polydrug use and related harms

Key questions that need to be addressed when identifying and defining a problem include who is affected, what types of substances and patterns of use are involved, and where the problem is occurring. Responses should be tailored to the particular drug problems being experienced, and these may differ between countries and over time. The wide array of factors that have to be considered at this stage in the process are discussed in the [Action framework for developing and implementing health and social responses to drug problems](#).

The term 'polydrug use' is used as a catch-all to describe the use of more than one drug or type of drug by an individual. This can involve the use of multiple substances, either at the same time (simultaneous use) or sequentially within a specified time (concurrent use). It encompasses the use of both illicit drugs and legal substances, such as alcohol, tobacco, new psychoactive substances and medicines. Polydrug use can also occur unknowingly as tablets or powders sold on the drug market may contain more than one substance.

The range of behaviours encompassed by this term can therefore be so wide that almost all consumers of psychoactive substances can be regarded as engaging in some form of polydrug use. For this reason, in responding to polydrug use problems, it is useful to focus on specific populations, drug interactions or risk behaviours that can be particularly associated with harms.

Interactions between different substances, consumed close together in time, can increase drug toxicity. The effects of some psychoactive substances can escalate the risky use of other substances. For example, alcohol intoxication can impair judgements about the amount of opioids consumed or the risk of reduced tolerance after leaving treatment or prison. Similarly, the combined use of cocaine and alcohol can increase toxicological risks. The co-use of several substances can also compound the risk of accidents or injuries.

Information from the Euro-DEN Plus project, which collects information on drug-related presentations in hospital emergency departments at sentinel sites in 21 European countries, provides insights into the role of polydrug use in acute health harms associated with drug use and how this may change over time. From recent reporting, typically about a third of presentations involved the use of two or more drugs. Where information on the use of alcohol was recorded, it was present in more than half of the drug-related hospital emergency department presentations. Some drugs were much more likely to be reported in association with additional substances than others. Most of those who were treated for MDMA intoxications, for example, had also consumed

alcohol, which was by far the most common substance co-ingested with MDMA. Differences were also seen in the drugs that were used with powder cocaine and with crack cocaine and in the clinical features of the presentations involving these two substances. Patients who presented with crack cocaine toxicity were more likely to have used other drugs, particularly opioids, while they were less likely to have ingested alcohol.

Polydrug use is very common among people with drug problems who seek treatment in Europe. Leaving aside national differences, overall the most common combinations of drugs recorded among treatment clients in Europe are cannabis as the primary drug, consumed with alcohol and powder cocaine; opioids, as the primary drug, consumed with cannabis and powder cocaine; cocaine as the primary drug, consumed with cannabis and alcohol; and non-cocaine stimulants as the primary drug, consumed with alcohol and cannabis.

Drug interactions can have important consequences for treatment and may sometimes go unrecognised. For example, many of those being treated for a primary illicit drug problem will also have problems with their alcohol use. In addition, concurrent stimulant use can result in a worse outcome for those undergoing opioid agonist treatment [1]. Failure to recognise and address these problems is not only a potential missed opportunity for improving clients' health, but it also reduces the likelihood of successfully achieving treatment goals.

Recognising polydrug use is important because the use of multiple drugs can aggravate an already difficult condition and be associated with increased risk-taking. The most severe consequences of polydrug use include fatal and non-fatal overdoses, hepatotoxicity — especially in combination with hepatitis C infection — and compromised treatment outcomes. There is also a significant prevalence of psychiatric comorbidity among people engaged in polydrug use, which demands the careful assessment of individual needs for treatment or referral to mental health services (see [Spotlight on... Comorbid substance use and mental health problems](#)).

## Common drug combinations: effects and consequences

The risks of various drug combinations are influenced by the characteristics of those using the drugs, such as their tolerance, health status or genetic or phenotypic factors. Impaired liver function may lead to higher drug concentrations in the blood, increasing toxic effects. The quantity and purity of the drugs used and the route of administration also have an impact on the effects of drug combinations. Intravenous drug use will lead to higher concentrations in the blood.

The following are some of the better-documented effects of common drug combinations:

**Cannabis and tobacco:** Smoking cannabis and tobacco together is the most common form of polydrug use in Europe. These substances are combined to facilitate combustion. Tobacco use in cannabis joints is often ignored when assessing cannabis dependence, although its high abuse liability in humans is well documented.

**Alcohol:** Alcohol is found in most polydrug use combinations. Its consumption may lead to misjudgements about the amount of other substances used and change the pharmacokinetics of other substances. Long-term use of alcohol can damage the liver and impair the metabolism of

other substances, making it dangerous to consume amounts that would otherwise be tolerated.

**Alcohol and 'club drugs':** In nightlife and other recreational settings, alcohol use with MDMA and other stimulants is relatively common. This combination of substances and setting may lead to the consumption of greater quantities of drugs of uncertain content, giving rise to a variety of acute symptoms.

**Cocaine and alcohol:** Alcohol can increase levels of cocaine in the blood by about 30 % and produces a psychoactive cocaine metabolite (cocaethylene) with a longer-lasting action. The combination increases heart rate and blood pressure and can cause cardiovascular problems. Cocaine use may increase alcohol consumption by reducing the perceived effects of alcohol intoxication. Violent behaviour and suicidal ideation have been associated with the co-use of these two substances.

**Opioids and cocaine:** Opioids depress the central nervous system whereas cocaine stimulates it. The negative cardiovascular effects of cocaine are amplified when used with opioids. Cocaine (sometimes used in the form of crack by people who use opioids) and opioids used together may increase the risk of opioid overdose and associated respiratory depression. Cocaine can mask the sedative effects of opioids, increasing the risk of a later overdose.

**Opioids and benzodiazepines, with or without alcohol:** Opioids, benzodiazepines and alcohol are all central nervous system depressants and so when used together can increase the risk of accidents, injuries and fatal and non-fatal opioid overdoses. Older people who use drugs may also have impaired metabolism of benzodiazepines, increasing the risk of respiratory depression when used with methadone.

[<sup>1</sup>] The term *opioid agonist treatment* is used here as preferred language to cover a range of treatments that involve the prescription of opioid agonists to treat opioid dependence. The reader should be aware this term includes *opioid substitution treatment (OST)*, which may still be used in some of our data collection tools and historical documents.

## European picture: availability of interventions related to polydrug use

The majority of effective prevention approaches are non-substance-specific and may well help reduce polydrug use. In particular, environmental and other prevention approaches may address some of the risks associated with the use of alcohol with other drugs in this recreational context. In addition, a number of prevention approaches have been found to reduce polydrug use involving the misuse of medicines.

There is limited information on current treatment practices for polydrug use in the EU Member States, and similarly little information on the management of problems arising from multiple substance use. Generally, the treatment literature focuses on the management of problems related to opioids or stimulants, even though large national treatment outcome studies in Australia, Italy and the United Kingdom indicate that polydrug use is a common pattern for many of those in drug treatment.

While it is generally assumed that polydrug use is hard to treat, large outcome studies show that treatment significantly reduces multiple drug use among highly problematic users. These studies also show that drug treatment substantially reduces the proportion of clients who use multiple substances (moderate quality of evidence). Although the lack of randomisation of client to treatment limits the attribution of these changes to treatment, the results suggest that treatment can reduce polydrug use in people with severe and long-term problem drug use. These findings are supported by systematic reviews of a small number of randomised controlled studies that have demonstrated that pharmacological and psychosocial interventions, such as contingency management, can reduce polydrug use, especially stimulant use among clients in opioid agonist treatment (moderate quality of evidence).

Harm reduction services for people with problematic drug use usually address the harms and risk behaviours in relation to injecting rather than focusing on a specific substance. Harm reduction interventions operate within a broader prevention strategy that combines other types of services such as outreach work and opioid agonist treatment, which focuses on improving the health of people who use multiple substances.

Overdose prevention is an important area for harm reduction with respect to polydrug use. Raising awareness among people who use opioids concerning the risks associated with taking other depressant substances at the same time, particularly alcohol and benzodiazepines, is an important strand of opioid overdose prevention programmes. Similarly, people who may use drugs in nightlife and festival settings need to be alerted to the dangers of mixing substances, often of unknown content. Drug-checking programmes can help to address this issue by providing information on the content of substances as well as counselling and advice on safer use.

European countries provide a wide range of harm reduction services, which include safer-use training, needle and syringe programmes, infectious diseases testing and counselling, and hepatitis B vaccination, alongside the treatment of viral hepatitis and HIV infection. These services can also be relevant to polydrug users.

## Implications for policy and practice

### Basics

- Among people engaging in high-risk drug use, polydrug use appears to be more the rule than the exception, although the form it takes can vary across populations and settings.
- Beyond illicit substances, polydrug use commonly involves tobacco, alcohol and prescription medicines. Responses to the needs of people who use multiple substances must be integrated and articulated to address this complexity.
- Polydrug use increases the risk of a wide range of drug-related harms. Among the most severe consequences, the concomitant use of several depressant drugs such as opioids, benzodiazepines and alcohol increases the risk of fatal and non-fatal overdose.

- The management of polydrug use remains a complex and challenging task. Treatment can be less successful for individuals who use multiple substances.
- Psychosocial interventions can contribute to reducing polydrug use among treatment clients.

## Opportunities

- The reduction of polydrug use should be a priority within harm reduction interventions.
- Given the impact of polydrug use on overdose risk, information on general dangers and specific risky combinations needs to be provided for people who use opioids and included in counselling interventions for this group.
- Scaling up forensic and toxicological monitoring may help to identify drug combinations that are appearing on the illicit market and which pose risks that require a rapid response.

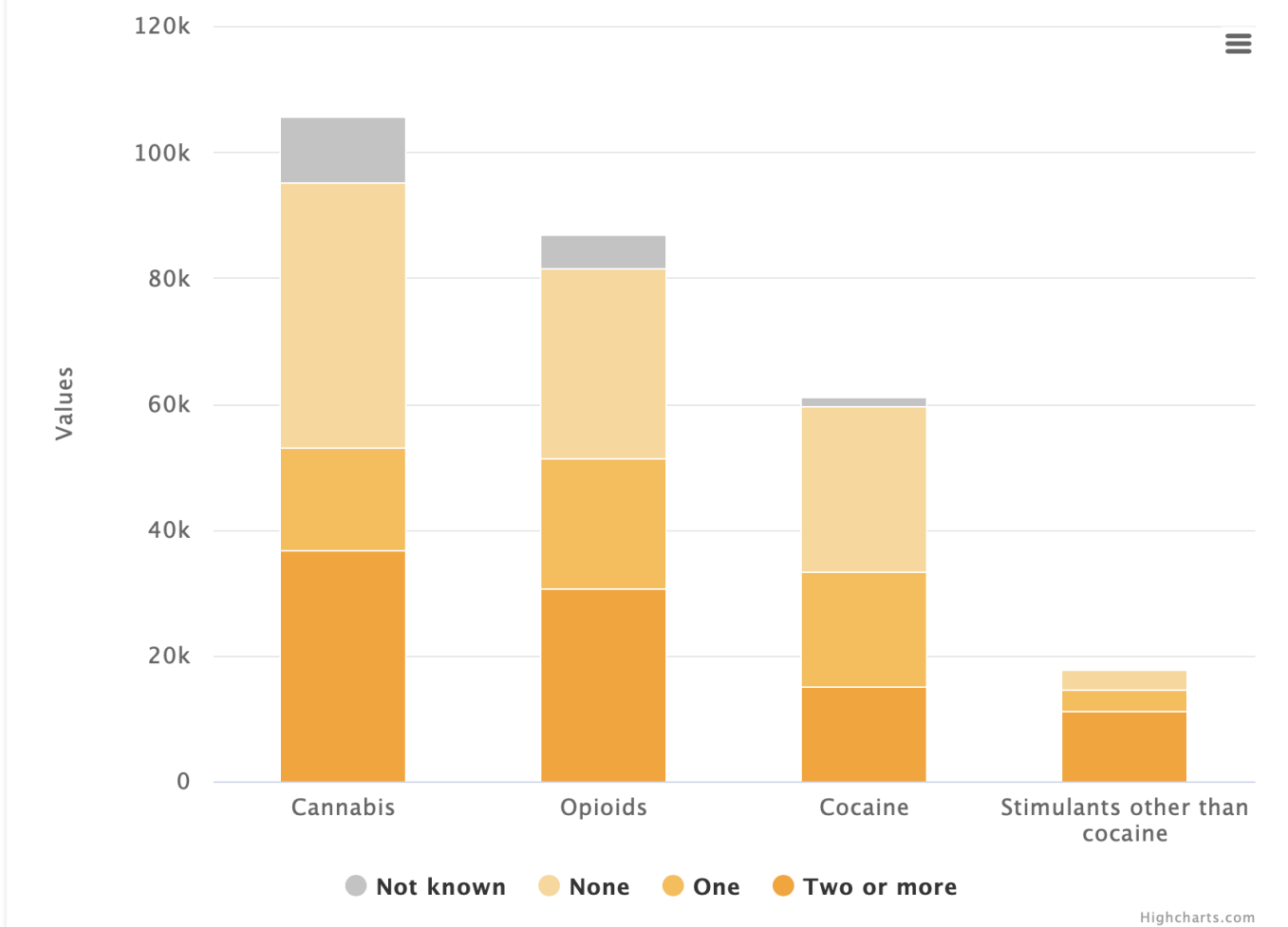
## Gaps

- In order to support the development of appropriate responses, there is a need to develop a clearer picture of the extent and nature of polydrug use among different groups of people who use drugs.
- The development of treatment models that respond more holistically to clients' substance use is required, especially in regard to identifying co-dependencies or patterns of polydrug use that are harmful.

## Data and graphics

For more detailed statistics as well as methodological information, please refer to the [Data section](#) of our website. To view an interactive versions of the infographic below, as well as to access its source data, click on an the infographic.

**Primary drug and number of secondary drugs cited among clients entering treatment in EU-27, Norway and Turkey, 2019**



## Further resources

### EMCDDA

- [An analysis of drugs in used syringes from sentinel European cities: results from the ESCAPE project, 2018 and 2019, 2021.](#)
- [European Drug Report 2021: Trends and Developments.](#)
- [Treatment demand indicator \(TDI\) standard protocol 3.0: Guidelines for reporting data on people entering drug treatment in European countries, 2012.](#)
- [Polydrug use: patterns and responses](#), Selected issue, 2009.

# About this miniguide

This miniguide provides an overview of what to consider when planning or delivering health and social responses to problems related to polydrug use, and reviews the available interventions and their effectiveness. It also considers implications for policy and practice. This miniguide is one of a larger set, which together comprise [Health and social responses to drug problems: a European guide](#).

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