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European Monitoring Centre
for Drugs and Drug Addiction

ANNUAL REPORT 2010

THE STATE OF THE DRUGS PROBLEM IN EUROPE

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Foreword

We are proud to present this, the 15th, annual report on the state of the drugs problem in Europe. The analysis included here is built on the data collected by the Reitox network of national focal points, working closely with their national experts. The report benefits from our collaboration with the European Commission, Europol, the European Medicines Agency and the European Centre for Disease Prevention and Control.

In this year's report, as ever, you will find a comprehensive overview of Europe's drug problem and the measures being taken to tackle it. However, our task goes beyond simply reporting statistics. The report is guided by the need to identify and share best practice and to ensure that evidence-based interventions are supported. This imperative applies equally to actions targeting the supply of drugs and to those targeting demand. Reading this report, it is clear that we now have a better understanding of what works, and that Europe has made great advances in some areas. Despite this, approaches lacking a sound foundation for their efficacy still attract funding. With the current pressures on the public purse, there is a heightened need to ensure that public funds are wisely spent. Here, our role is to provide a neutral and dispassionate assessment of the evidence base for interventions.

Though focused on Europe, the report repeatedly acknowledges the global nature of the drugs problem. You will read, for example, about the growing and severe drug-related problems now faced by many of our neighbouring countries. These are not just public health disasters for the countries concerned; by undermining social development and feeding corruption and organised crime they represent a real threat for the European Union. Europe is committed to a balanced and evidence-based drugs policy supported by a sound understanding of the problem. We are proud that the European model for developing national drug information systems is becoming increasingly influential. And we are pleased to report on the EMCDDA's growing role in European initiatives to assist non-EU countries in developing capacity in this respect.

The estimated 1 million people now in drug treatment testifies to the work that has been done to ensure that care is made available to those in need. At the same time, it is a reminder of the scale of the problem that Europe continues to face. Opioid substitution treatment remains the biggest sector in this area, and here the mood appears to be changing, with questions being asked about the long-term outcomes of those in care. These are important questions, but it is also important to recognise the public health and social benefits delivered by increased treatment provision.

The increase in treatment availability is a positive finding, but large inequalities in access to care still exist across Europe. In practice, treatment is sometimes least available to those who need it most. This inequality is not just geographical. This year's report explores the importance of the prison setting for targeting those with drug problems. While some progress has been made in this setting, too often a valuable opportunity to intervene with a key group of problem drug users is being lost.

We deliver this report to you at a difficult time. The current economic situation presents EU Member States with pressing challenges, and the implications for levels of drug use and service provision need to be carefully assessed. It is too early to predict what impact the economic crisis will have on drug use in Europe — but we know that marginalised and socially disadvantaged communities are the hardest hit by drug problems. Services for drug users are increasingly threatened by budget cuts, which could have a detrimental effect, not only on those who use drugs, but also on the communities in which they live. But this is not the only challenge facing Europe in the drugs field. Changes in the supply of established drugs and the emergence of new substances increasingly test our drug control models. The problems presented by these changes are complex and interconnected. They will require a concerted and collective response. The positive message from this report is that Europe is improving its capacity to keep track of this fast-moving phenomenon. This is a critical prerequisite to understanding the challenges now confronting us and to ensuring that our policy responses keep pace with an evolving drug situation.

João Goulão
Chairman, EMCDDA Management Board

Wolfgang Götz
Director, EMCDDA

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- the European Parliament, the Council of the European Union — in particular its Horizontal Working Party on Drugs — and the European Commission;
- the European Centre for Disease Prevention and Control (ECDC), the European Medicines Agency (EMEA) and Europol;
- the Pompidou Group of the Council of Europe, the United Nations Office on Drugs and Crime (UNODC), the WHO Regional Office for Europe, Interpol, the World Customs Organisation, the ESPAD project and the Swedish Council for Information on Alcohol and other Drugs (CAN);
- the Translation Centre for Bodies of the European Union and the Publications Office of the European Union.

Reitox national focal points

Reitox is the European information network on drugs and drug addiction. The network is comprised of national focal points in the EU Member States, Norway and the candidate countries and at the European Commission. Under the responsibility of their governments, the focal points are the national authorities providing drug information to the EMCDDA.

The contact details of the national focal points may be found on the EMCDDA website.

Introductory note

This annual report is based on information provided to the EMCDDA by the EU Member States, the candidate countries Croatia and Turkey, and Norway in the form of a national report. The statistical data reported here relate to 2008 (or the last year available). Graphics and tables in this report may reflect a subset of EU countries; the selection may be made on the basis of those countries from which data are available for the period of interest, or to highlight certain trends.

Analysis of trends is based only on those countries providing sufficient data to describe changes over the period specified. Figures for 2007 may substitute for missing 2008 values in trend analysis of drug market data; for the analysis of other trends, missing data may be interpolated.

Background information and a number of caveats that should be borne in mind when reading the annual report are presented below.

Drug supply and availability data

Systematic and routine information to describe illicit drug markets and trafficking is still limited. Production estimates of heroin, cocaine and cannabis are obtained from cultivation estimates based on fieldwork (sampling on the ground) and aerial or satellite surveys. These estimates have some important limitations, linked for instance with variations in yield figures or with the difficulty of monitoring crops such as cannabis, which may be grown indoors or are not restricted to certain geographical areas.

Drug seizures are often considered as an indirect indicator of the supply, trafficking routes and availability of drugs. They are a more direct indicator of drug law enforcement activities (e.g. priorities, resources, strategies), while also reflecting both reporting practices and the vulnerability of traffickers. Data on purity or potency and retail prices of illicit drugs may also be analysed in order to understand retail drug markets. Retail prices of drugs reported to the EMCDDA reflect the price to the user. Trends in price are adjusted for inflation at national level. Reports on purity or potency, from most countries, are based on a sample of all drugs seized, and it is generally not possible to relate the reported data to a specific level of the drug market. For purity or potency and retail prices, analyses are based on the reported mean or mode or, in their absence, the median. The availability of price and purity data may be limited in some countries and there may be questions of reliability and comparability.

The EMCDDA collects national data on drug seizures, purity and retail prices in Europe. Other data on drug supply come from the information systems and analyses of the United Nations Office on Drugs and Crime (UNODC), complemented by additional information from Europol. Information on drug precursors is obtained from the European Commission, which collects data on seizures of these substances in the EU, and the International Narcotics Control Board (INCB), which is involved in international initiatives to prevent the diversion of precursor chemicals used in the manufacture of illicit drugs.

The data and estimates presented in this report are the best approximations available, but must be interpreted with caution, as many parts of the world still lack sophisticated information systems related to drug supply.

Prevalence of drug use as measured by general population surveys

Drug use in the general or school population can be measured through representative surveys, which provide estimates of the proportion of individuals that report having used specific drugs over defined periods of time. Surveys also provide useful contextual information on patterns of use, sociodemographic characteristics of users and perceptions of risks and availability.

Accessing the annual report and its data sources on the Internet

The annual report is available for downloading in 22 languages on the EMCDDA website. The electronic version contains links to all online sources cited in the annual report.

The following resources are available only on the Internet.

The 2010 statistical bulletin presents the full set of source tables on which the statistical analysis in the annual report is based. It also provides further detail on the methodology used and about 100 additional statistical graphs.

The national reports of the Reitox focal points give a detailed description and analysis of the drugs problem in each country.

Country overviews provide a top-level, graphical summary of key aspects of the drug situation for each country.

The EMCDDA, in close collaboration with national experts, has developed a set of core items for use in adult surveys (the 'European Model Questionnaire' — EMQ). This protocol has now been implemented in most EU Member States. However, there are still differences in the methodology used and year of data collection, and this means that small differences, in particular between countries, should be interpreted with caution.

Surveys are expensive to conduct and few European countries collect information each year, although many collect it at intervals of two to four years. In this report, data is presented based on the most recent survey available in each country, which in most cases is between 2005 and 2008. Prevalence data for the United Kingdom refer to England and Wales, unless otherwise stated, although separate data for Scotland and Northern Ireland are also available.

Of the three standard time frames used for reporting survey data, lifetime prevalence (use of a drug at any point in one's life) is the broadest. This measure does not reflect the current drug use situation among adults, but can be helpful to understand patterns of use and incidence. For adults, the EMCDDA's standard age ranges are 15–64 years (all adults) and 15–34 years (young adults). Countries using different upper or lower age limits include: Denmark (16), Germany (18), Hungary (18), Malta (18), Sweden (16) and the United Kingdom (16–59). The focus is on the last year and last month time frames (use during the last 12 months or last 30 days before the survey) (for more information, see the EMCDDA website). For school students, lifetime and last year prevalence are similar, as illicit drug use before age 15 is rare.

The European school survey project on alcohol and other drugs (ESPAD) uses standardised methods and instruments to measure drug and alcohol use among representative samples of 15- to 16-year-old school students. Surveys have been conducted in 1995, 1999, 2003 and 2007. In 2007, data were collected in 35 countries, including 25 EU Member States, Norway and Croatia.

Treatment demand

In reports on treatment demand, 'new clients' refers to those who have entered treatment for the first time in their lives and 'all clients' refers to all those entering treatment. Clients in continuous treatment at the start of the year in question are not included in the data. Where the proportion of treatment demands for a primary drug is given, the denominator is the number of cases for which the primary drug is known.

Interventions

Information on the availability and provision of various interventions in Europe is generally based on the informed judgement of national experts, collected through structured questionnaires. However, for some indicators, quantitative monitoring data are also available.

Drug law offences

The term 'reports' for drug law offences may describe different concepts in different countries.

Commentary

Old realities, new threats and economic austerity: the current landscape for European drug policy

The need to avoid paying a high price for cost-cutting measures

As Europe enters a period of economic austerity, with rising levels of youth unemployment, there are fears that this may be accompanied by an increase in problematic forms of drug use. Depressed and marginalised communities have always been at elevated risk of experiencing drug problems and the collateral damage of crime and unsafe communities. Europe now faces the double jeopardy that at a time when the need for effective responses may be growing, austerity measures could lead to cuts in provision. Over the last decade, important, if uneven, gains have been made in addressing drug problems. Treatment numbers have grown dramatically and considerable progress has been made in addressing some of the most harmful health consequences of drug use, such as HIV infection. Moreover, studies have demonstrated that interventions can be cost-effective, reducing expenditure on related health, social and crime problems. The risk exists that today's economic situation may provoke policy decisions that result in Europe accruing long-term costs that far outweigh any short-term savings.

In the spotlight: guidelines, frameworks and improving the evidence base for assessing supply reduction

The Lisbon Treaty, which came into force on 1 December 2009, gives new emphasis to the European Union's role in establishing guidelines, indicators and supporting the exchange of best practice in the drugs field. In times of economic austerity, it is particularly important to ensure that expenditure is directed towards interventions of proven effectiveness. The European approach to drugs can be characterised as one in which evidence takes priority over ideology. However, there are still many areas where investments are directed towards approaches that lack robust evidence for effectiveness or have been poorly evaluated, while approaches of proven value are not always implemented. This is an ongoing problem in the prevention field, but not limited to this area. Good programme models exist in many areas of demand reduction, and there is a growing understanding of what is likely to constitute effective action. The challenge is to build the consensus necessary to codify this knowledge into a set of guidelines and frameworks that are sufficiently prescriptive to support service improvement, while still being sensitive to the different contexts found across the European Union.

The public health field is long used to the discipline of having to justify the impact of its interventions. The need to extend this approach to supply reduction activities has become an increasingly common theme in the EU policy debate. Expenditure on supply reduction is often difficult to identify in national budgets, but studies suggest that it is considerable and generally exceeds expenditure on public health responses. Recent Council deliberations concluded that evaluation of supply reduction activities is handicapped by the lack of standard indicators and measures. Establishing key indicators for supply reduction is an objective in the current EU drugs action plan. In 2009, the European Commission and the EMCDDA launched a joint initiative to address this problem, and the identification of key supply indicators and a mechanism for their implementation can be expected in 2011.

Policy perspectives: challenges for the European drug policy model

Virtually all EU Member States have adopted a common approach based on a national drug strategy, usually supported by an action plan, which has concrete targets and is time based. This policy model is a rational one as it allows a regular audit of progress and the opportunity to redirect policy where it is found to be lacking. It is also a demanding approach, as new drug strategies have to be developed, agreed and adopted, often while the old strategy is being evaluated. These difficulties are highlighted in this year's report, where for the first time we report a decrease in the number of countries having a valid national drug strategy in place. This is largely because of the practical challenges of evaluating and renewing national strategy documents that expired in 2008 or 2009. The EMCDDA is working with Member

States to develop policy evaluation tools to allow an ongoing review of drug policy developments. There are no simple solutions to the problem of evaluating drug policies, but it would be a shame if failings in processes and planning undermined an important achievement of the European response to drug problems.

As noted in last year's report, the link between alcohol and drug problems is a strong one. Despite this, no common approach is observable in terms of uniting drug and alcohol policies across the EU Member States. Some countries maintain separate drug and alcohol policies, others link them, and some have not yet developed an alcohol strategy. Strong arguments exist for the need to seek synergies between drug and alcohol policies, not least of which is the fact that they will often be targeting the same populations and settings. Current policy models are also challenged by the growth of the 'legal highs' market, as well as the misuse of pharmaceutical products, as discussed below. From a public health perspective, this highlights the need for a more comprehensive approach, encompassing both illicit and licit substances, and possibly other behavioural addictions. The challenge is two-fold: to consider to what extent this overarching vision is justified, and how this perspective might be translated into an appropriate regulatory and control framework.

New developments in national drug laws reveal commonalities and differences

An example of the differences that exist between EU Member States in policy implementation, even where a general consensus prevails, can be found in the area of penalties for drug offences. In most EU countries, the legal systems take into account the type and 'harmfulness' of the drug in question and whether the offence relates to involvement in the drug market or to personal use or possession for personal use. These distinctions vary greatly between countries. They may also be codified in law or result from processes operating within the criminal justice system. It is unclear what benefits the different approaches bring or what constitutes good practice, suggesting the value of a comparative analysis in this area. Currently, comparisons between countries should be made with caution, as differences between offences may be as much determined by the legal practice of the country in question as the nature of the offence itself. A second question is the extent to which the policy distinction made between those profiting from the sale and transport of drugs and those who are using them is translated into practice. The most recent data show a slightly downward trend in supply-related offences, while the number of use-related offences continues to rise.

Drug treatment: more available than ever, but inequalities evident

Effectively treating those who have problems with their substance use is a central pillar of Europe's response to drugs. It is an area in which both the quality and quantity of care available continues to grow. The EMCDDA estimates that more than a million people annually receive some form of treatment for drug problems in the European Union. Treatment expansion has been led by a growth in specialist outpatient care, supported by low-threshold services and outreach. Importantly, in some countries, drug services combine specialist care with the involvement of primary healthcare services and general practitioners. Some types of drug problems, in particular the more intractable cases, are likely to be best handled by specialist teams. However, an appropriate mix of specialist and generic care can be an important element in increasing the overall availability of care, especially when referral and support channels are well established.

Although treatment provision has increased, inequalities are evident in treatment access across Europe. In most eastern European and some southern European countries, treatment availability is relatively limited, as reflected in long waiting lists. Levels of treatment availability can only be meaningfully assessed in relation to the relative coverage of the population in need of care. It is still difficult to comment with certainty on the extent to which available care meets needs, although some progress has been made in respect to opioid substitution therapy. Overall, the EMCDDA estimates that about 670 000 Europeans now receive opioid substitution treatment, representing about half of the estimated number of problem opioid users. This figure varies greatly between countries, with national estimates ranging from less than 10 % to more than 50 % of problem opioid users receiving care. Differences in the availability of care are further illustrated by the observation that only around 2 % of substitution treatments occur in the 12 Member States who joined the European Union since 2004.

Substitution treatment is also considered a harm-reduction measure. Together with needle and syringe exchange, it has been widely promoted as an important component in a comprehensive HIV prevention strategy for injecting drug users. With overall stable or declining trends in injecting levels and drug-related HIV infection, the European Union's situation in respect to drug-related HIV transmission looks positive in comparison with many parts of the world. The EMCDDA published a scientific monograph on harm reduction in 2010, which charted the mainstreaming of the concept of harm reduction, with both substitution treatment and syringe exchange

now accepted components of European drug policies. The monograph also highlighted the need to improve the evidence base for other harm-reduction interventions and the scarcity of well developed harm-reduction models for problems with stimulant and polydrug use, patterns of use that are becoming increasingly important in Europe. It also noted that responses in Europe are still failing to impact significantly on hepatitis C virus infection among injectors and drug overdose deaths, and that harm-reduction approaches could have an important role to play here.

Developing models of care and response for Europe's evolving drug problem

Current patterns of drug use are challenging services to develop more complex and differentiated needs-based responses, with better linkage to generic health and social care resources. In respect to substitution treatment, this can be seen in an ageing and more chronic group requiring care, a topic addressed in a Selected issue accompanying this report. The need for treatment and other responses for non-opioid related problems is also growing, with increased numbers of cannabis and stimulant users coming into contact with services. Complex patterns of polydrug consumption, which commonly include alcohol-related problems, represent another challenge. Models of care are improving in these areas, although considerable room for improvement still exists for developing and sharing best practice. While purely pharmacological therapy options for stimulant users still appear unlikely, increased research interest in this area has yielded encouraging findings, including a better understanding of the contribution of psychosocial approaches.

Cannabis: regional variations important

Cannabis remains the most popular illicit drug in Europe, but with large differences in prevalence of use observable between countries, illustrated by the fact that the highest estimates reported are more than 30 times greater than the lowest. Overall, trends in consumption show stable or declining levels of use. Within this general long-term picture, however, divergent patterns can be identified. Of particular note are some countries in eastern Europe where consumption levels still appear to be increasing and, in some cases, now rival or exceed prevalence levels found in western Europe.

There is a growing understanding of the public health implications of cannabis use, which mostly focuses on those users reporting daily and chronic patterns of consumption. Recent reviews examining the adverse health consequences of the drug identify a number of effects, including anxiety, panic reaction and psychotic symptoms. These acute effects account for a substantial number of drug-related hospital emergencies in the few countries that monitor them.

At a glance — estimates of drug use in Europe

The estimates presented here relate to the adult population (15–64 years old) and are based on the most recent data available (surveys conducted between 2004 and 2008). For the complete set of data and information on the methodology see the accompanying statistical bulletin.

Cannabis

Lifetime prevalence: at least 75.5 million (22.5 % of European adults)

Last year use: about 23 million European adults (6.8 %) or a third of lifetime users

Last month use: about 12.5 million Europeans (3.7 %)

Country variation in last year use: overall range 0.4 % to 15.2 %

Cocaine

Lifetime prevalence: about 14 million (4.1 % of European adults)

Last year use: 4 million European adults (1.3 %) or a third of lifetime users

Last month use: around 2 million (0.5 %)

Country variation in last year use: overall range 0.0 % to 3.1 %

Ecstasy

Lifetime prevalence: about 11 million (3.3 % of European adults)

Last year use: about 2.5 million (0.8 %) or a quarter of lifetime users

Country variation in last year use: overall range 0.1 % to 3.7 %

Amphetamines

Lifetime prevalence: about 12 million (3.7 % of European adults)

Last year use: around 2 million (0.6 %) or a sixth of lifetime users

Country variation in last year use: overall range 0.0 % to 1.7 %

Opioids

Problem opioid users: estimated at between 1.2 and 1.5 million Europeans

Drug-induced deaths accounted for 4 % of all deaths of Europeans 15–39 years old, with opioids being found in around three quarters

Principal drug in more than 50 % of all drug treatment requests

About 670 000 opioid users received substitution treatment in 2008

In the most recent data, the overall number of new treatment clients with cannabis as the main drug is decreasing in most countries. The factors behind this change are unclear but merit investigation, as it could indicate either a reduced service capacity to accept new clients or a decrease in the number of people being referred to cannabis-related treatment.

Europe's considerable appetite for cannabis is reflected in annual seizures of about 1 000 tonnes of the drug. Overall, the data suggest that cannabis, in its various forms, may be becoming more rather than less available on the European market. Despite indications that domestically produced herbal cannabis has become more common, the quantities of herbal cannabis seized in the European Union have remained stable, while resin seizures have increased. In volume terms, the discrepancy between seizures of cannabis resin and herbal cannabis is in the order of ten to one. Any conclusion on the availability of the different types of cannabis in Europe needs to be made with considerable caution as herbal cannabis is produced closer to its intended market and is therefore less likely to be interdicted. There have also been increasing reports of the involvement of organised crime in domestic cannabis production, prompting new action by both national and European law enforcement bodies.

Understanding Europe's complex market for stimulant drugs

Cocaine remains the second most commonly used illicit drug in Europe, although prevalence levels and trends differ considerably between countries. High and still-increasing levels of cocaine use are observed only in a small number of mostly western European countries, while elsewhere the use of this drug remains limited. Whether this situation will continue or cocaine use will diffuse to other parts of Europe, notably eastern Europe, remains an open question. Worries have been prompted by some evidence that the drug is being increasingly trafficked through the region, as well as by sporadic reports of cocaine use in some settings.

New routes through eastern Europe are not the only issue of concern in relation to cocaine trafficking. The drug continues to enter Europe mainly through the Iberian Peninsula and the Low Countries. However, a relatively new development is the interdiction of secondary extraction facilities that recover cocaine hydrochloride or cocaine base from carrier materials such as beeswax, fertiliser, clothing, herbs, plastics and liquids. Thirty such facilities were reported to Europol by Spain in 2008. This development is indicative of high levels of innovation and technological sophistication among those importing cocaine into the European Union. Because of its high value, cocaine may also be cut or mixed with other substances. The use of levamisole (l-tetramisole) as a cocaine adulterant has been increasingly reported in the United States and Europe, leading to the European early-warning system issuing a warning in 2009. This drug may pose additional health risks to cocaine consumers.

Although drug treatment services in Europe are still dominated by clients with opioid problems, cocaine users now represent about a quarter of new treatment entrants. The majority of these are reported from a small group of countries, principally Spain, Italy and the United Kingdom, and include two distinct groups: socially integrated males who sniff the drug; and marginalised drug users who inject cocaine or use crack cocaine alongside other substances. An additional concern is the increasing mortality associated with cocaine use. About 1 000 cocaine-related deaths are now reported annually, with notable increases in Spain and the United Kingdom, two countries where the use of the drug is long established and at high levels. Although other drugs are generally also found to be present, this rise is worrying, especially given the ongoing concerns about under-reporting of cocaine's role in deaths of users with pre-existing cardiovascular problems.

Use of amphetamines remains overall lower than cocaine use in Europe, but in many countries amphetamine or methamphetamine remains the most commonly used stimulant drug. Problem amphetamine use is mainly reported by countries in the north of Europe, while problem methamphetamine use remains largely restricted to the Czech Republic and Slovakia. This may be slowly changing, however, as methamphetamine production is now also reported in Lithuania and Poland, with production mainly servicing the Scandinavian markets. Here it may be sold as a replacement for amphetamine. Problem amphetamine and methamphetamine use is the topic of a Selected issue that accompanies this annual report.

Opioids and drug injecting

Heroin use, particularly injecting the drug, still accounts for the greatest share of morbidity and mortality related to drug use in the European Union. The number of problem opioid users in Europe is cautiously estimated at 1.35 million, and most treatment entrants still report opioids as their primary drug. Data from a range of sources point to an overall stable to increasing opioid problem in the European Union since 2003/04. Heroin

seizures have increased in number, but not in quantity; although this has to be seen in the context of increasing seizures of the drug in Turkey. Trend data from prevalence estimates appear stable, new treatment demand has been slowly increasing in several countries, drug-induced deaths have increased, as have drug law offences for the last two years. To some extent, this may reflect the long-term nature of opioid problems where, once addicted, users tend to remain dependent for long periods of time. Thus, even a relatively small number of new recruits are sufficient to maintain the overall population. The number of injecting drug users in Europe is estimated to be between 750 000 and 1 million, with large differences in prevalence between countries. Data quality issues mean that this estimate must be treated with considerable caution. Trends in injecting use are particularly difficult to gauge, but data from treatment monitoring suggest that the medium-term trend is downwards and injectors are now in the minority among new opioid users entering treatment services in Europe.

Injecting remains, however, the most common route of administration for opioid users in many eastern European countries. This adds to considerable concern about the public health consequences of drug use in some of the countries neighbouring the European Union. At the eastern border of the European Union, both Russia and Ukraine appear to have levels of problem opioid use two to four times higher than the EU average. The problems associated with opioid use in this region include high rates of HIV infection and drug-induced deaths.

Overdose represents the biggest cause of avoidable mortalilty associated with illicit drug use in Europe, and toxicological analysis shows the presence of heroin in most drug-induced deaths. This underlines again the importance of opioids for understanding the public health impact of drug use in Europe. Since 2003, the number of drug-induced deaths has been increasing in most European countries, as has the age of those dying, suggesting an ageing population of chronic users. Provisional data suggest a modest increase of reported drug-induced deaths in 2008: with estimates of 7 371 cases in 2008 in EU Member States and Norway, as compared to 7 021 in 2007. These estimates are likely to be conservative. It can also be estimated that for each fatal overdose there are 20–25 non-fatal overdoses, or around 150 000 annually in the European Union. Moreover, it is now recognised that non-fatal overdoses may result in significant health damage as well as indicating increased risks of future overdoses. From a public health perspective, one of the most important challenges for drug services in Europe is to develop effective measures for reducing both fatal and non-fatal overdoses. Currently, this challenge is not being met.

'Legal highs': an ongoing challenge for drug monitoring and response

Attempts to identify and respond appropriately to new psychoactive substances struggle to keep pace with a sophisticated, innovative and fast-moving market, which is actively seeking new products and marketing strategies. With 24 new synthetic drugs identified for the first time in Europe, 2009 was a record year for the European early-warning system. This pattern has continued unabated in 2010, with 15 new substances detected by mid-July, including synthetic cathinones, synthetic cannabinoids, as well as new cocaine and amphetamine-like synthetic derivatives.

In July 2010, the scientific committee of the EMCDDA carried out a formal risk assessment of the synthetic cathinone mephedrone. This was prompted by a growing concern that this drug was being marketed as a legal alternative to stimulants like cocaine and ecstasy. The risk assessment was conducted as part of Europe's fast-track mechanism for controlling new psychoactive substances. However, the pace of development in this area is such that not only had some Member States already introduced legislation banning mephedrone, but some websites selling it had already closed down, sometimes to be quickly replaced by sites offering replacement substances.

There is a need to remain vigilant and to be able to respond rapidly to new developments, such as new chemical groups of psychoactive substances identified in 'legal-high' products. This is illustrated by the examples of aminoindanes (methylenedioxyaminoindane, MDAI) and synthetic cocaine derivatives (such as fluorotropacocaine). While still rare, after action was taken against mephedrone in 2010, such substances began to be more frequently detected, and the first reports of users experiencing problems were received by the early-warning system. The EMCDDA is monitoring the availability and possible health impact of these substances.

The example of mephedrone highlights how EU Member States can come under considerable media and public pressure to respond quickly to a potential new threat. The EMCDDA, in close cooperation with Europol and the European Medicines Agency, has been working to provide timely information that is reliable and considered. In this rapidly developing area, there is a growing need to improve Europe's capacity to monitor developments proactively and, in particular, to test and identify the chemical constituents of the product mixtures available

and assess their potential impact on public health. Lack of standard reference material is a problem here. In terms of control strategies, the way these products are produced and marketed makes a strong argument that effective measures will require action at the European level to support national initiatives.

Organised crime recognises the potential of new synthetic substances

Legislating for these new substances is complicated by many factors. Some Member States have introduced generic legislation that covers substances from the same chemical group. This legal option is only available in some countries, and can be difficult to put into practice. Further difficulties arise from the fact that some of these substances may have legitimate non-medical uses, be sold for supposedly legitimate purposes, or be used for research and development purposes by the pharmaceutical industry. That said, even well conceived control measures may not solve all the problems in this area, and the danger exists that they may even increase the momentum for an undesirable transition from a mostly online 'legal-highs' market to one that involves organised crime. Cathinone drugs, such as mephedrone, methylone and MDPV, have all appeared on the illicit market, where they are sold as replacements for cocaine, ecstasy and amphetamine, or as the drugs themselves. Europol has noted the interdiction of a number of large illicit ecstasy production sites that were found to be tabletting mephedrone, and more than 20 European countries reported finding this drug in seizures. It is difficult to predict the extent to which new synthetic drugs will become a major part of Europe's future illicit drug market. Criminal organisations, however, are likely to be quick to recognise the potential of substances that can be bought cheaply in large quantities, can in the future be synthesised relatively easily and are attractive alternatives to controlled drugs.

To 'design' a drug to replace a controlled substance is not a new concept. In the past, though, designer drugs were illicitly produced and marketed directly on the illicit market. An important difference today is that we are seeing a new interaction between the illicit and non-illicit markets, whereby chemicals are legally sourced but then sold as replacements for illicit psychoactive substances.

Things to come: medicinal products, counterfeit drugs and new designer medicines

The United States has a long-established drug problem, and developments in this market have sometimes had implications for Europe. Currently, the misuse of prescription drugs, especially opioids such as OxyContin, is a major concern for US drug policy. In Europe, misuse of prescription drugs, with the exception of opioid substitution drugs, has not been regarded as a major problem. This is partly due to the regulatory framework and prescribing practices, which differ from those of the United States. The potential for misuse is also an issue considered within the European pharmacovigilance system, which operates under the responsibility of the European Medicines Agency, with the collaboration of the EMCDDA on drug misuse issues. The spread of counterfeit medicines, manufactured and sold in place of legitimate products, is a growing problem. In 2009, the early-warning system received reports of substances that were based on slight modifications of the chemical structures of medicines with known abuse potential. The rise of new designer medicines would be an unwelcome addition to the task of ensuring that prescribed medicines are not diverted and misused. It is also another example of how innovation in the illicit market requires a robust and joined-up response from pharmaceutical and drug control regulatory frameworks. This issue is more of a potential threat than an immediate problem, but given the speed at which new developments occur in this area, it is important to anticipate future challenges. The suggestion that in the future we will see increasing numbers of new drugs based on existing pharmaceutical products but intended for non-therapeutic use would be particularly worrying.

Chapter 1
Policies and laws

Introduction

Monitoring and evaluating drug strategies and action plans is an important topic both at national and international levels. Recent developments in this field reported in this chapter include a new monitoring system that is being built up by the United Nations and first results of the implementation of the new EU action plan on drugs. Also described here are some of the achievements and difficulties related to the demanding drug policy evaluation and renewal cycles that most EU Member States have adopted.

Also reviewed in the chapter are the different legal approaches used in Europe to distinguish between drugs. These include the use of a wide range of laws, drug classification schemes and prosecutorial or judicial discretion. Another form of distinction is the threshold quantities that differentiate between personal use and trafficking offences. New data and trends on drug-related public expenditure and recent developments regarding drug-related research in Europe are also covered in this chapter.

International and EU policy developments

Monitoring the UN political declaration and plan of action

At the 2009 session of the United Nations' Commission on Narcotic Drugs (CND), the UN Member States adopted a new political declaration and plan of action to tackle the world drug problem (EMCDDA, 2009a). They also passed a resolution (52/12) to improve data collection, reporting and analysis, in order to monitor the implementation of these new drug policy documents.

In view of difficulties experienced in the final review of the previous 10-year political declaration and action plans, the resolution called for the development of data collection tools and mechanisms to provide reliable and comparable data. High on the list of considerations were the need to encourage better reporting by UN Member States, and the aim to avoid unnecessary duplication with existing international monitoring systems, including those of other UN agencies or of regional bodies such as the EMCDDA.

The new UN data collection tool will merge the Annual Reporting Questionnaire (ARQ), a monitoring tool associated with the UN drug control conventions, with a new set of questions related to the newly adopted political declaration and plan of actions. The new questionnaire should be adopted at the 2011 session of the CND, with the first data collection round implemented shortly afterwards.

Responding to drugs under the Lisbon Treaty

The Treaty of Lisbon, which entered into force on 1 December 2009, is meant to provide the European Union with simplified working methods and voting rules, as well as streamlined and modern institutions ([1]). It also improves the European Union's ability to act in several areas of drug policy.

The trafficking of illicit drugs is addressed in the area of freedom, security and justice (Article 83), which provides for the establishment of minimum rules concerning the definition of criminal offences and sanctions. The Treaty allows for the establishment of a European Public Prosecutor's Office, with the possibility of expanding its power to include serious crime having a cross-border dimension (Article 86). This could, eventually, lead to certain drug trafficking offences being prosecuted at EU level.

The Lisbon Treaty also addresses public health and, as in the past, empowers the European Union to complement the Member States' action to reduce 'drugs-related health damage including information and prevention'. Under the new article on public health, the European Commission may take the initiative, in close contact with the Member States, to establish guidelines and indicators, organise the exchange of best practice and prepare necessary elements for periodic monitoring and evaluation. This reinforces the work carried out by the Commission and the EMCDDA in these areas.

([1]) For more information, see the Treaty of Lisbon on the Europa website.

EU drugs strategy and action plan

The first year of the new EU drugs action plan (2009–12) saw a number of activities carried out. During their presidencies of the European Union, both the Czech Republic and Sweden supported the action plan's implementation with the adoption of Council conclusions. One of these conclusions called for the development of key indicators in the field of drug markets, drug-related crime and supply reduction, a second called for the exchange of good practice, guidelines and quality standards for universal prevention and a third urged the strengthening of the European Union's research capacity on illicit drugs.

The European Commission released a report on the implementation of the Council Framework Decision 2004/757/JHA of 25 October 2004 laying down minimum provisions on the criminal acts and penalties applicable in the field of drug trafficking. The Commission found that, although marking a first step towards a common approach in combating drug trafficking, the framework decision has not brought about a substantial approximation of national laws ([1]). The Commission also published a working paper describing the existing mechanisms for detecting, monitoring and responding to emerging trends in the European Union and proposing guidelines for future work ([2]). In addition, a new project was launched to support the implementation of an EU-wide system for forensic profiling of synthetic drugs ([3]). By providing a kind of 'fingerprint' for the drugs, forensic profiling can help trace manufacturers and chart drug distribution channels. Other activities by the Commission, regarding collaboration with civil society and drug-related research, are described elsewhere in this chapter. The first comprehensive progress review of the implementation of the current EU drugs action plan (2009–12) will be published in late 2010.

Civil society and drug policy

The European Commission's Civil Society Forum on Drugs held its third meeting in March 2009. The European Action on Drugs (see below) was one of the two main topics on the agenda. The other main item was the future of the Forum, with the discussion focusing on practical issues such as the selection of participants and the organisation of meetings. The meeting also considered the future role of the Civil Society Forum on Drugs and whether it should remain an informal exchange platform or become a formal advisory body to the Commission.

Another measure with the aim to involve and mobilise civil society is the European Commission's European Action on Drugs. The project invites authorities, institutions, associations, non-governmental organisations, companies and individuals to make a commitment for a specific action in the drugs field. In this way, the project intends to provide civil society with a platform to increase awareness regarding drugs and the risks related to drug use and to promote dialogue and exchanges of best practice. Some 640 applicants had registered their commitment by early March 2010.

Mobilising civil society should also be one of the key principles for the next EU drugs strategy ([4]). This was stated in the Stockholm Programme adopted by the European Council. The programme provides a framework for EU action on the questions of citizenship, justice, security, asylum and immigration for the area of justice, freedom and security for the years 2010–14.

National drug strategies

New developments

Drug strategies and action plans are now core instruments of national drug policies in Europe. Almost all of the 30 countries monitored by the EMCDDA have adopted such policy documents, which they renew periodically. In 2009, new drug strategies or action plans were adopted by seven European countries (see Table 1), while a further 12 were drafting new national drug policy documents in early 2010 ([5]).

Challenges in renewing drug policy documents

Several countries have recently reported a delay in the renewal of their national drug policy documents ([6]). Five of the countries whose drug strategy or action plan expired in December 2008 had yet to adopt new documents one year later (Italy, Latvia, Lithuania, Portugal, Romania). Similarly, another set of countries with policy documents ending in 2009 had not renewed them during that year. As a result, for the first time since the mid-1990s, Europe is seeing a decrease in the number of countries with a valid national drug strategy or action plan.

([1]) Europa press release MEMO/09/548.
([2]) SEC(2009) 1090 final.
([3]) 13405/09 CORDROGUE 63.
([4]) Improving cooperation with third countries and improving research and information were the two other key principles.
([5]) Czech Republic, Estonia, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovenia, Turkey.
([6]) The term 'national drug-policy document' means any official document approved by a government that defines general principles and specific interventions or objectives in the field of drugs, where officially represented as a drug strategy, action plan, programme or other policy document.

Table 1: Drug policy documents adopted in 2009

Country	Name of policy document	Time span	Scope	Notes
Bulgaria	National strategy for the fight against drugs	2009–13	Illicit drugs	Complemented by an action plan (2009–13)
Ireland	National drugs strategy – interim	2009–16	Illicit drugs	Will be replaced by a substance misuse strategy also covering alcohol
Spain	National drug strategy	2009–16	Illicit drugs, alcohol and tobacco	Complemented by an action plan (2009–12)
Cyprus	National strategy on drugs	2009–12	Illicit drugs	
Hungary	National strategy for tackling the drugs problem	2010–18	Illicit drugs	Will be complemented by action plans
Slovakia	National anti-drug strategy	2009–18	Illicit drugs	Will be complemented by action plans
Croatia	Action plan on combating narcotic drugs abuse	2009–12	Illicit drugs	Second action plan under the national strategy 2006–12

Sources: Reitox national focal points.

The renewal of drug policy documents is a complex process comprising several steps. First, there is the final evaluation of the existing or recently expired strategy or action plan ([7]). Stakeholders, and sometimes the public, are also consulted during the development phase of the new policy. As drug strategies and action plans coordinate the role of various government departments, writing them usually involves the submission of successive drafts to different ministries. Finally, the policy documents must be approved by the government or parliament. Recent reports suggest that it can take between six months and two years to complete the whole process. Against this, the time span for national drug policy documents is generally in the range of four to eight years. This implies that the renewal process, in order to be timely, should sometimes be started shortly after mid-term, or at least several months before the expiry of the existing policy document. Final evaluations, however, cannot be performed until the strategy or action plan is finished, and possibly even later, when its impact might be assessed with epidemiological and other data.

The European Union and several European countries have recently faced the challenge of performing almost simultaneously both the final evaluation of an existing policy document and the drafting of its replacement. As the situation is likely to occur again in the coming years, some suggestions have been made to handle it differently in the future. One is to insert a transitional year between two successive plans or strategies, dedicated to evaluation and policy renewal.

Links between drugs and alcohol strategies

The use of multiple substances — polydrug use — is widespread among European drug users, and almost all patterns of polydrug use include alcohol (EMCDDA, 2009d). Professionals in the fields of prevention, treatment, harm reduction and social reintegration are familiar with the overlap between drugs and alcohol problems, and have worked towards finding practical solutions that address both issues simultaneously. At policy level, however, the situation appears to be more complex (Muscat, 2008).

A review of both drug strategies and alcohol strategies in Europe shows many different national situations including: no national strategy at all; a strategy for illicit drugs but none for alcohol; separate strategies for drugs and alcohol; two interlinked strategies; and a policy document covering both illicit drugs and alcohol. There is also no clear shift towards one of these models. While many countries now seem to adopt an alcohol strategy (European Commission, 2009b) in addition to their drug strategy, other countries have enlarged the scope of their drug policy document, an example being Ireland's decision to include alcohol in a new substance misuse strategy.

The absence of a shared European model and trend reflects the multiple issues that governments have to consider when drawing up strategies on substance use. Reasons for keeping strategies separate include the need to address specifically problems related to alcohol, which are often of a different magnitude to those caused by illicit drugs, or simply acknowledging the legal boundaries between licit and illicit drugs. Conversely, the importance of alcohol use among illicit drug users or the need to adopt public health approaches focusing on lifestyles and behaviours, and not on individual substances, call for a combined strategy. These conflicting issues have

([7]) See the box 'Evaluating national drug strategies and action plans'.

Evaluating national drug strategies and action plans

It is now common practice for European countries to perform a final review or evaluation of their national drug strategy or action plan. Usually, the aim is to assess the level of implementation achieved, as well as the changes in the overall drug situation, in order to develop the next strategy or action plan.

Assessing the logic, relevance and internal consistency of the policy document is a preliminary evaluation step in some countries. Content analysis, sometimes including the development of problem trees or logical frameworks, is used to clarify the policy's underlying theory and also to identify inconsistencies between objectives, actions and needs.

The implementation of the actions foreseen in policy documents is assessed with different methods. In some countries, data are routinely provided by the institutions responsible for implementation. In others, service providers or regional authorities are asked to fill in a questionnaire on the level of implementation and, sometimes, about the difficulties encountered.

The difficulty of establishing the effects of a drug strategy on the drug problem is acknowledged by most evaluators. Nevertheless, a review of the drug situation, based on epidemiological indicators and other health or law enforcement data, is generally provided in conjunction with attempts to link some policy elements with observed changes in the drug situation. Unfortunately, the analysis rarely includes a European comparison, and this has led to some countries connecting declines in cannabis use to the content of their national drugs policy, while data point to a larger international trend.

The interpretation of data is one of the key steps of an evaluation. In some countries, this is the sole responsibility of the national drug coordination body, while in others external evaluators, special commissions or expert groups are mandated to take stock of the data, assess the results and formulate recommendations for the next strategy or action plan.

led some countries to develop pragmatic solutions, such as linking separate drugs and alcohol strategies through an overarching public health strategy or through a single national drugs and alcohol coordination body (e.g. Portugal). Future work in this area will be to assess the qualities of different models of linking drugs and alcohol strategies in Europe.

Public expenditure and social costs

Public expenditure on all aspects of the drugs phenomenon in Europe was estimated at EUR 34 billion in 2005 (EMCDDA, 2008d). This figure includes 'labelled' expenditure, which is planned by government for tasks related to drugs and identified as such in the budget. Labelled expenditure is traced in official accountancy documents. The greater part of drug-related public expenditure is, however, 'unlabelled' — that is, not identified as such in the national budget. Unlabelled expenditure must be estimated by a cost-modelling approach.

Data for different years are only available for labelled expenditures. In 2008, 22 EU Member States reported a total labelled expenditure on the drugs problem of EUR 4.2 billion. For the 16 countries that reported in both 2005 and 2008, total labelled public expenditure rose from EUR 2.10 billion to EUR 2.25 billion. As a proportion of gross domestic product, total labelled expenditure decreased in nine countries, increased in six countries and remained unchanged in one country ([8]).

Public expenditure related to drugs can be classified according to the international classification of the functions of government (COFOG) system. Of the total labelled expenditure categorised by seven reporting countries (EUR 1.82 billion), most came within two government functions: health (60 %) and public order and safety (34 %) (that is, police services, law courts, prisons). This imbalance can be explained by the fact that expenditure on public order and safety tends to be embedded in broader and more general programmes of action against crime (unlabelled expenditure) (EMCDDA, 2008d).

Social costs of drug use

Determining the social cost of drug use reveals the amount that would be saved if drug use were abolished, and identifies the different components of cost and the size of the contribution of each sector in society. This information can help to determine funding priorities. Public expenditure is a fraction of social costs, in the form of direct costs only from the general government perspective. Social costs also include indirect costs (e.g. loss of productivity due to morbidity and mortality) and costs from private stakeholders (e.g. private healthcare).

Social cost studies are time-consuming and expensive. For this reason, information on the social costs of drug use in Europe is scarce. Recent estimates of the social costs of drugs have been made for Finland and the United Kingdom (Scotland). Direct costs related to the use of illicit drugs and misuse of pharmaceuticals in Finland were estimated at between EUR 200 million and EUR 300 million in 2007. Indirect costs were estimated between EUR 500 million and EUR 1 100 million in the

([8]) See Table PPP-10 in the 2010 statistical bulletin.

same year. Social welfare accounted for the largest portion, nearly a third, of all direct costs, followed by the enforcement of public order and safety, which accounted for about a quarter. The largest portion of indirect costs came from the value of life lost due to premature death.

In Scotland, the most recent estimate of the economic and social costs of drug misuse is EUR 5.1 billion in 2006. Half of these costs were attributed to 'wider social costs', including the costs to victims of crime perpetrated by problem drug users and the emotional pain experienced by the families of drug users who have died as a result of their drug use. Of the total social and economic cost, 96 % was attributed to problem drug use and 4 % to recreational drug use.

National legislation

Most European countries have examined or implemented distinctions between drugs in their legal frameworks. Recent examples are the new Czech Penal Code, in which offences of possession for personal use that involve cannabis, or its active component THC, attract a lower maximum penalty than those involving other substances. A similar option was discussed in Estonia in 2009, but 10 of 13 experts interviewed by the Ministry of Justice were against substance-based differentiation of offences and it was decided not to change the law. In the Netherlands, the government accepted the recommendation of the Advisory Committee on Drugs Policy to reconsider the number of schedules.

Legislatures in the European Union have a wide range of distinctions and control measures available, depending on the extent to which the substance is intended for licit marketing and sale due to its commercial, industrial or medicinal properties. A first set of options are controls outside of drug laws, which may be split into three categories: unrestricted sale; restricted sale without medical supervision, and restricted sale with medical supervision. In the first category, consumer protection law has been used to control the sale of certain goods — for example, arguably psychoactive substances by smart shops, or new and not yet controlled substances. The second category refers to restrictions such as age limits of the purchaser, and sometimes the user, or the licensing of sales outlets. This describes alcohol and tobacco control, but may also include cannabis sales in coffee shops in the Netherlands and sale of certain volatile substances in, for example, the United Kingdom. The third category encompasses laws regulating pharmacy sales, including over-the-counter cough and cold remedies, as well as prescription medication. In the last few years, the Czech Republic and the United Kingdom have introduced restrictions on the sale of cold remedies containing pseudoephedrine, as they are purchased to make illicit amphetamines. Medicines law was also used effectively in Austria to restrict the sale of 'Spice' products without criminalising users (EMCDDA, 2009a).

Drug laws offer a second set of options to differentiate substances. These options can be presented in the form of a pyramid of distinctions (Ballotta et al., 2008). At its base is the system of distinction using classification by law. The penalty for a drugs offence officially varies according to the class or harmfulness of the substance involved, as defined by lists which are established in or directly linked to the laws. For example, in Bulgaria, Cyprus, the Netherlands, Portugal, Romania and the United Kingdom, the law instructs or requests the prosecuting authorities to distinguish between types of drugs for any offence; in Spain, Latvia and Malta, the penalty is only varied for a charge of drug trafficking. At the second level of the pyramid, drugs may be equally classified, but the law provides specific exemptions, in

Economic recession and drug problems

The European Commission (2009a) estimates that the current economic downturn is comparable to the 1930s recession. In 2009, the gross domestic product of the EU Member States slumped by 4.0 %, much more than in earlier crises. EU labour markets weakened dramatically, with unemployment increasing by one third (from 6.7 % in 2008) and predicted to reach 11 % in 2010. Employment declined substantially: the creation of 9.5 million jobs in 2006–08 is expected to give way to a loss of 8.5 million in 2009–10.

The consequences of an economic recession on drug use and drug-related problems were examined during the 2010 conference of the International Society for the Study of Drug Policy (ISSDP). One of the overall findings is that there is a wide set of possible impact mechanisms. For instance, more unemployed teenagers may sell drugs and thereby increase the availability and use of cannabis among their peers. Some young adults may also use drugs to cope with stress and economic difficulties, though a decline in income could lead others to cut their expenditure on drugs. Existing drug-related problems can be affected too, either directly, with poorer drug users turning to more efficient and risky routes of administration, or indirectly, through a reduction of services due to cuts in public spending.

Assessing the full impact of the current recession will take time, notably because of the multiple mechanisms described above and because the effects will unfold over years. Now, however, governments that are considering cutting expenditure in the drugs field need to take into account the cost-effectiveness of existing measures.

the form of lower penalties, for the possession of a small amount of cannabis for personal use, without aggravating circumstances, as in Belgium, the Czech Republic, Ireland and Luxembourg. At the third level, distinctions are made according to prosecutorial guidance or judicial precedent. In Denmark, for example, a State Prosecutor directive advises different fines to be requested for possession of different drugs, while in Germany, a Constitutional Court decision, noting the constitutional ban on excessive punishment, calls for less severe measures for minor offences of possession of cannabis for personal use.

The tip of the pyramid of distinctions is formed by prosecutorial or judicial discretion during the implementation of the law. Here, the nature of the substance is one of the criteria considered when deciding not to prosecute an offender or to give a lower punishment. Although the data were limited, the EMCDDA (2009e) found that sentences could differ even when drugs were viewed equally under the law. In the Czech Republic, where all drugs are classed equally by law, 44 % of sentences for heroin offences were prison sentences, compared to 39 % for pervitin (methamphetamine) and 11 % for cannabis. In the United Kingdom, for those given immediate custody, the average sentences for possession offences were five months for cocaine, seven months for ecstasy and 10 months for heroin. The average sentences for trafficking offences (excluding import and export offences) were 29 months for ecstasy and 37 months for cocaine and heroin. Yet these three substances are all in the same class. This suggests that judiciaries perceive differences in the levels of harm or seriousness associated with the various drugs other than any signalled by the legislation.

Threshold quantities that delimit offences, such as those seen for possession for personal use, are an additional element of distinction at all levels of the pyramid. The recent EMCDDA 'Topic overview' on threshold quantities identified significant differences in the legal basis and in the amounts of substances. These thresholds may be established in laws or government or ministerial decrees (e.g. Czech Republic, Greece, Italy, Cyprus, Lithuania, Hungary, Austria), or in prosecutorial guidelines (Denmark, Netherlands, Finland, Norway) or both (Belgium, Portugal) and even in sentencing guidelines (Finland). Thresholds can differ between countries for similar offences; for example, the start of criminal prosecution for possession of cannabis resin may be for any quantity in Lithuania or 6 grams in many German Länder. The thresholds also show no consistency in the relationship between drugs, with the weight threshold for cannabis varying from three times (Cyprus) to 10 times (Netherlands) that of heroin. The weight threshold of cocaine may be equal to that of heroin (e.g. Denmark) or 10 times heavier (e.g. Latvia).

Overall, it appears that distinguishing between drugs in EU Member States is not only a matter of formal classification under drugs laws. It also stems from the type of law used to control drugs, prosecutorial guidelines and judicial precedent, the relative quantity thresholds established and the attitudes of the judiciary when implementing the law.

Drug-related research

Strengthening EU research capacity

Strengthening research capacity in the drugs field has been on the European agenda in recent years. In 2008, the European Commission funded a study 'Comparative analysis of research into illicit drugs in the European Union' and, in September 2009, organised a conference to discuss ways to improve drug-related research capacity in the European Union (9). The study and the discussions offered a number of important insights into the way drug-related research is carried out in Europe.

The bulk of drug-related research in Europe is conducted by the Member States, which set research priorities according to their national needs. This is generally done in the absence of a coherent drug research strategy with dedicated funding. Instead, drug-related research

Research findings and language barriers

Most peer-reviewed research findings are published in English and, for a significant number of European researchers, practitioners and policymakers, this limits their accessibility. The same applies to work published in peer reviewed journals in other languages. In 2008, the EMCDDA identified 27 such journals in Europe, published in Czech, Danish, French, German, Greek, Hungarian, Norwegian, Polish, Portuguese, Spanish and Swedish. Many governmental and non-governmental organisations also provide research results in reports only available in their national languages. Most of this information remains accessible only to a limited number of individuals.

The importance of language barriers was highlighted by the study 'Comparative analysis of research into illicit drugs in the European Union' and also discussed during the Commission's conference 'Bridging the research gap in the field of illicit drugs research in the EU'. As a first step to overcoming such barriers, the EMCDDA developed a research thematic web area, which provides a list of national studies with links to published and unpublished reports.

(9) Documents and presentations of the conference, including a full study report, are available on the conference website.

is usually embedded in health, social science or other programmes. Moreover, the research is heavily biased toward epidemiology and evaluation of interventions, with drug supply and supply reduction as well as policy evaluation being under-represented. Overall, coordination between policy, research and practice also lacks a coherent long-term approach. National research activity is complemented by the seventh framework programme of the European Community for research, technological development and demonstration activities (2007–13).

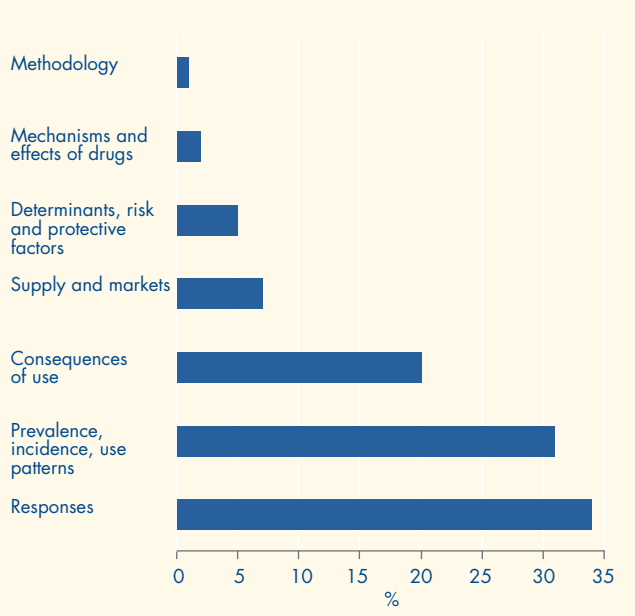
This insight provided input for EU Council conclusions on 'Strengthening EU research capacity on illicit drugs' ([10]), which identify future priorities: research into the cause and nature of, and responses to, drug problems; and evaluation research in both supply and demand reduction. Member States are also invited to strengthen their research capacity and coordination mechanisms and to explore, with the help of the European Commission, opportunities provided by the seventh research framework programme, for instance, the European research area networks (ERA-NET) and Marie-Curie fellowships. Additionally, Member States and the research community are encouraged 'to actively contribute to consultations on the future European research policy and the future objectives of drug-related research under the next EU drugs strategy'. The Council also agreed to establish an annual exchange on drug-related research in order to promote cross-border research cooperation. It acknowledged the need to improve access to research findings for policymakers and professionals, and called on the EMCDDA to provide and disseminate, via its thematic web area on research and its 'Best practice portal', drug-related research information and findings.

Research information from Member States

In their 2009 Reitox national reports, European countries referred to more than 650 research projects undertaken or published between 2007 and 2009, approximately twice as many as in the previous period. This increase was verified in 26 of the 29 reporting countries. The United Kingdom referred to the highest number of research projects (over 100), followed by Germany, the Netherlands and Finland (each with over 50) and the Czech Republic, Ireland and Sweden (over 30).

As in previous years, research on responses to the drug situation and on prevalence, incidence and patterns of drug use each accounted for approximately a third of the recent studies, and the consequences of drug use for a fifth (Figure 1). Compared with last year, about 40 more studies on supply and markets were cited. While this was largely due to a special data collection on cannabis markets coordinated by the EMCDDA in 2009, it also indicates a growing interest in studies in the supply area.

Figure 1: Research subjects of national drug-related studies cited in the 2009 Reitox national reports (percentage of all studies cited)



NB: Some 29 Reitox national reports (2009) were surveyed for references to drug-related studies in the period 2007–09. The studies were categorised according to the context in which they were cited.

Source: Reitox national reports (2009).

([10]) Available on the 'Drug-related research' thematic page on the EMCDDA website.

Chapter 2

Responding to drug problems in Europe — an overview

Introduction

This chapter presents an overview of the responses to drug problems in Europe, where possible highlighting trends, developments and quality issues. Prevention measures are first reviewed, followed by interventions in the areas of treatment, harm reduction and social reintegration. Taken together, all these measures form a comprehensive drug demand reduction system. They can be considered as complementary, and are sometimes provided in combination and by the same facilities. This is, for example, increasingly the case for treatment and harm-reduction measures.

The responses developed in the framework of drug law enforcement are also addressed in a section which includes the most recent data on drug law offences. The chapter ends with a review of the available data on the needs of drug users in prisons and the existing responses in this particular setting.

Prevention

Drug prevention can be divided into different levels or strategies, which range from targeting society as a whole (environmental prevention) to focusing on at-risk individuals (indicated prevention). Ideally, the different strategies do not compete but complement each other. The main challenges for prevention policies are to match these different levels of prevention to the degree of vulnerability of the target groups (Derzon, 2007) and to ensure that interventions are evidence-based and sufficient in coverage.

Environmental strategies

Environmental prevention strategies aim at altering the immediate cultural, social, physical and economic environments in which people make their choices about drug use. These strategies typically include measures such as smoking bans, alcohol pricing or health promoting schools. Evidence shows that environmental prevention measures at societal level and targeting the social climate in schools and communities are effective in altering normative beliefs and, consequently, substance use (Fletcher et al., 2008).

Partial or full smoking bans are now implemented in almost all European countries, and tobacco advertisement is banned by an EU directive of 2003 (2003/33/EC). Proposals of minimum pricing for alcohol and clampdowns on alcohol promotion are also being debated in several European countries. Efforts to develop positive and protected school climates, including strict rules regarding substance possession and use, were reported in 2009 by 10 EU Member States. Countries in the north of Europe have also developed the concept of positive protected environments at community level, for example through municipal alcohol action plans.

Universal prevention

Universal prevention addresses entire populations, predominantly at school and community levels. It aims to deter or delay the onset of drug use and drug-related problems by providing young people with the necessary competences to avoid initiation into substance use. Evidence shows that well-designed and structured universal prevention interventions can be effective. A recent example of this is a Dutch combined school–parents programme that reduced alcohol use (Koning et al., 2009). For other interventions, notably mass media campaigns, there is little evidence for effectiveness, and some studies have observed detrimental effects. Despite this, a majority of European countries still report allocating resources to warning campaigns.

School-based universal prevention is reported in all European countries, although with varying content and levels of coverage. Information provision followed by life skills training are the two main intervention types provided. Structured intervention protocols ('programmes') are still relatively scarce. The need to improve school-based universal prevention is increasingly recognised in Europe. Eleven EU Member States report, for example, on efforts to define prevention standards.

Selective prevention

Selective prevention intervenes with specific groups, families or communities which, due to their scarce social ties and resources, may be more likely to develop drug use

or progress into dependency. Because of the difficulty of implementing experimental evaluation designs, evidence of the effectiveness of selective prevention is still limited. This does not apply, however, to interventions for vulnerable families, which have been shown to be effective in different studies (Petrie et al., 2007). Recent examples in this area include an adaptation of the 'strengthening families programme' evaluated in Spain, which was found to be effective in reducing predictors for drug use, such as disruptive behaviour at school and depression symptoms. Positive results were also reported in the United Kingdom, with reductions in risks to children, reported cases of antisocial behaviour, educational issues, youth crime, domestic violence, mental and physical health problems and substance misuse among the first 699 families to have completed 'Family intervention projects'.

European countries report, on average, limited provision of selective prevention, with most interventions targeting young offenders, vulnerable families and ethnic groups. Overall, the data indicate that the coverage of selective prevention has not increased in recent years. There may be some exceptions to this observation, such as interventions for vulnerable families in some countries and FreD, a systematic intervention protocol for young offenders, which is now implemented in over a third of EU Member States.

Indicated prevention

Indicated prevention aims to identify individuals with behavioural or psychological problems that may be predictive for developing substance use problems later in life, and to target them individually with special interventions. Indicated prevention programmes are usually evaluated, and often show high levels of effectiveness (EMCDDA, 2009c). Overall, interventions in this field remain limited, with six countries reporting interventions for children with attention-deficit/hyperactivity disorder or disruptive behaviour and 10 countries reporting early intervention and counselling to individuals who have started using drugs. One recent development is the Dutch 'Cannabis show', which is based on an existing cannabis prevention programme (entertaining peer education) and is carried out in a school for young people with behavioural and other psychiatric problems.

Treatment

In Europe, the main modalities used for the treatment of drug problems are psychosocial interventions, opioid substitution and detoxification. The relative importance of the different treatment modalities in each country is influenced by several factors, including the organisation of the national healthcare system.

There is no data set allowing a description of the full population of drug users currently undergoing drug treatment in Europe. Information on an important subgroup of this population is, however, gathered by the EMCDDA's treatment demand indicator, which collects data on those entering specialised drug treatment services ([11]). In 2008, the indicator registered about 440 000 treatment entrants, 40 % of whom were entering drug treatment for the first time in their life.

Based on a range of different sources, including the treatment demand indicator, a conservative estimate is that 1 million people received treatment for illicit drug use in the European Union during 2007. Of these, more than half

Learning from prevention trials

The effectiveness of European prevention measures remains poorly researched ([1]). Universal and indicated prevention in school settings are the areas receiving the most attention. In parallel, there is a debate about the transferability of research findings from other parts of the world, mainly from the United States.

The EU-DAP study, a European multicentric trial involving about 7 000 pupils aged 12–14 in seven EU Member States, is contributing to the development of prevention research and shows that interventions can have similar results within Europe and across different continents.

Significant risk reduction for tobacco, alcohol and cannabis use after one year was reported for 'Unplugged', a 12-session programme. 'Unplugged' aims to correct normative beliefs about substance use, while also providing life-skills training and substance information. Persistent beneficial effects at 18 months follow-up were also found for episodes of drunkenness and frequent cannabis use in the past 30 days, whereas the short-term effect on daily cigarette smoking faded out (Faggiano et al., 2010).

A mediation analysis showed that outcomes on cannabis use were mostly due to the correction of normative beliefs, of positive expectancies towards the substance and of positive attitudes towards illicit drugs. Strengthening skills in communication, decision-making and refusal was less effective.

European and American researchers are now conducting parallel analyses with EU-DAP and other data in order to understand how children and adolescents respond to prevention in different contexts. The differential influence of gender, social context and psychological characteristics are particularly explored.

([1]) This has led to the foundation of the European Society for Prevention Research.

([11]) The treatment demand indicator received data from 29 countries for specialised drug centres, with a coverage of more than 60 % of units in most countries (see Table TDI-7 in the 2010 statistical bulletin).

received opioid substitution treatment. Germany, Spain, France, Italy and the United Kingdom accounted for nearly 80 % of the drug users in contact with treatment.

This estimate of drug treatment in the European Union, though in need of refinement, suggests a considerable level of treatment provision. It also highlights the great increases that have taken place in treatment provision since the mid-1990s, when greater availability and better access to drug treatment became priorities of drug policy. The past two decades have witnessed the expansion of specialist outpatient services and the development of outreach and low-threshold approaches. Several countries scaled up their substitution treatment by involving additional service providers, such as general practitioners. As a result, the number receiving substitution treatment in Europe has grown almost 10-fold since 1993 ([12]). Changes in treatment provision were also prompted by new client groups, such as cannabis and stimulant users, which have accessed treatment in growing numbers during the last 15 years.

While it has become more available in many countries, there are still barriers impeding or discouraging drug users from accessing either drug treatment or some of its modalities. These barriers include regulations such as stringent admission criteria and legal frameworks, treatment costs for patients, lack of trained staff or low geographical density of treatment providers. Other obstacles faced by drug users in need of treatment include inadequate opening hours, requirement of daily attendance and lack of childcare support (e.g. during inpatient treatment), which conflict with their personal and professional situation. Personal beliefs and preconceptions, among both professionals and drug users, regarding the appropriateness, effects and results of specific treatment approaches can also impede treatment access.

Extended waiting times for drug treatment can be one of the consequences of barriers to treatment access. According to information provided by national experts in 2008, limited availability of treatment and lack of resources, as well as delays due to procedural reasons, are the main causes for the existing waiting times, which differ between treatment modalities (see below).

Outpatient treatment

Information is available on about 383 000 drug users entering outpatient treatment in Europe during 2008. Most of these drug users entered treatment in specialised drug treatment services, and only a few countries reported on those entering treatment with a general practitioner or in low-threshold services. More than half of the treatment entrants (53 %) report opioids, mainly heroin, as their primary drug, while 22 % report cannabis and 18 % cocaine ([13]). The most common route to treatment is self-referral (36 %), followed by referral by the criminal justice system (20 %). The remaining clients are referred through social and health services or informal networks, including family and friends ([14]).

Clients entering outpatient treatment are predominantly young men, with an average age of 31 years and males four times as numerous as females. Clients entering treatment for the first time and female clients are on average slightly younger. Younger average ages are also reported for cannabis clients (25) and those using stimulants other than cocaine (29), while older mean ages are reported for primary users of cocaine (32) and opioids (34). On average, the youngest drug clients are reported by the Czech Republic (26) and the oldest by Spain (33) ([15]). Male to female ratios are highest among cannabis (5:1) and cocaine (4.8:1) clients and lowest for those using stimulants other than cocaine (2.2:1). Regardless of the primary drug, gender ratios are highest in countries in the south of Europe and lowest in countries in the north ([16]).

The two main modalities of outpatient treatment in Europe are psychosocial interventions and opioid substitution treatment. For opioid users, they are often provided in combination. Psychosocial interventions offer support

EMCDDA 'Selected issue' on treatment and care for older drug users

The number of older drug users in Europe is predicted to double between 2001 and 2020 and adequate and innovative approaches will be required for the treatment and care of this growing population. A 'Selected issue' published this year by the EMCDDA examines the development and causes of this ageing phenomenon over the last two decades. The health and social characteristics of older drug users are also presented in order to specify their current needs. The report ends with an overview of current interventions for older drug users and best practices in Member States.

This 'Selected issue' is available in print and on the EMCDDA website in English only.

([12]) See Figure HSR-2 in the 2010 statistical bulletin.
([13]) See Table TDI-19 in the 2010 statistical bulletin.
([14]) See Table TDI-16 in the 2010 statistical bulletin.
([15]) See Tables TDI-10 and TDI-103 in the 2010 statistical bulletin.
([16]) See Table TDI-21 in the 2010 statistical bulletin.

to users as they attempt to manage and overcome their drug problems. These interventions include counselling, motivational enhancement, cognitive-behavioural therapy, case management, group and family therapy and relapse prevention. They are mostly provided, depending on the country, by public institutions or by non-governmental organisations. In 2008, experts from nine of the 27 reporting countries estimated that there is no waiting time for this type of treatment. In 10 other countries national experts estimated that average waiting times are no longer than one month. In Norway, the average waiting time is estimated to be 10 weeks, while Denmark requires by law that treatment takes place within 14 days. Experts from seven countries could not provide an estimate.

Substitution treatment is the predominant treatment option for opioid users in Europe. It is generally provided in outpatient settings, though in some countries it is also available in inpatient settings and is increasingly provided in prisons ([17]). Opioid substitution is available in all EU Member States, as well as Croatia and Norway ([18]). In Turkey, substitution treatment has yet to be introduced, though it is permitted under a 2004 regulation on treatment centres. In most countries, specialised public outpatient services are the main providers of substitution treatment. However, office-based general practitioners, often in shared-care arrangements with specialised centres, play an increasing role in the provision of this type of treatment. These providers are, at different levels, involved in 13 countries.

In 2008, about 670 000 opioid users are estimated to have received substitution treatment in Europe ([19]). Experts from 10 of the 26 reporting countries estimated that there is no waiting time for this type of treatment. In four countries (Czech Republic, Denmark, Italy, Portugal), the average waiting time was estimated to be less than one month. In the Czech Republic, waiting times only apply to methadone, since high-dosage buprenorphine can be prescribed by office-based general practitioners — although the client has to cover the costs of the medication. In another four countries (Hungary, Romania, Finland, Norway), the estimated waiting time ranges between one and six months, while in a further three countries (Bulgaria, Greece, Poland) it is over one year. Among these, Greece reports an average waiting time of 38 months, with data showing 5 261 problem opioid users registered as waiting for admission to substitution programmes in 2008. National average waiting times may, however, mask considerable regional variation. For example, in Ireland the average waiting time for substitution treatment varies from less than 3.5 months in Dublin to 18 months in the south-east (Comptroller and Auditor General, 2009). Experts from four countries could not provide an estimate of waiting times.

Inpatient treatment

Data are available for about 42 000 drug users who have entered drug treatment in inpatient settings in Europe during 2008. More than half of them report opioids as their principal drug (57 %), with most of the other clients identifying their principal drug as either cannabis (13 %), stimulants other than cocaine (13 %) or cocaine (7 %). Inpatient clients are mainly young men, with a mean age of 30 years and a male to female ratio of 3.5:1 ([20]).

Inpatient or residential treatment requires clients to stay overnight for a duration of several weeks to several months. In many cases, these programmes aim to enable clients to abstain from drug use and do not allow substitution treatment. Drug detoxification, a short-term, medically supervised intervention aimed at resolving the withdrawal symptoms associated with chronic drug use, is sometimes a prerequisite to initiate long-term, abstinence-based inpatient treatment. Detoxification is usually provided as an inpatient intervention in hospitals, specialist treatment centres or residential facilities with medical or psychiatric wards.

In inpatient settings, clients receive accommodation and individually structured psychosocial treatments and take part in activities geared towards rehabilitating them into society. A therapeutic community approach is often used in this context. Inpatient drug treatment is also provided by psychiatric hospitals, notably for clients with co-morbid psychiatric disorders.

Access to inpatient psychosocial treatment is rated as immediate by national experts from Greece, Hungary and Turkey. Experts estimate the average waiting time to be less than one month in 12 countries and 25 weeks in Norway. In Austria, the waiting time is reported to be up to several months, depending on region and treatment facility. Experts from 10 countries did not provide an estimate of the waiting time for this type of treatment.

Detoxification is considered to have no waiting time by experts from Hungary, Slovenia, Slovakia, Turkey and the Flemish Community in Belgium. In 11 countries, the estimated average waiting time is less than two weeks. An average waiting time of two weeks to one month is estimated in Cyprus, the Czech Republic and Greece,

([17]) See 'Assistance to drug users in prison', p. 37.
([18]) See Tables HSR-1 and HSR-2 in the 2009 statistical bulletin.
([19]) See Table HSR-3 in the 2010 statistical bulletin.
([20]) See Tables TDI-7, TDI-10, TDI-19 and TDI-21 in the 2009 statistical bulletin.

while in Ireland, Austria and Norway it is estimated at between one and three months. Experts from five countries did not provide an estimate.

Quality assurance

Actions addressing the quality of drug treatment are currently being undertaken by most European countries. These actions include the development and implementation of guidelines, the adoption of national drug action plans which address treatment quality issues, quality certification and accreditation processes, and studies investigating quality differences between treatment centres or benchmarking them.

Recent developments include the implementation of guidelines for treatment quality in six countries, while Cyprus, Turkey and Norway have recently published such guidelines. Ten countries adopted new strategic documents, in some cases entailing accreditation systems. Poland and Slovakia also introduced accreditation criteria for treatment centres, with Slovakia introducing ISO 9001 certification. Four countries — Estonia, Latvia, the Netherlands and Romania — are investigating heterogeneity in the quality of service across their treatment system.

The United Kingdom has a long history of assessing the health system and one of the widest sets of instruments to monitor and improve treatment quality. This now includes a document on clinical governance in drug treatment (NTA, 2009) that addresses lines of responsibility and accountability, quality improvement, risk management policies and procedures to identify and remedy poor performance.

A study commissioned by the EMCDDA identified 60 national treatment guidelines in 17 out of 22 reporting countries in Europe. The modalities most frequently covered by the guidelines are psychosocial treatment (29), opioid substitution treatment (28) and detoxification (22). Countries with high numbers of patients in opioid substitution treatment appear to be more likely to have developed treatment guidelines for each modality.

Seventeen countries report guidelines specifically for the treatment of opioid users. Five countries have guidelines targeting the use of different substances, while Hungary and Germany have guidelines for amphetamines and cannabis use disorders. Ten countries address long-term problem drug users and nine have developed guidelines for young drug users. Eight countries also address drug users with co-occurring disorders.

Almost all guidelines target treatment professionals (58) and service providers (52), and close to half of them target healthcare planners (25). Portugal is the only country reporting guidelines targeting clients, while Denmark reports targeting policymakers. Treatment professionals were involved in developing the guidelines in 17 countries, and other professionals in four countries. Researchers also participated in nine countries, policymakers in three and clients in one. More information regarding national treatment guidelines is provided on the EMCDDA's 'Best practice portal'.

Harm reduction

The prevention and reduction of drug-related harm is a public health objective in all Member States and in the EU drugs strategy ([21]). Reviews of the scientific evidence of harm-reduction interventions, as well as studies showing the combined impact of these interventions, are now also available for service planning (EMCDDA, 2010a). Among the main interventions in this field are opioid substitution treatment and needle and syringe exchange programmes, which target overdose deaths and the spread of infectious diseases. These measures are reported to be available in all countries except Turkey. While considerable differences exist in the range and levels of service provision (see Chapters 6 and 7), the general European trend is one of growth and consolidation of harm-reduction measures.

Most European countries provide a range of further healthcare and social services, including those that are recommended by the WHO, UNODC and UNAIDS (2009), as part of a 'comprehensive package' for HIV

New EMCDDA monograph on harm reduction

'Harm reduction: evidence, impacts and challenges' was published in 2010 by the EMCDDA. The monograph provides a comprehensive overview of this field through 16 chapters authored by more than 50 European and international experts. The first part of the monograph looks back at the emergence and diffusion of harm reduction and explores the concept from different perspectives, including those of international organisations, researchers and drug users. A second part is dedicated to current evidence and impacts and illustrates how the concept has broadened to cover a wide range of behaviours and harms, including those related to alcohol, tobacco and recreational drug use. The last part addresses challenges and innovations, and the necessity to integrate and match interventions to individual and social needs.

This publication is available in print and online on the EMCDDA website in English only.

([21]) COM(2007) 199 final.

prevention among drug injectors. The interventions routinely offered depend on the national context, but include individual risk assessment and advice, targeted information and safer-use education, distribution of injecting equipment other than needles and syringes, promotion of condom use among injecting drug users, infectious disease testing and counselling, antiretroviral treatment and vaccination against viral hepatitis. Many of these services are provided at low-threshold agencies. Harm-reduction responses aimed at preventing drug induced deaths are, however, scarce ([22]), despite an increasing awareness of the need for such interventions. New initiatives in this field include early warnings or alerts about substances associated with higher risks ([23]). For example, all low-threshold facilities in the Czech Republic were notified in 2009 about a possible penetration of fentanyl into the local drug market.

Following recent improvements in the treatment of hepatitis C, most countries are now increasing their efforts to prevent, detect and treat hepatitis among drug users, including those in substitution treatment. Recent examples of this include: the new national hepatitis plan in France; a pilot study to develop recommendations for HCV prevention in Germany; and hepatitis treatment guidance in the Czech Republic, the Netherlands and the United Kingdom. Studies and screening campaigns in prison settings are also reported by several countries, including Belgium, France, Luxembourg and Hungary.

The focus of harm-reduction responses has expanded beyond the HIV/AIDS epidemic into the broader perspective of catering for the health and social needs of problem drug users, especially those who are socially excluded. The incorporation of harm reduction into the response to drugs has also advanced the collection of data on the drug problem. National inventories of services and studies of service quality (Czech Republic, Germany, Ireland, Finland) and client surveys (Estonia, Lithuania, Luxembourg, Hungary) provide a better insight into service provision and users' needs. It also helps to promote quality assessment and exchange of best practice, to improve prevention materials and techniques and to develop new interventions.

Social exclusion and reintegration

Social reintegration is recognised as an essential component of comprehensive drug strategies. It can be implemented at any stage of drug use and in different settings, and includes capacity building, improvement of social skills and measures to facilitate and promote employment and to obtain or improve housing. In practice, reintegration programmes may include vocational counselling, work placements and housing support. Prison based interventions, which have an impact on relapse and reoffending, may link inmates to community based housing and social support services in preparation for their release. In general, the outcomes of social reintegration measures often rely on efficient collaboration between health and social care institutions.

Although there is no direct causal relationship between the more problematic forms of drug use and social exclusion, they are often associated. Data show that homelessness affected 9 % of clients entering outpatient drug treatment and about 13 % of those entering inpatient treatment in 2008. About 40 % of clients entering treatment in both settings had not completed their secondary education, while 47 % of those entering outpatient and 71 % of those entering inpatient treatment reported to be either unemployed or economically inactive ([24]). This may not improve under the current economic situation, where growing unemployment rates increase competition in the labour market ([25]).

All reporting countries mention the availability of housing, education and employment programmes and services. These are either targeted specifically at drug users or address the needs of socially excluded groups in general. Ireland and Sweden are discussing the 'housing first model' for homeless individuals with mental health and substance problems. This model is often associated with integrated community treatment and social services and with case management. Access to accommodation is not contingent upon being sober and drug-free, as it normally is for this problematic group. The housing first approach has shown positive outcomes for homeless people across a number of social and health variables, including substance use (Pleace, 2008).

Improving employability and access to paid work plays an important role in the social reintegration of drug users. Countries such as Germany, Italy, Austria, Portugal and the United Kingdom have increasingly prioritised employment-related aspects of the recovery process through new initiatives and increased funding allocations.

Drug law enforcement and drug law offences

Drug law enforcement is an important component of national and EU drug policies and includes a wide range

([22]) See Table HSR-8 in the 2010 statistical bulletin.
([23]) See the box 'Anthrax outbreak among heroin users in the United Kingdom and Germany' in Chapter 7.
([24]) See Tables TDI-12, TDI-13 and TDI-15 in the 2010 statistical bulletin.
([25]) See the box 'Economic recession and drug problems' in Chapter 1.

of interventions that are mainly implemented by police and police-like institutions (e.g. customs). Data on drug law enforcement activities are often less developed and accessible than those in other areas of drug policy. Notable exceptions are data on drug law offences, which are reviewed in this section. Also examined here are recent law enforcement measures to tackle commercial cannabis production and new developments in international collaboration in combating drug trafficking.

Drug law enforcement

In 2010, Europol opened an 'analysis work file' on cannabis ([26]). The project includes a component on cannabis cultivation, which is intended to enhance the sharing of intelligence within the European Union regarding the involvement of organised crime in cannabis production. This follows the reporting by the national law enforcement agencies of at least seven countries that criminal organisations were involved in commercial cannabis cultivation, an activity that apparently can be very lucrative ([27]).

It is difficult to estimate the scope of illicit cannabis cultivation in Europe, as data are very limited on the number of growers and on the size of plantations. Qualitative studies and seizure data (see Chapter 3) suggest that domestic production might have increased substantially since the 1990s, especially in western Europe. Qualitative studies show that the motivations of growers range from cultivating a few plants for personal use to producing several thousand plants for commercial purposes.

Commercial cannabis cultivation, especially in large indoor plantations, has been reported to pose crime and public safety problems in Belgium, Germany, the Netherlands and the United Kingdom. Criminal organisations in the United Kingdom are reported to exploit young illegal immigrants from Asia. Furthermore, the setting up of commercial plantations inside buildings often entails converting the premises, which may damage the property. A further risk to property and safety is related to the heavy consumption of electricity to provide artificial light to cannabis plants grown indoors. Unsafe methods to bypass electricity meters — to avoid payment or raising suspicion — or ill-adapted wiring systems are reported to have caused fires in indoor plantations.

Cannabis cultivation is addressed within existing law enforcement frameworks against drugs and organised crime, but some European countries have recently developed specific strategies in this area. Belgium has made combating illegal cannabis production a priority of its National Security Plan 2008–12, while the Netherlands and the United Kingdom have developed multifaceted strategies to increase the detection and destruction of commercial plantations. These strategies include measures such as raising awareness among the general population and some key sectors (e.g. electricity suppliers, hardware shops) to encourage them to report cannabis plantations to the police. In addition, partnerships are established between law enforcement and electricity suppliers, housing authorities, insurance companies and other sectors interested in fighting commercial plantations. Steps are also taken to improve police efficiency. In the Netherlands, for example, an 'organised cannabis cultivation taskforce' was established in July 2008 to coordinate existing efforts by police, local governments, magistrates and the tax office. Police forces can now be equipped with detection technology generally used by the military, including infrared cameras for thermal imaging, and conduct larger operations to destroy plantations and arrest suspects, such as 'Operation Mazurka' in Northern Ireland, which resulted in 101 arrests in 2008.

Measures targeting cannabis cultivation have also been reported in other countries. For example, a major operation against 'cannabis factories' was conducted in 2008 in Ireland, while in Germany the federal criminal police (Bundeskriminalamt) set up a special unit to report on cannabis offences throughout the country.

Drug law offences

Initial reports on drug law offences, mainly from the police, are the only data on drug-related crime routinely available in Europe ([28]). These data usually refer to offences related to drug use (use and possession for use) or drug supply (production, trafficking and dealing), although other types of offences may be reported (e.g. related to drug precursors) in some countries.

Data on drug law offences are a direct indicator of law enforcement activity, since they refer to consensual crimes which usually go unreported by potential victims. They are often viewed as indirect indicators of drug use and drug trafficking, although they include only those activities that have come to the attention of law enforcement. They are also likely to reflect national differences in legislation, priorities and resources. Furthermore, national information systems differ across Europe, especially in relation to

([26]) An analysis work file is essentially a secured database containing information provided by participating countries, under strict confidentiality rules. It allows Europol to support national law enforcement forces.

([27]) See the box 'Revenues and profits from illicit cannabis cultivation' in Chapter 3.

([28]) For a discussion of the relationships between drugs and crime and a definition of 'drug-related crime', see EMCDDA (2007a).

Development of interagency platforms in Europe

The concept of interagency platforms, where law enforcement and military agencies from different countries share intelligence and coordinate seizures of drugs before they reach user markets, originates in America. The Joint Interagency Task Force-South (JIATF-S), set up in Panama in 1994 and now based in Key West (Florida), is a model for this form of cooperation. JIATF-S, a military-led platform, coordinates air and maritime interdiction activities south of the United States by US military, intelligence and law enforcement agencies, and by associated countries including Spain, France, the Netherlands and the United Kingdom.

Within Europe, two interagency platforms, both law enforcement-led, were recently established to coordinate actions against drug trafficking. The Maritime Analysis and Operations Centre-Narcotics (MAOC-N) was created in 2007, within the framework of the European Union, by a treaty between Ireland, Spain, France, Italy, the Netherlands, Portugal and the United Kingdom. MAOC-N is based in Lisbon and coordinates the interdiction of drug shipments transported across the Atlantic. JIATF-S was associated with the MAOC-N project at the outset, and is now an observer alongside the European Commission, Europol, Germany, Greece, Canada, Morocco, UNODC and, recently, Cape Verde. The second interagency platform, the Centre de Coordination de la Lutte Anti-Drogue en Méditerranée (CeCLAD-M), was established in 2008. CeCLAD-M is a unit of the French police, bringing together representatives of French law enforcement agencies and the navy, as well as representatives from Greece, Spain, Italy, Cyprus, Portugal, the United Kingdom, Morocco and Senegal. The Centre is based in Toulon and may propose the interception of suspect vessels and aircraft in the Mediterranean Sea.

Similar platforms may be set up in the future in the eastern Mediterranean and Black Sea areas. The European Commission also recently sponsored a study to explore the feasibility of establishing a European intelligence-sharing and capacity-building platform in West Africa.

recording and reporting practices. For these reasons, it is difficult to make valid comparisons between countries, and it is more appropriate to compare trends rather than absolute numbers.

An EU index, based on data provided by 21 Member States that represent 85 % of the population aged 15–64 in the European Union, shows that the number of reported drug law offences increased by an estimated 35 % between 2003 and 2008. If all reporting countries are considered, the data reveal upward trends in 15 countries and a stabilisation or an overall decline in nine countries over the period ([29]).

Use- and supply-related offences

There has been no major shift in the balance between drug law offences related to use and those related to supply compared to previous years. In most (23) European countries, offences related to drug use or possession for use continued to comprise the majority of drug law offences in 2008, with Estonia, Spain, France, Austria, Slovenia and Sweden reporting the highest proportions (81–92 %). Offences related to supply are, however, predominant in the Czech Republic (87 %) ([30]).

Between 2003 and 2008, the number of drug law offences related to use increased in 19 reporting countries, with only Bulgaria, Germany, Greece, Austria and Slovenia reporting a decline across the period. Overall, the number of drug law offences related to use in the European Union increased by an estimated 37 % between 2003 and 2008 (Figure 2).

Offences related to the supply of drugs also increased during the period 2003–08, but at a much lower pace, with an increase of about 10 % in the European Union. Over this period, 17 countries report an increase in supply-related offences, while eight countries report an overall decline ([31]).

Trends by drug

Cannabis continues to be the illicit drug most often mentioned in reported drug law offences in Europe ([32]). In the majority of European countries, offences involving cannabis accounted for between 50 % and 75 % of reported drug law offences in 2008. Offences related to other drugs exceeded those related to cannabis in only three countries — the Czech Republic and Latvia with methamphetamine (57 % and 33 %) and Lithuania with heroin (26 %).

In the period 2003–08, the number of drug law offences involving cannabis increased in 15 reporting countries, resulting in an estimated increase of 29 % in the European Union (Figure 2). Downward trends are reported by Bulgaria, the Czech Republic, Germany, Italy, Austria and Slovenia ([33]).

Cocaine-related offences increased over the period 2003–08 in 17 reporting countries, while Bulgaria, Germany, Italy and Austria reported decreasing trends. In

([29]) See Figure DLO-1 and Table DLO-1 in the 2010 statistical bulletin.
([30]) See Table DLO-2 in the 2010 statistical bulletin.
([31]) See Figure DLO-1 and Table DLO-5 in the 2010 statistical bulletin.
([32]) See Table DLO-3 in the 2010 statistical bulletin.
([33]) See Table DLO-6 in the 2010 statistical bulletin.

the European Union, overall, offences related to cocaine increased by about 45 % over the same period, showing a levelling off in the last year ([34]).

The change from a downward to an upward trend reported last year in heroin-related offences is now confirmed: the EU average for such offences increased by 39 % in 2003–08. The number of heroin-related offences has increased in 16 reporting countries, while a decline was reported in Bulgaria, Germany, Italy and Austria over the same period ([35]).

The number of offences related to amphetamines reported in the European Union continues to show an upward trend, with an estimated increase of 24 % between 2003 and 2008. Ecstasy-related offences, in contrast, have decreased by an estimated 35 % over the same period (Figure 2).

Health and social responses in prison

On a given day, there are over 600 000 people in penal institutions in the European Union ([36]), giving an average rate of about 120 prisoners per 100 000 population ([37]). National prison population rates range from 66 to 285 prisoners per 100 000 inhabitants, with most Member States from central and eastern Europe reporting higher than average rates. Nevertheless, the national figures and the EU average remain considerably below the rates reported from Russia (609) and the USA (753) ([38]).

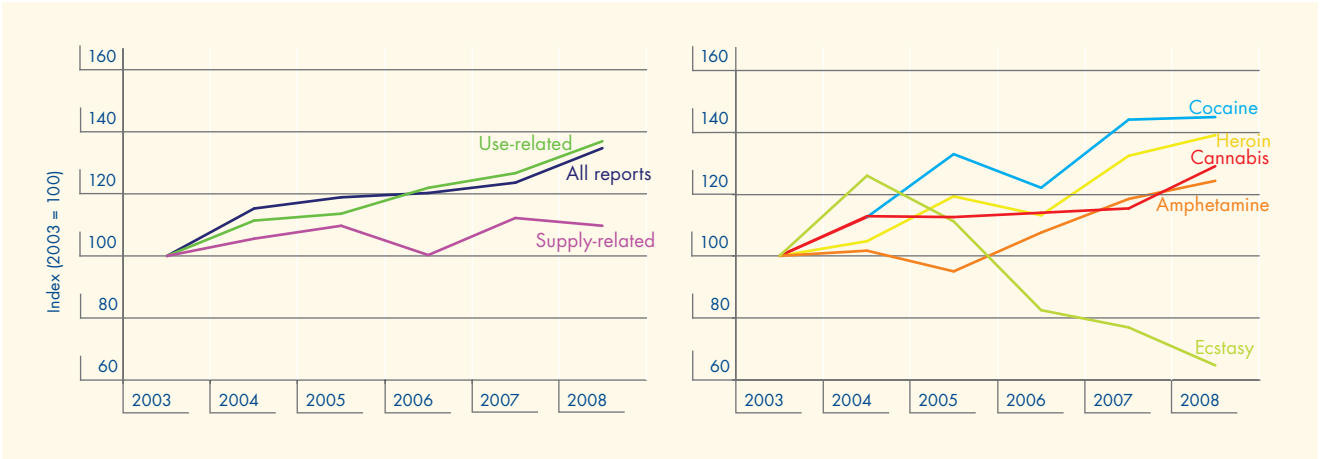
Among sentenced prisoners, those incarcerated for drug law offences make up somewhere between 10 % and 30 % of the prison population in most EU countries. An unknown proportion of others are sentenced for property crimes to support a drug addiction, or other drug-related crime.

Drug use in prison populations

There is still a lack of standardisation of definitions, research questions and methodologies used in studies on drug use in the prison population (Directorate-General for Health and Consumers, 2008; Vandam, 2009), though existing studies show that drug use continues to be more prevalent among prisoners than among the general population. Data from several studies carried out since 2003 show that there are considerable variations in the prevalence of drug use among prisoners: for example, regular drug use in the month before imprisonment was reported by as few as 3 % of respondents in some countries and by up to 77 % in others. Studies also indicate that the most harmful forms of drug use may be more frequent among prisoners, with between 6 % and 38 % of those surveyed reporting to have ever injected drugs ([39]).

On admission to prison, most users reduce or stop consuming drugs, mainly due to problems in acquiring the substances. However, the fact that illicit drugs find their way into most prisons, despite all the measures being

Figure 2: Trends in reports for drug-related offences by type of offence and by drug type in the EU Member States



NB: The trends represent the available information on the national number of reports for drug-related offences (criminal and non-criminal) reported by all law enforcement agencies in the EU Member States; all series are indexed to a base of 100 in 2003 and weighted by national population sizes to form an overall EU trend. For further information, see Figures DLO-1 and DLO-3 in the 2010 statistical bulletin.

Source: Reitox national focal points.

([34]) See Figure DLO-3 and Table DLO-8 in the 2010 statistical bulletin.
([35]) See Table DLO-7 in the 2010 statistical bulletin.
([36]) Data on prisons in Europe are available from the Council of Europe.
([37]) The term 'prisoner' covers both those who are on remand and those who have been sentenced.
([38]) *Source:* World prison brief for rate in the United States of America and Russia.
([39]) See Tables DUP-2 and DUP-105 in the 2010 statistical bulletin.

taken to reduce their supply, is recognised by both prison experts and policymakers in Europe. In studies carried out since 2003, estimates of drug use in prison vary from 1 % to 56 % of inmates. Regular drug use during the last month in detention was reported by 12 % of detainees in a national study carried out in Portugal in 2007 ([40]). A study among 246 prisoners in Luxembourg found that 31 % had injected drugs in prison, while studies in three other countries reported levels of injecting of 10 % or more ([41]). Injecting drug users in custody appear to share their equipment more often compared to users not in prison. This raises issues around the potential spread of infectious diseases among the prison population.

Prison health in Europe

Prisoners are entitled to the same level of medical care as persons living in the community, and prison health services should be able to provide treatment for problems related to drug use in conditions comparable to those offered outside prison (CPT, 2006; WHO, 2007). This general principle of equivalence is recognised in the European Union through the Council recommendation of 18 June 2003 on the prevention and reduction of health-related harm associated with drug dependence ([42]), and the new EU drug action plan (2009–12) calls for its implementation.

Cooperation between prisons and health and social services is developing in Europe. Examples of this are the transfer of responsibility for prison health from national justice to health administrations in France, Italy, Sweden, Norway and England and Wales (it is also planned in Scotland); the integration of community-based health agencies into multidisciplinary prison teams in Luxembourg, Portugal, Slovenia and Sweden; and the growing provision of intramural services by community-based drugs agencies, which now exists in most countries.

National drug strategies and action plans often include objectives for care in prisons, such as improvements in the equivalence, quality and continuity of prison treatment and care. Some countries have elaborated specific strategies for the prison system. Spain and Luxembourg have implemented prison health policies for more than 10 years and documented their effectiveness. More recently, prison drug policy coordinators have been nominated in Belgium, and a central unit, where prison staff and drug specialists cooperate to link prisoners with treatment upon release, was set up. A committee for drug affairs was established within the Hungarian prison service in 2008. The drug policy action plan 2007–09 of the Czech prison service guides the implementation of new services and includes a monitoring and evaluation component. In the United Kingdom, the drug strategy 2008–11 of the National Offender Management Service (NOMS, 2009) seeks to provide early interventions for young people and to manage offenders with drug misuse problems in order to reduce the harm caused by drugs and alcohol.

Assistance to drug users in prison

Prisoners in Europe may access a range of services related to drug use and its associated problems. These include information on drugs and health, healthcare for infectious diseases, treatment for drug dependence, harm-reduction measures and preparation for release ([43]).

Information and guidance regarding the management of infectious diseases in prison has been developed in recent years by international organisations. The UNODC, in collaboration with the WHO and UNAIDS, has published a series of information materials for prison administrations and other decision-makers, which explain how to draw up an effective national response to HIV/AIDS in prison settings (UNODC, WHO and UNAIDS, 2006). Another document provides guidance about how to convey information about infectious diseases counselling and testing more effectively in prison settings, and to improve the communication of results to inmates (UNODC, UNAIDS and WHO, 2010).

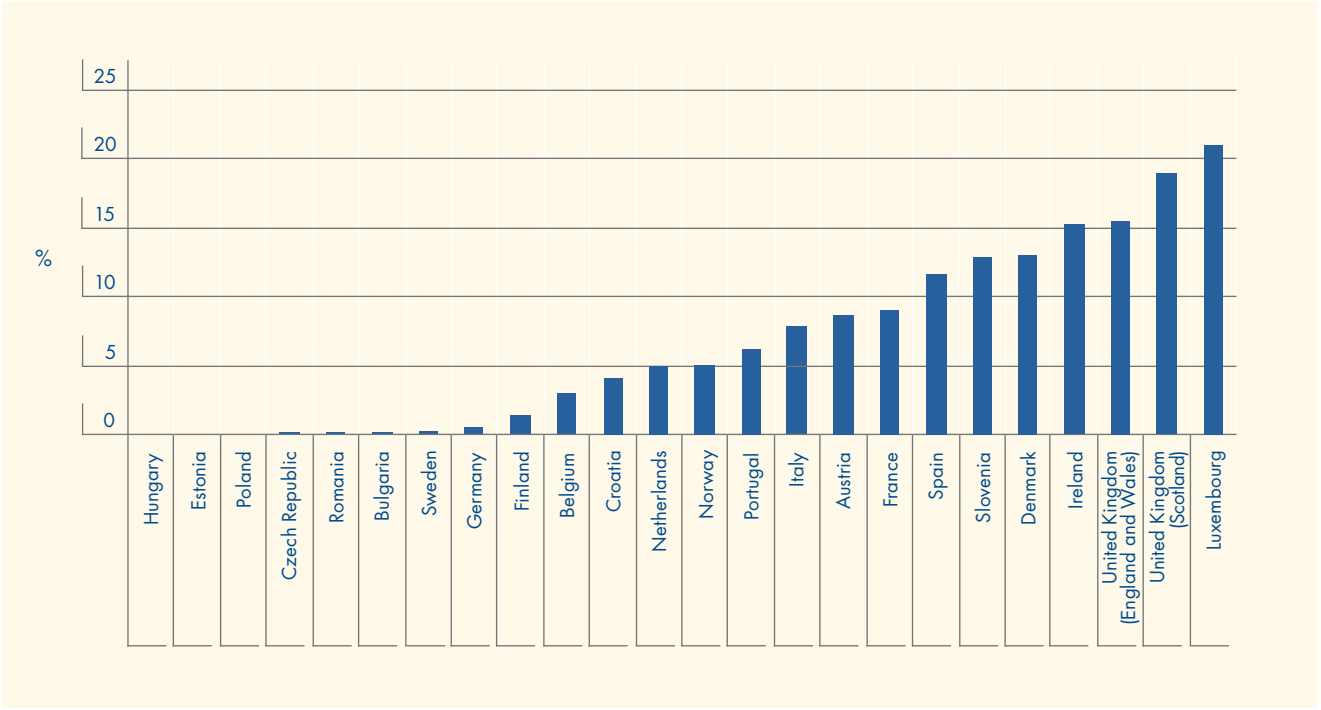
A clear set of healthcare areas and standards in prisons has been defined in a small number of countries, including the Czech Republic, Spain, Luxembourg and the United Kingdom, and steps in this direction are being taken by other countries. Several countries now report that they are assessing the availability and quality of healthcare for drug users in prisons. In Ireland, for example, the need to match the capacities of prison pharmacy services with the growth of substitution treatment provision was identified in a study (Irish Prison Service, 2009), while in France a new supervisory body (Chief Inspectorate of Prisons and Other Closed Institutions) found shortcomings in prison healthcare and identified risks of infection. The Netherlands introduced a new directive for the care of drug users in detention, which gives special attention to drug-related infectious diseases ([44]). The quality of prison services is also improving in several countries through investment in training. In Belgium, all prison staff

([40]) See Table DUP-3 in the 2010 statistical bulletin.
([41]) See Table DUP-4 in the 2010 statistical bulletin.
([42]) OJ L 165, 3.7.2003, p. 31.
([43]) See Table HSR-7 in the 2010 statistical bulletin.
([44]) See the 'Best practice portal'.

received training on prison alcohol and drug policies; prison doctors in Croatia received training in substitution treatment; and a UNODC-led project provided training in HIV prevention and drug education to Latvian prison doctors, social workers and psychologists, who later trained the prisoners. In Finland, new prison treatment programmes require accreditation by the Criminal Sanctions Agency.

Following the scaling up of opioid substitution treatment in the community, many countries report increases in the number of opioid substitution clients entering prison. Continuity of care for substitution treatment is particularly important, given the high rates of overdose death on release (EMCDDA, 2009a) and for reducing the risks of crimes carried out to fund illicit drug use. In 2008, the continuation of opioid substitution treatment in prisons became possible in Bulgaria, Estonia and Romania. However, this treatment option is not available in prisons in Greece, Cyprus, Lithuania, Latvia, Slovakia and Turkey. In six Member States, it can be estimated that more than 10 % of all prisoners receive opioid substitution treatment, while in another eight countries the corresponding figure is between 3 % and 10 % (Figure 3). In most countries, detoxification is still the 'default' treatment for opioid users entering penal institutions.

Figure 3: Proportion of prison population receiving opioid substitution treatment



NB: Data are presented for all countries where substitution treatment is available in prisons, except Malta. Data are for 2008, except for Austria and Scotland (2007) and Belgium and the Netherlands (2009). For notes and sources, see Table HSR-9 in the 2010 statistical bulletin.

Source: Reitox national focal points.

Chapter 3
Cannabis

Introduction

Cannabis is the illicit drug most widely available in Europe, where it is both imported and produced domestically. In most countries, cannabis use increased during the 1990s and early 2000s, although substantial differences between countries still remain. The last few years have also seen a growing understanding of the public health implications of the long-term and widespread use of this drug, and rising reported levels of treatment demand for cannabis-related problems. Europe may now be moving into a new phase, as data from general population and school surveys point to a stabilising or even decreasing trend in cannabis use. Levels of use remain high by historical standards, however, and what constitutes an effective response to cannabis use remains a key question in the European debate on drugs.

Supply and availability

Production and trafficking

Cannabis can be cultivated in a wide range of environments and grows wild in many parts of the world. It is estimated that cannabis is cultivated in 172 countries and territories (UNODC, 2009). These facts taken together mean that it is difficult to produce accurate estimates of the worldwide production of cannabis. The UNODC (2009) estimates global production of herbal cannabis in 2008 at between 13 300 tonnes and 66 100 tonnes.

Cannabis cultivation in Europe is widespread and appears to be increasing. In 2008, all 29 European countries reporting information mentioned domestic cannabis cultivation, though the scale and nature of the phenomenon seem to vary considerably. A significant proportion of cannabis used in Europe is, nevertheless, likely to be the result of intraregional trafficking.

Herbal cannabis in Europe is also imported, mostly from Africa (e.g. Nigeria, Cape Verde, South Africa) and less often from the Americas, especially the Caribbean islands, the Middle East (Lebanon) and Asia (Thailand). Albania, the former Yugoslav Republic of Macedonia, Moldova, Montenegro and Serbia are also mentioned as sources in a recent report (INCB, 2010b).

Table 2: Production, seizures, price and potency of herbal cannabis and resin

	Cannabis resin	Herbal cannabis
Global production estimate (tonnes)	2 200–9 900	13 300–66 100
Global quantities seized (tonnes)	1 637	6 563
Quantity seized (tonnes)		
EU and Norway	892	60
(Including Croatia and Turkey)	(900)	(92)
Number of seizures		
EU and Norway	367 400	273 800
(Including Croatia and Turkey)	(368 700)	(288 600)
Mean retail price (EUR per gram)		
Range	3–10	3–16
(Interquartile range) [1]	(6–9)	(5–9)
Mean potency (THC content %)		
Range	3–16	1–10
(Interquartile range) [1]	(6–10)	(5–8)

[1] Range of the middle half of the reported mean prices.
NB: All data for 2008.
Sources: UNODC (2009, 2010b) for global values, Reitox national focal points for European data.

Global production of cannabis resin in 2008 is estimated at between 2 200 tonnes and 9 900 tonnes (UNODC, 2009), with Afghanistan and Morocco reported as main producers. A recent survey suggests that Afghanistan may now be the world's largest producer of cannabis resin, with production estimated at between 1 500 and 3 500 tonnes a year (UNODC, 2010a). The last estimate available for Morocco suggested a cannabis resin output of about 1 000 tonnes in 2005 (UNODC and Government of Morocco, 2007). Although some of the cannabis resin produced in Afghanistan is sold in Europe, it is likely that Morocco remains Europe's main supplier of this drug. Cannabis resin from Morocco is typically smuggled into Europe via the Iberian peninsula and the Netherlands.

Seizures

In 2008, an estimated 6 563 tonnes of herbal cannabis and 1 637 tonnes of cannabis resin were seized worldwide (Table 2), an overall increase of about 17 % over the previous year (UNODC, 2010b). North America continued to account for the bulk of herbal cannabis seized (48 %), while quantities of resin seized remained concentrated in western and central Europe (57 %).

In Europe, an estimated 289 000 seizures of herbal cannabis, amounting to 92 tonnes, were made in 2008 ([45]). The number of seizures increased by two and a half times between 2003 and 2008. The amount of herbal cannabis seized has remained relatively stable since 2003 at just above 90 tonnes, except for 2004–05 when it decreased to about 65 tonnes ([46]). The United Kingdom has been accounting for approximately half of the total number of seizures, amounting to 20 tonnes or more per year in 2005–07. Turkey (31 tonnes) and Germany (9 tonnes) reported record seizures in 2008.

EMCDDA 'Insights': Cannabis production and markets in Europe

A new 'Insight' on cannabis production and markets will be published by the EMCDDA in 2011. The report will focus on the supply of cannabis products in European countries and examine the type of products available, their origins, their respective market shares and other issues related to distribution and market structures. Cannabis cultivation within European borders, which has become more visible in recent years, will receive special attention.

Seizures of cannabis resin in Europe exceed herbal cannabis seizures, both in number and amount seized ([47]). In 2008, about 369 000 seizures of cannabis resin were made, resulting in the interception of 900 tonnes of the drug — almost 10 times the quantity of herbal cannabis seized. Between 2003 and 2008, the number of cannabis resin seizures increased steadily, while the amount seized, after an initial decline, has been on the increase since 2006. In 2008, about half of the total number of cannabis resin seizures and three quarters of the quantity seized continued to be reported by Spain, while record quantities of cannabis resin were seized by France (71 tonnes), Portugal (61 tonnes) and Italy (34 tonnes).

The number of seizures of cannabis plants has increased since 2003, reaching an estimated 19 000 cases in 2008. Countries report the quantity seized either as an estimate of the number of plants seized or by weight. The number of plants seized increased from 1.7 million in 2003 to 2.6 million in 2007, before falling to 1.2 million in 2008 ([48]). The weight of plants seized has increased by a factor of 4.5 over the period, to 43 tonnes in 2008, of which Spain reported 24 tonnes and Bulgaria 15 tonnes.

Potency and price

The potency of cannabis products is determined by their content of delta-9-tetrahydrocannabinol (THC), the primary active constituent. Cannabis potency varies widely between and within countries, and between different cannabis products. Information on cannabis potency is mostly based on forensic analysis of cannabis seized, selected on a sample basis. The extent to which the samples analysed reflect the overall market is unclear and, for this reason, data on potency should be interpreted with caution.

In 2008, the reported mean THC content of cannabis resin ranged from 3 % to 16 %. The mean potency of herbal cannabis (where possible excluding sinsemilla — the form of herbal cannabis with the highest potency) ranged from 1 % to 10 %. The mean potency of sinsemilla was reported by a few countries only: it was always higher than imported herbal cannabis, and ranged from 12 % in Norway to just over 16 % in the Netherlands and the United Kingdom. Over the period 2003–08, the mean potency of cannabis resin has been diverging in the 11 countries reporting sufficient data, while the potency of herbal cannabis increased in six reporting countries and decreased in four. Information on the potency of locally

([45]) The data on European drug seizures mentioned in this chapter can be found in Tables SZR-1 to SZR-6 in the 2010 statistical bulletin.
([46]) This analysis is preliminary, as data for the United Kingdom are not yet available for 2008.
([47]) Due to differences in shipment size and distances travelled, as well as the need to cross international borders, cannabis resin may be more at risk of being seized than domestically produced herbal cannabis.
([48]) The analysis does not include the seizures reported by Turkey of 31 million cannabis plants in 2003 and 20 million plants in 2004, since data on quantities seized are not available for subsequent years.

produced herbal cannabis over a number of years is available only for the Netherlands, where a decline in the mean potency of 'nederwiet' was observed, from a peak of 20 % in 2004 to 16 % in 2007 and 2008 ([49]).

The mean retail price of cannabis resin, in 2008, ranged from EUR 3 to EUR 10 per gram in the 17 countries providing information, with 12 of them reporting values between EUR 6 and EUR 9. The mean retail price of herbal cannabis ranged between EUR 3 and EUR 16 per gram in the 16 countries supplying information, with 10 of them reporting prices of between EUR 5 and EUR 9. For cannabis resin, the mean retail price declined or remained stable in all countries with data covering the period 2003–08 except Belgium and Austria, where it increased. Over the same period, the data available for herbal cannabis point to stable or increasing prices in Europe, with downward trends reported only in Hungary and Turkey.

Revenues and profits from illicit cannabis cultivation

Estimates produced by police forces suggest that the cannabis plants seized in 2008 could have generated sales of EUR 70 million in Belgium and EUR 76 million in the United Kingdom (NPIA, 2009), and wholesale profits of between EUR 36 million and EUR 61 million in Germany. The total revenue generated by illicit commercial cannabis production is, however, difficult to assess as these figures refer only to intercepted cannabis plants. Estimating the profits also needs to take into account several other variables.

The revenue provided by illicit commercial cannabis production is dependent on several factors including: the size of the plantation; the number of plants; the average yield per plant and the number of harvests per year. A high density of plants and frequent harvests generally decrease the yield obtained from each plant. The revenue generated also depends on whether the harvest is sold on retail or wholesale markets, since prices are usually higher on retail markets.

The costs associated with illicit commercial cannabis production in indoor plantations include: the premises; seed or plant stock; soil or mineral wool; nutrients; lights and pumps; tools and ventilation; and labour. Electricity, when it is not obtained illegally, is also a major element of production costs.

To calculate the revenue and profit from illicit cannabis plantations, Dutch law enforcement agencies have developed technical standards, which they update regularly. New methodologies are also under development in Belgium and the United Kingdom.

Prevalence and patterns of use

Cannabis use among the general population

It is conservatively estimated that cannabis has been used at least once (lifetime prevalence) by about 75.5 million Europeans, that is over one in five of all 15- to 64-year-olds (see Table 3 for a summary of the data). Considerable differences exist between countries, with national prevalence figures varying from 1.5 % to 38.6 %. For most of the countries, the prevalence estimates are in the range 10–30 %.

An estimated 23 million Europeans have used cannabis in the last year, or on average 6.8 % of all 15- to 64-year-olds. Estimates of last month prevalence will include those using the drug more regularly, though not necessarily in a daily or intensive way. It is estimated that about 12.5 million Europeans used the drug in the last month, on average about 3.7 % of all 15- to 64-year-olds.

Cannabis use among young adults

Cannabis use is largely concentrated among young people (15–34 years), with the highest prevalence of last year use generally being reported among 15- to 24-year-olds. This is the case in all the reporting countries, with the exception of Portugal ([50]).

Population survey data suggest that, on average, 31.6 % of young European adults (15–34 years) have ever used cannabis, while 12.6 % have used the drug in the last year and 6.9 % have used it in the last month. Still higher proportions of Europeans in the 15–24 age group are estimated to have used cannabis in the last year (16 %) or last month (8.4 %). National prevalence estimates of cannabis use vary widely between countries in all measures of prevalence. For example, estimates of last year prevalence of use among young adults in countries at the upper end of the scale are more than 30 times those of the lowest-prevalence countries.

Cannabis use is generally higher among males than among females. For example, the ratio of males to females among young adults reporting use of cannabis in the last year ranges from 6.4:1 in Portugal to 1.4:1 in Bulgaria ([51]).

Cannabis use is particularly high among certain groups of young people, such as those frequently attending nightclubs, pubs and music events (Hoare, 2009). Targeted surveys recently conducted in electronic dance

([49]) See Tables PPP-1 and PPP-5 in the 2010 statistical bulletin for potency and price data.
([50]) See Figure GPS-1 in the 2010 statistical bulletin.
([51]) See Table GPS-4 (part iii) and (part iv) in the 2010 statistical bulletin.

Table 3: Prevalence of cannabis use in the general population — summary of the data

Age group	Time frame of use		
	Lifetime	Last year	Last month
15–64 years			
Estimated number of users in Europe	75.5 million	23 million	12.5 million
European average	22.5 %	6.8 %	3.7 %
Range	1.5–38.6 %	0.4–15.2 %	0.1–8.5 %
Lowest-prevalence countries	Romania (1.5 %) Malta (3.5 %) Cyprus (6.6 %) Bulgaria (7.3 %)	Romania (0.4 %) Malta (0.8 %) Greece (1.7 %) Sweden (1.9 %)	Romania (0.1 %) Malta, Sweden (0.5 %) Greece, Poland (0.9 %) Lithuania, Hungary (1.2 %)
Highest-prevalence countries	Denmark (38.6 %) Czech Republic (34.2 %) Italy (32.0 %) United Kingdom (31.1 %)	Czech Republic (15.2 %) Italy (14.3 %) Spain (10.1 %) France (8.6 %)	Czech Republic (8.5 %) Spain (7.1 %) Italy (6.9 %) France (4.8 %)
15–34 years			
Estimated number of users in Europe	42 million	17 million	9.5 million
European average	31.6 %	12.6 %	6.9 %
Range	2.9–53.3 %	0.9–28.2 %	0.3–16.7 %
Lowest-prevalence countries	Romania (2.9 %) Malta (4.8 %) Cyprus (9.9 %) Greece (10.8 %)	Romania (0.9 %) Malta (1.9 %) Greece (3.2 %) Cyprus (3.4 %)	Romania (0.3 %) Sweden (1.0 %) Greece (1.5 %) Poland (1.9 %)
Highest-prevalence countries	Czech Republic (53.3 %) Denmark (48.0 %) France (43.6 %) United Kingdom (40.5 %)	Czech Republic (28.2 %) Italy (20.3 %) Spain (18.8 %) France (16.7 %)	Czech Republic (16.7 %) Spain (13.4 %) Italy (9.9 %) France (9.8 %)
15–24 years			
Estimated number of users in Europe	19.5 million	10 million	5.5 million
European average	30.9 %	16.0 %	8.4 %
Range	3.7–58.6 %	1.5–37.3 %	0.5–22.4 %
Lowest-prevalence countries	Romania (3.7 %) Malta (4.9 %) Cyprus (6.9 %) Greece (9.0 %)	Romania (1.5 %) Greece, Cyprus (3.6 %) Sweden (4.9 %) Portugal (6.6 %)	Romania (0.5 %) Greece, Sweden (1.2 %) Cyprus (2.0 %) Poland (2.5 %)
Highest-prevalence countries	Czech Republic (58.6 %) France (42.0 %) Denmark (41.1 %) Germany (39.0 %)	Czech Republic (37.3 %) Spain (24.1 %) Italy (22.3 %) France (21.7 %)	Czech Republic (22.4 %) Spain (16.9 %) France (12.7 %) Italy (11.0 %)

European prevalence estimates are based on weighted averages from the most recent national surveys conducted from 2001 to 2008/09 (mainly 2004–08), and therefore cannot be attached to a single year. The average prevalence for Europe was computed by a weighted average according to the population of the relevant age group in each country. In countries for which no information was available, the average EU prevalence was imputed. Populations used as basis: 15–64 (334 million), 15–34 (133 million) and 15–24 (63 million). The data summarised here are available under 'General population surveys' in the 2010 statistical bulletin.

music settings in the Czech Republic, Austria and the United Kingdom reported that over 80 % of respondents have ever used cannabis, a rate that is much higher than the European average among young adults (Measham and Moore, 2009).

Cannabis use among school students

The ESPAD survey, carried out every four years, provides comparable data on alcohol and drug use among 15- to 16-year-old school students in Europe (Hibell et al., 2009).

In 2007, the survey was conducted in 25 EU Member States as well as Norway and Croatia. In addition, in 2008, national school surveys were carried out by Spain, Italy, Sweden and the United Kingdom, and Belgium (Flemish Community) conducted a regional school survey.

The data from the 2007 ESPAD and 2008 national school surveys reveal that the highest lifetime prevalence of cannabis use among 15- to 16-year-old school students is in the Czech Republic (45 %), while Estonia, France, the Netherlands, Slovakia and the United Kingdom report prevalence levels ranging from 26 % to 32 %. Lifetime prevalence levels of cannabis use of between 13 % and 25 % are reported by 15 countries. The lowest levels (less than 10 %) are reported in Greece, Cyprus, Romania, Finland, Sweden and Norway. The gender gap in cannabis use is less marked among school students than among young adults. Male to female ratios for cannabis use among school students range from close to unity in Spain and the United Kingdom to 2:1 or higher in Cyprus, Greece, Poland and Romania ([52]).

International comparisons

European figures can be compared with those from other parts of the world. For instance, in Canada (2008) lifetime prevalence of cannabis use among young adults is 53.8 % and last year prevalence is 24.1 %. In the United States, SAMHSA (2008) estimated a lifetime prevalence of cannabis use of 49 % (16–34 years, recalculated by the EMCDDA) and a last year prevalence of 21.5 %, while in Australia (2007) the figures are 47 % and 16 % for the 14- to 39-year-olds. All these figures are above the European averages, which are respectively 31.6 % and 12.6 %.

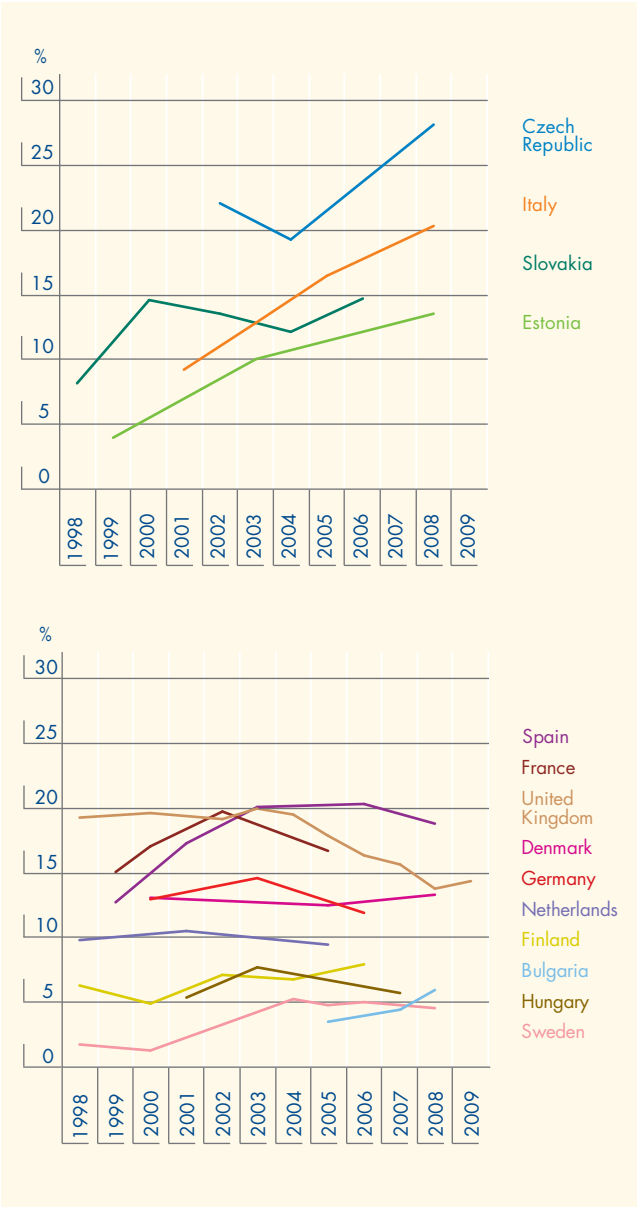
Among school students, the Czech Republic, Spain, France and Slovakia report levels of lifetime prevalence of cannabis use that are comparable to those reported in the United States and Australia ([53]).

Trends in cannabis use

During the period 1998–2008, for the 15 countries that are able to provide sufficient data, three major trends can be observed in cannabis use among adults (Figure 4). Five countries (Bulgaria, Greece, Hungary, Finland, Sweden) have reported low (under 9 %) and relatively stable prevalence levels for last year cannabis use among young adults. Six countries (Denmark, Germany, Spain, France, Netherlands, United Kingdom) reported higher prevalence levels, but at stable or decreasing levels in recent years. Four other countries (Czech Republic, Estonia, Italy, Slovakia) also reported higher levels of cannabis use among young adults, but with increasing trends in recent years.

When looking at more recent trends in cannabis use among young adults, of the 12 countries with repeated surveys during the period 2003–08, the majority report a stable situation (Denmark, Germany, Spain, Hungary, Sweden, Finland, United Kingdom). Five countries report increased cannabis use over this period, of at least two percentage points in Bulgaria, Estonia and Slovakia, and about eight percentage points in the Czech Republic and Italy.

Figure 4: Trends in last year prevalence of cannabis use among young adults (aged 15–34)



NB: See Figure GPS-4 in the 2010 statistical bulletin for further information.

Sources: Reitox national reports (2009), taken from population surveys, reports or scientific articles.

([52]) See Table EYE-20 (part ii) and (part iii) in the 2010 statistical bulletin.

([53]) See Figure EYE-1 (part xii) in the 2010 statistical bulletin.

Similar patterns are found across Europe in the time trends in cannabis use among school students between 1995 and 2007 (EMCDDA, 2009a). Seven countries, located mainly in northern or southern Europe (Greece, Cyprus, Malta, Romania, Finland, Sweden, Norway), report overall stable and low lifetime prevalence of cannabis use during the whole period. Most west European countries, as well as Croatia and Slovenia, which had high or strongly increasing lifetime cannabis use prevalence up until 2003, have seen a decrease or stabilisation in 2007. Among these 11 countries, nine report a decrease and two a stable situation. The picture is different in most of central and eastern Europe, where the increasing trend observed between 1995 and 2003 appears to be levelling out. In this region, six countries report a stable situation and two report an increase between 2003 and 2007.

Three countries that conducted school surveys in 2008 (Belgium (Flemish Community), Sweden and United Kingdom) report stable or lower lifetime prevalence of cannabis use than reported in 2007, while Spain reports a decrease of more than three percentage points. School survey data from the United States and Australia also indicate a decreasing trend, which was first observed in Australia in 1999 ([54]).

Patterns of cannabis use

Available data point to a variety of patterns of cannabis use, ranging from experimental use to dependent use. Many individuals use the substance only once or twice, while others use it occasionally or during a limited period of time. Of those aged 15–64 who have ever used cannabis, 30 % have done so during the last year ([55]). Among those who have used the drug in the last year, on average, half have done so in the last month.

Data from a sample of 13 European countries, accounting for 77 % of the adult population of the European Union and Norway, show that of the estimated 12.5 million Europeans who used cannabis in the past month, about 40 % may have consumed the drug on one to three days during that month, about one third on four to 19 days and one quarter on 20 days or more. From these data it can be estimated that over 1 % of European adults, about 4 million, are using cannabis daily or almost daily. Most of these cannabis users, about 3 million, are aged between 15 and 34 years, representing approximately 2–2.5 % of Europeans in this age group ([56]). Daily or almost daily cannabis use may be about four times more prevalent in males than in females.

Risk factors for cannabis initiation and dependence

Researchers have tried to find out why some cannabis users become dependent while others do not. One of their findings is that factors related to initiation of cannabis use are often different from those that lead to problematic use and cannabis dependence. Some external factors (peers' drug use and cannabis availability) and factors related to the individual (e.g. a positive attitude toward future drug use) are associated specifically with cannabis use initiation (Von Sydow et al., 2002). Some other factors are associated, with different strengths, both to cannabis initiation and to cannabis dependence. These include genetic factors (Agrawal and Lynskey, 2006), individual factors such as male gender, mental health disorders and other substance use (alcohol, tobacco and other). Familial factors such as having a poor relationship with mother and growing up without both parents are also associated with cannabis initiation, while parental divorce or separation and parental death before age 15 are associated with cannabis dependence (Coffey et al., 2003; Swift et al., 2008; Von Sydow, 2002).

Factors specifically associated with progression to dependence include intensive or risky patterns of cannabis use, persistent use and early onset. Individuals who experienced positive effects (e.g. happiness, laughter) of their early cannabis use (at age 14–16) had an increased risk of cannabis dependence later in life. Also associated with the progression to dependence are various psychological and mental health factors (including low self-esteem, low self-control and coping skills) and socioeconomic factors (including low socioeconomic status and bad financial situation) (Coffey et al., 2003; Fergusson et al., 2003; Swift et al., 2008; Von Sydow, 2002).

Ten European countries reporting data to the ESPAD study among 15- to 16-year-old school students report relatively high proportions (5–12 %) of male students having used cannabis on 40 or more occasions. This proportion was at least double that found among the female students. Most of these countries also reported that between 5 % and 9 % of the respondents had initiated cannabis use at age 13 or younger. This group is of concern, as early onset of use has been associated with the development in later life of intensive and problematic forms of drug consumption.

Dependence is increasingly recognised as a possible consequence of regular cannabis use, even among younger users ([57]). However, the severity and consequences of cannabis dependence may appear less serious than those commonly associated with some other

([54]) See Figure EYE-1 (part xii) in the 2010 statistical bulletin.
([55]) See Figure GPS-2 in the 2010 statistical bulletin.
([56]) The European averages are an estimation based on a weighted average (for the population) for countries with information, and imputed for countries without information. The figures obtained are 1.2 % for all adults (15–64 years) and 2.3 % for young adults (15–34 years). See Table GPS-10 in the 2010 statistical bulletin.
([57]) See the box 'Risk factors for cannabis initiation and dependence'.

psychoactive substances (e.g. heroin or cocaine). The development of cannabis dependence might also be more gradual than that found with some other drugs (Wagner and Anthony, 2002). It has been reported that half of dependent cannabis users who stopped using the drug were able to do so without treatment (Cunningham, 2000). Nonetheless, some cannabis users — particularly heavy users — can experience problems without necessarily fulfilling the clinical criteria for dependence ([58]).

Cannabis use has been correlated with membership of a vulnerable or socially disadvantaged group, such as with early school leavers, 'truants', children in care institutions, young offenders and young people living in economically deprived neighbourhoods (EMCDDA, 2008c). It can also be associated with the use of other substances. For example, young adults (aged 15–34) who reported frequent or heavy alcohol use in the past year were between two and six times more likely to report the use of cannabis compared to the general population. And, although most cannabis users do not use other illicit drugs, they are more likely to do so than the general population. Adolescent cannabis users also report two to three times higher prevalence of tobacco smoking compared to the general 15- to 16-year-old school population.

Some cannabis users engage in more risky patterns of use, such as using cannabis with very high THC content or in large amounts, and inhaling from a water pipe ('bong') instead of a 'joint'. These users generally report more health problems, including dependence (Chabrol et al., 2003; Swift et al., 1998).

Treatment

Treatment demand

Cannabis was the primary drug in about 21 % of all treatment entries (about 85 000 clients) reported by 27 countries in 2008, making it the second most reported drug after heroin. Primary cannabis users account for less than 5 % of treatment entrants in Bulgaria, Estonia, Lithuania, Luxembourg and Slovenia, and more than 30 % in Denmark, Germany, France, Hungary and the Netherlands, with most cannabis clients entering treatment in outpatient settings ([59]).

These differences may be explained by the prevalence of use of cannabis and other drugs, drug treatment needs, treatment provision and organisation or referrals practices. In one of the two countries with the largest proportions of cannabis clients, counselling centres target young drug users (France), while in the other (Hungary) cannabis offenders are offered drug treatment as an alternative to punishment. The criminal justice system plays a substantial role in treatment referral in both of these countries but, overall, Member States report that most cannabis users entering treatment in Europe do it on their own initiative. Some users might also enter drug treatment because they have other underlying conditions, such as mental health problems, and cannot find appropriate treatment elsewhere (Zachrisson et al., 2006).

Many cannabis clients report the use of alcohol or other drugs. Based on a data collection in 14 countries, 65 % of them take another drug, mostly alcohol or cocaine, and some report the use of both alcohol and cocaine (EMCDDA, 2009d). Cannabis is reported as a secondary drug by 24 % of all outpatient drug clients ([60]).

Trends in new demands for drug treatment

In the 18 countries for which data are available, the number of primary cannabis users among those entering treatment for the first time in their life increased from about 23 000 to 35 000 between 2003 and 2007, before slightly decreasing to about 33 000 in 2008. Starting in 2005 and 2006, 13 countries have reported decreases in new cannabis clients ([61]). This might reflect recent declining trends in cannabis use, but could also be linked with service capacity saturation or use of other services (e.g. primary and mental healthcare).

Client profiles

Clients entering outpatient treatment for primary cannabis use in Europe are mainly young males, with a male to female ratio of 5:1 and a mean age of 25 years. Among drug users entering outpatient treatment for the first time, primary cannabis use is reported by 69 % of those aged 15–19 years and by 83 % of those younger than 15 years ([62]).

Overall, 22 % of primary cannabis users entering outpatient treatment are occasional users (or have not used it the month before entering treatment), probably often referred by the criminal justice system; 11 % use cannabis weekly or less often; about 17 % use it two to six times a week; and 50 % are daily users, the most

([58]) See the box 'Adverse health effects of cannabis use'.
([59]) See Figure TDI-2 (part ii) and Tables TDI-5 (part ii) and TDI-24 in the 2010 statistical bulletin.
([60]) See Table TDI-22 (part i) in the 2010 statistical bulletin.
([61]) See Figure TDI-1 and Table TDI-3 (part iv) in the 2010 statistical bulletin.
([62]) See Tables TDI-10 (part iii) and (part iv) and TDI-21 (part ii) in the 2010 statistical bulletin.

problematic group. Considerable differences are observed between countries. In Hungary, Romania and Croatia more than half of cannabis clients are occasional users, while in Belgium, Bulgaria, Denmark, Ireland, Spain, France, Malta and the Netherlands more than 50 % are daily users ([63]).

Treatment provision

Cannabis treatment in Europe covers a wide range of measures, including Internet-based treatment, counselling, structured psychosocial interventions and treatment in residential settings. There is also a frequent overlap in this field between selective prevention, harm reduction and treatment interventions (see Chapter 2).

In France, the network of youth counselling centres, also known as cannabis clinics, provides users with services varying in duration and approach depending on the severity of drug use. In a study carried out in 226 of the 274 counselling centres in 2007, 47 % of outpatients were diagnosed as occasional users showing no symptoms of dependence or abuse, and about 30 % of these received no further counselling (Obradovic, 2009). In contrast, among the 53 % diagnosed with dependence or abuse at admission, nearly 80 % were offered further counselling, and most others were referred to treatment centres. Half of the clients attending a second counselling session reported a reduction in their cannabis use. This was more often the case among self-referred users and those referred by health professionals, while those referred by the criminal justice system were more likely to drop out after a few sessions.

As an alternative to criminal prosecution, the criminal justice system in Hungary refers eligible drug offenders to a 'preventive counselling service', and the more severe cases to specialist treatment facilities. Users referred by the criminal justice system, about 85 % of all cannabis clients, must take part in drug treatment or psychosocial counselling at least once a fortnight for six months, to obtain a discharge certificate. Otherwise, they may face criminal prosecution.

Germany, the Netherlands and the United Kingdom offer Internet-based cannabis treatment in order to facilitate treatment access to users who are reluctant to seek help within the specialist drug treatment system. Online treatment interventions include either a self-help programme without contact to counsellors or a structured programme with scheduled contacts (see EMCDDA, 2009b). A quality label and guidelines in this field are now being developed in the Netherlands.

The Netherlands also reports the evaluation of a novel family motivational intervention for cannabis users with recent onset of schizophrenia. This intervention aims at reducing cannabis use, increasing medication compliance and improving parent–child relations among this group. Preliminary results, after three months, show a significant reduction in cannabis use compared to usual psychoeducation, while the other outcome variables did not differ.

Recent studies on treatment of cannabis users

Relatively few studies have assessed the effectiveness of targeted interventions for cannabis users (Levin and Kleber, 2008), despite the increase in the number of treatment demands. Research has been conducted into both pharmacotherapeutic and psychosocial interventions, but the results are not conclusive.

A recently published randomised controlled trial assessed the effectiveness of motivational interviewing compared

Adverse health effects of cannabis use

Several recent reviews have looked into the adverse health effects associated with cannabis use (EMCDDA, 2008a; Hall and Degenhardt, 2009). These include acute effects such as anxiety, panic reaction and psychotic symptoms, which are often reported by first-time users. Such effects account for a substantial number of drug-related hospital emergencies demands in the few countries that monitor them. Cannabis use also appears to increase the risk of being involved in a traffic accident by two to three times (EMCDDA, 2008b).

Cannabis use can also have chronic effects which may be directly linked with the patterns of use (frequency and quantities). These include cannabis dependence but also chronic bronchitis and other respiratory diseases. Cannabis use during pregnancy could reduce birth weight, but does not seem to cause birth defects. The association of cannabis use with depression and suicide is still uncertain.

The impact of cannabis on cognitive performance, and its reversibility, remains unclear. Regular cannabis use in adolescence might adversely affect mental health in young adults, with evidence of an increased risk of psychotic symptoms and disorders that increase with frequency of use (Hall and Degenhardt, 2009; Moore et al., 2007).

While the individual risk related to cannabis use seems lower than for heroin or cocaine, health problems do exist and, due to high prevalence of use, the impact of cannabis on public health may be significant. Particular attention should be given to cannabis use by adolescents and people with mental health problems. Frequent cannabis use, use over longer periods and use when driving or during other potentially dangerous activities are other matters of concern.

([63]) See Tables TDI-18 (part ii) and TDI-111 (part viii) in the 2010 statistical bulletin.

to drug information and counselling, and found no significant differences in cannabis use (McCambridge et al., 2008). It also found that practitioner effects might influence cannabis cessation rates, thereby limiting the transferability of the interventions. European studies in this area are assessing the effectiveness of multidimensional family therapy (Incant), motivational enhancement, cognitive-behavioural therapy and psychosocial problem solving (Candis) and Internet-based treatment.

Two studies have recently been published on the pharmacotherapy of cannabis dependence, neither of which reported significant results. In the Netherlands, a randomised controlled trial compared the effects of a serotonin uptake inhibitor (olanzapine) and a dopamine antagonist (risperidone) on patients with psychotic comorbidity (van Nimwegen et al., 2008). In the United States, a preliminary study compared the effects of an antidepressant (nefazodone), a dopamine uptake inhibitor (sustained release bupropion) and a placebo on use and withdrawal symptoms among cannabis users (Carpenter et al., 2009).

Putting science into practice in drug treatment

Drug treatment has often been slow in adopting scientifically tested methods in its clinical practice. The limited provision of opioid substitution treatment in several European countries and the rare use of contingency management for the treatment of cocaine dependence are examples of this gap between science and practice. Among the reasons put forward to explain this are: individual allegiances to particular treatment models; lack of training or funding; inefficient knowledge dissemination; and lack of organisational readiness and support for new practices (Miller et al., 2006).

To overcome these barriers, a conference was organised recently in Germany to examine the transfer of experimental cannabis treatment projects with evidence of efficacy into clinical practice (Kipke et al., 2009). The projects reviewed included 'Candis', 'Quit the shit' and 'FreD', all of which have been described in earlier EMCDDA publications. The conference found that the programme characteristics that facilitated transfer into clinical practice included: compatibility with existing treatment offers; clear, structured protocols; seminars for specialists; and platforms to exchange experience. The main obstacles identified were problems in cooperation management, for example with external partners (such as the police) and lack of funding beyond the experimental stage.

Transferability aspects should be integrated into the initial planning of experimental interventions. The wider adoption of interventions with strong or long-standing empirical evidence requires the commitment of all stakeholders.

Chapter 4

Amphetamines, ecstasy and hallucinogenic substances

Introduction

Amphetamines (a generic term that includes both amphetamine and methamphetamine) and ecstasy are among the most commonly used illicit drugs in Europe. In terms of the absolute numbers, cocaine use may be higher, but its geographic concentration means that in many countries, after cannabis, the second most commonly used illicit substance is either ecstasy or amphetamines. Moreover, in some countries, use of amphetamines constitutes an important part of the drug problem, accounting for a substantial proportion of those in need of treatment.

Amphetamine and methamphetamine are central nervous system stimulants. Of the two drugs, amphetamine is by far the more commonly available in Europe, whereas significant methamphetamine use appeared to be restricted to the Czech Republic and Slovakia until recently, with some countries in the north of Europe now reporting the increased presence of this drug on their amphetamines markets.

Ecstasy refers to synthetic substances that are chemically related to amphetamines, but which differ to some extent in their effects. The best-known member of the ecstasy group of drugs is 3,4-methylenedioxy-methamphetamine (MDMA), but other analogues are also sometimes found in ecstasy tablets (MDA, MDEA). Ecstasy use was virtually unknown in Europe before the late 1980s but increased rapidly during the 1990s. The drug's popularity has historically been linked with the dance music scene and, in general, synthetic drug use is associated with particular cultural subgroups or social settings and increasingly with heavy episodic use of alcohol.

The most widely known synthetic hallucinogenic drug in Europe is lysergic acid diethylamide (LSD), consumption of which has been low and somewhat stable for a considerable time. In recent years, there appears to have been a growing interest among young people in naturally occurring hallucinogens such as those found in hallucinogenic mushrooms.

Table 4: Production, seizures, price and purity of amphetamine, methamphetamine, ecstasy and LSD

	Amphetamine	Methamphetamine	Ecstasy	LSD
Global production estimate (tonnes) (1)	197–624 (2)		57–136	n.a.
Global quantities seized (tonnes)	23.0	17.9	2.3	0.1
Quantity seized **EU and Norway** **(Including Croatia and Turkey)**	 8.3 tonnes (8.4 tonnes)	 300 kilograms (300 kilograms)	Tablets 12.7 million (13.7 million)	Units 141 100 (141 800)
Number of seizures **EU and Norway** **(Including Croatia and Turkey)**	 37 000 (37 500)	 4 700 (4 700)	 18 500 (19 100)	 950 (960)
Mean retail price (EUR) **Range** **(Interquartile range)** (3)	Gram 6–36 (9–19)	Gram 12–126	Tablet 2–19 (4–9)	Dose 4–30 (7–12)
Range of mean purity or MDMA content	3–34 %	22–80 %	17–95 mg	n.a.

(1) Figures for production are based on estimates of consumption and seizure data.
(2) Only aggregate estimates of amphetamine and methamphetamine global production are available.
(3) Range of the middle half of the reported mean prices.
NB: All data are for 2008; n.a., not available.
Sources: UNODC (2010b) for global values, Reitox national focal points for European data.

Supply and availability

Synthetic drug precursors

Law enforcement efforts target the controlled chemicals necessary for illicit drug production, and this area is one in which international cooperation is particularly valuable. 'Project Prism' is an international initiative to prevent the diversion of precursor chemicals used in the illicit manufacture of synthetic drugs, through a system of pre-export notifications for licit trade and the reporting of shipments stopped and seizures made when suspicious transactions occur. Information on activities in this area is reported to the International Narcotics Control Board (INCB, 2010a).

The INCB reports reductions in 2008 in world seizures of two key precursors of methamphetamine; ephedrine with 12.6 tonnes (compared to 22.7 tonnes in 2007 and 10.3 tonnes in 2006), and pseudoephedrine with 5.1 tonnes (compared to 25 tonnes in 2007 and 0.7 tonnes in 2006). EU Member States (mainly the Netherlands and the United Kingdom) accounted for 0.3 tonnes of ephedrine, about half the amount seized the year before, and for over 0.5 tonnes of pseudoephedrine, almost all in France.

By contrast, global seizures of 1-phenyl-2-propanone (P2P, BMK), which can be used for the illicit manufacture of both amphetamine and methamphetamine, increased sharply from 834 litres in 2007 to 5 620 litres in 2008. Seizures of P2P in the European Union amounted to 2 757 litres, compared to 773 litres in 2007.

In 2008, there were no reported seizures of 3,4-methylenedioxyphenyl-2-propanone (3,4-MDP2P, PMK), used to manufacture MDMA, in contrast to global seizures of 2 297 and 8 816 litres in 2007 and 2006, respectively. World seizures of safrole, which may replace 3,4-MDP2P in the synthesis of MDMA, fell to 1 904 litres from a peak of 45 986 litres in 2007. Most of the safrole confiscations in 2008 were made in the European Union.

Amphetamine

Global amphetamine production remains concentrated in Europe, which accounted for more than 80 % of all amphetamine laboratories reported in 2008 (UNODC, 2010b). Global seizures of amphetamine remained broadly stable in 2008, amounting to about 23 tonnes (see Table 4). Of this, over a third was seized in western and central Europe, reflecting Europe's role as both a major producer and consumer of this drug (UNODC, 2010b).

Most amphetamine seized in Europe is produced, in order of importance, in the Netherlands, Poland and Belgium, and to a lesser extent in Estonia, Lithuania and the United Kingdom. In 2007, 29 sites involved in the production, tableting or storage of amphetamine were discovered in the European Union and reported to Europol.

In 2008, an estimated 37 500 seizures amounting to 8.3 tonnes of amphetamine powder were made in Europe ([64]). The number of amphetamine seizures has been fluctuating around a stable trend for the last five years, although compared to 2003 they remained at higher levels, while quantities have increased over 2003–08 ([65]).

The purity of amphetamine samples intercepted in Europe in 2008 varied widely, and any comment on average values must be made with caution. Nevertheless, mean purity of samples ranged from less than 10 % in Denmark, Austria, Portugal, Slovenia, the United Kingdom, Croatia and Turkey to greater than 25 % in Latvia, the Netherlands, Poland and Norway. Over the past five years, the purity of amphetamine has been falling or stable in most of the 17 countries where sufficient data are available to allow analysis of trends ([66]).

In 2008, the mean retail price of amphetamine ranged between EUR 9 and EUR 20 a gram for over half of the 17 reporting countries. Amphetamine retail prices decreased or remained stable in all 13 countries reporting data over 2003–08, except in Spain where they dropped to a record low in 2008 after increases in previous years ([67]).

Amphetamine production in Europe

In 2009, the EMCDDA and Europol launched a series of publications on the supply of illicit drugs in Europe. Following reports on methamphetamine and cocaine, the third report in the series published in 2010 provides a comprehensive overview of amphetamine production and trafficking issues, and reviews the responses at European and international levels. Reports on the supply of other drugs in Europe, including ecstasy and heroin, will be added to the series in the coming years.

The report is available in print and online on the EMCDDA website in English only.

([64]) This analysis is preliminary, as data for the United Kingdom are not yet available for 2008.
([65]) The data on European drug seizures mentioned in this chapter can be found in Tables SZR-11 to SZR-18 in the 2010 statistical bulletin.
([66]) The data on European drug purities mentioned in this chapter can be found in Table PPP-8 in the 2010 statistical bulletin.
([67]) The data on European drug prices mentioned in this chapter can be found in Table PPP-4 in the 2010 statistical bulletin.

Methamphetamine

The number of methamphetamine laboratories reported worldwide increased by 29 % in 2008. The strongest increase was registered in North America, but reports of clandestine laboratories also increased in east and south-east Asia. In addition, increased activity related to methamphetamine production was reported in Latin America and Oceania. In 2008, 17.9 tonnes of methamphetamine was seized, continuing a stable trend since 2004. Most of the drug was seized in east and south-east Asia (notably China), followed by North America (UNODC, 2010b).

Illicit production of methamphetamine in Europe is largely limited to the Czech Republic, where 458 production sites were detected in 2008 (Figure 5). This is the highest number of methamphetamine 'kitchen laboratories' yet reported by the Czech Republic. Seizures of precursor chemicals also increased in 2008. Production of the drug is also reported in Lithuania, Poland and Slovakia.

In 2008, almost 4 700 seizures of methamphetamine, amounting to approximately 300 kg of the drug, were reported in Europe. Between 2003 and 2008, the number of methamphetamine seizures steadily increased. Over the same period, quantities seized increased to a record in 2007 and decreased slightly in 2008, mainly due to a decline in the amount recovered in Norway, the main seizing country in Europe for this drug.

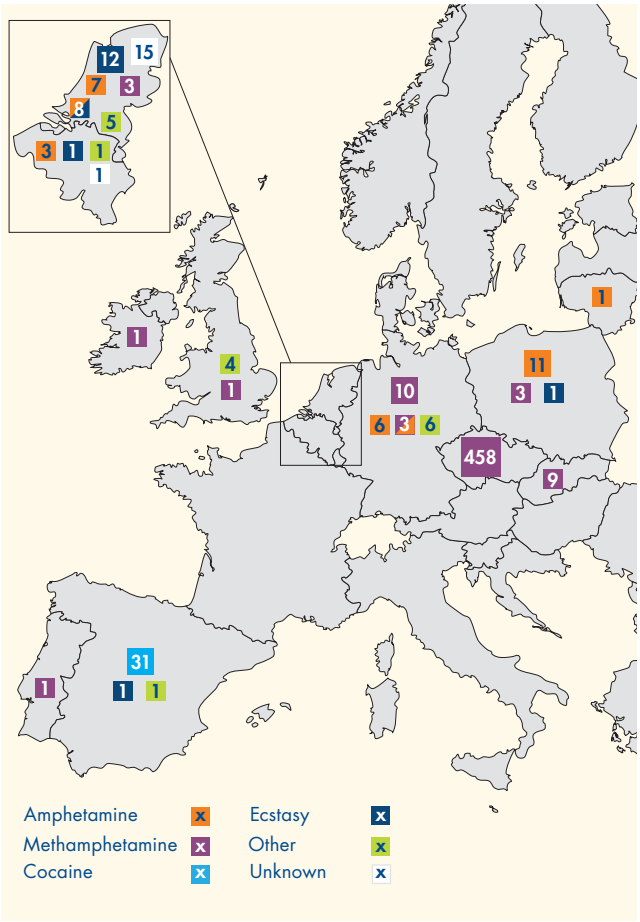
Ecstasy

Global production of ecstasy in 2008 is estimated at between 57 and 136 tonnes (UNODC, 2010b). The manufacture of the drug appears to have continued to spread geographically, with manufacture occurring closer to consumer markets in east and south-east Asia, North America and Oceania. Despite this, western and central Europe remain the main location for ecstasy production, with it concentrated in the Netherlands and Belgium.

Worldwide, seizures of ecstasy fell to a very low level in 2008 (2.3 tonnes) (UNODC, 2010b). In west and central Europe, reported seizures fell from 1.5 tonnes in 2007 to 0.3 tonnes in 2008.

More than 19 100 seizures were reported in Europe in 2008, resulting in the interception of an estimated 13.7 million ecstasy tablets. However, this is a preliminary assessment as data for 2008 were not available for the Netherlands and the United Kingdom, which reported combined seizures of 18.4 million tablets in 2007.

Figure 5: Illicit drug facilities dismantled in the European Union as reported to Europol



NB: Based on data reported to Europol by 11 EU Member States. Drug type is denoted by colour, with the number of facilities reported in the country indicated. Facilities handling the combinations amphetamine and methamphetamine or amphetamine and ecstasy are denoted by two-colour symbols. Facilities handling other synthetic drugs or combinations are labelled 'other'. Also indicated are facilities for which the substances are unknown. The facilities reported included production, tableting and storage units, which are not distinguished here. All reported cocaine facilities were involved in transformation or secondary extraction of the drug.

Source: Europol.

The number of ecstasy seizures reported in Europe has been slightly declining, after a stabilisation between 2003 and 2006, while quantities seized declined overall between 2003 and 2008 ([68]).

In Europe, most ecstasy tablets analysed in 2008 contained MDMA or another ecstasy-like substance (MDEA, MDA) as the only psychoactive substance present, with 19 countries reporting that this was the case in over 60 % of all tablets analysed. Seven countries now report lower proportions of ecstasy tablets with MDMA or its analogues (Spain, Cyprus, Latvia, Luxembourg, Slovenia, United Kingdom, Croatia). Some countries report that mCPP, a drug which is not controlled

([68]) This analysis is preliminary, as data for the Netherlands and the United Kingdom are not yet available for 2008.

under the international drug conventions, was found in a substantial proportion of the ecstasy tablets analysed (see Chapter 8).

The typical MDMA content of ecstasy tablets tested in 2008 was between 5 and 72 mg in the 11 countries providing data. In addition, high-dose ecstasy tablets containing over 130 mg of MDMA were reported by several countries (Belgium, Bulgaria, Germany, Estonia, Latvia, Netherlands, Slovakia, Norway). There are no clear trends in the MDMA content of ecstasy tablets.

Ecstasy is now considerably cheaper than it was in the 1990s, when it first became widely available. While there are some reports of tablets being sold for less than EUR 2, most countries are reporting mean retail prices in the range of EUR 4–10 per tablet. The data available for 2003–08 suggest that the retail price of ecstasy, adjusted for inflation, has continued to fall in Europe.

Hallucinogenic substances

Use and trafficking of LSD in Europe is still considered marginal. The number of LSD seizures increased between 2003 and 2008, while quantities, after a peak in 2005 due to record seizures in the United Kingdom, have been fluctuating at much lower levels over the period ([69]). LSD retail prices (adjusted for inflation) remained stable or slightly decreased in eight countries since 2003, while increases were reported in Belgium and Sweden. In 2008, the mean price was between EUR 5 and EUR 12 per unit for the majority of the 13 reporting countries.

Prevalence and patterns of use

Relatively high levels of amphetamines or ecstasy use among the general population are reported by some EU Member States (Czech Republic, Estonia, United Kingdom). In a few countries, the use of amphetamine or methamphetamine, often by injection, accounts for a substantial proportion of the overall number of problem drug users and those seeking help for drug problems. In contrast to these chronic user populations, a more general association exists between the use of synthetic drugs, ecstasy in particular, and nightclubs and dance events. This results in significantly higher levels of use being reported among young people, and exceedingly high levels of use being found in some settings or specific subpopulations. The overall consumption levels of hallucinogenic drugs such as LSD and hallucinogenic mushrooms are generally low and have been largely stable in recent years.

Amphetamines

Drug prevalence estimates suggest that about 12 million Europeans have tried amphetamines, and about 2 million have used the drug during the last year (see Table 5 for a summary of the data).

Among young adults (15–34 years), lifetime prevalence of amphetamines use varies considerably between countries, from 0.1 % to 15.4 %, with a weighted European average of 5.2 %. Last year use of amphetamines in this age group ranges from 0.1 % to 3.2 %, with most countries reporting prevalence levels of 0.5–2.0 %. It is estimated that about 1.5 million (1.2 %) young Europeans have used amphetamines during the last year.

Among 15- to 16-year-old school students, lifetime prevalence of amphetamines use ranged from 1 % to 8 % in the 26 EU Member States, Norway and Croatia, surveyed in 2007, though prevalence levels of more than 5 % were reported only for Bulgaria, Latvia (both 6 %) and Austria (8 %). The five countries that conducted school surveys in 2008 (Belgium (Flemish Community), Spain, Italy, Sweden, United Kingdom) reported lifetime prevalence of amphetamines of 3 % or less ([70]).

Problem amphetamine use

The EMCDDA indicator on problem drug use can be applied to amphetamine use, where it defines as such the injecting or long duration and/or regular use of the substance. Finland has provided the most recent national estimate of problem amphetamine users, estimated at between 12 000 and 22 000 in 2005, which is about four times the estimated number of problem opioid users in the country.

The proportion of drug users that reported entering treatment for use of amphetamine as the primary drug is relatively small (less than 5 %), in most European countries (18 out of 27 reporting countries), but accounts for a sizeable proportion of reported treatment entries in Sweden (32 %), Finland (20 %) and Latvia (15 %). Five other countries (Belgium, Denmark, Germany, Hungary, Netherlands) report between 6 % and 10 % of treatment entries from clients citing amphetamine as their primary drug; elsewhere the proportion is less than 5 %. Amphetamine is also reported as a secondary drug by other treatment clients ([71]).

Amphetamine users entering treatment are, on average, about 30 years old, with inpatients being younger (28 years). The male to female ratio among amphetamine clients (2:1) is lower than that for any other illicit drug.

([69]) This analysis is preliminary, as data for the United Kingdom are not yet available for 2008.
([70]) See Table EYE-11 in the 2010 statistical bulletin.
([71]) See Tables TDI-5 (part ii) and TDI-22 in the 2010 statistical bulletin.

Table 5: Prevalence of amphetamines use in the general population — summary of the data

Age group	Time frame of use	
	Lifetime	Last year
15–64 years		
Estimated number of users in Europe	12 million	2 million
European average	3.7 %	0.6 %
Range	0.0–12.3 %	0.0–1.7 %
Lowest-prevalence countries	Romania (0.0 %) Greece (0.1 %) Malta (0.4 %) Cyprus (0.8 %)	Romania, Malta, Greece (0.0 %) France (0.1 %) Portugal (0.2 %)
Highest-prevalence countries	United Kingdom (12.3 %) Denmark (6.3 %) Sweden (5.0 %) Czech Republic (4.3 %)	Czech Republic (1.7 %) United Kingdom, Denmark (1.2 %) Norway, Estonia (1.1 %)
15–34 years		
Estimated number of users in Europe	7 million	1.5 million
European average	5.2 %	1.2 %
Range	0.1–15.4 %	0.1–3.2 %
Lowest-prevalence countries	Romania (0.1 %) Greece (0.2 %) Malta (0.7 %) Cyprus (0.8 %)	Romania, Greece (0.1 %) France (0.2 %) Cyprus (0.3 %) Portugal (0.4 %)
Highest-prevalence countries	United Kingdom (15.4 %) Denmark (10.5 %) Czech Republic (7.8 %) Latvia (6.1 %)	Czech Republic (3.2 %) Denmark (3.1 %) Estonia (2.5 %) United Kingdom (2.3 %)

European prevalence estimates are based on weighted averages from the most recent national surveys conducted from 2001 to 2008/09 (mainly 2004–08), and therefore cannot be attached to a single year. The average prevalence for Europe was computed by a weighted average according to the population of the relevant age group in each country. In countries for which no information was available, the average EU prevalence was imputed. Populations used as basis: 15–64 (334 million) and 15–34 (133 million). The data summarised here are available under 'General population surveys' in the 2010 statistical bulletin.

The Czech Republic, Estonia, Latvia, Lithuania, Sweden and Finland all report relatively high levels of injecting among primary amphetamine clients, ranging from 57 % to 82 % ([72]).

Trends in amphetamine users entering treatment between 2003 and 2008 have remained broadly stable in most countries ([73]).

Problem methamphetamine use

In contrast to other parts of the world, where the use of methamphetamine has increased in recent years, levels of use in Europe appear limited. Historically, use of this drug in Europe has been concentrated in the Czech Republic and Slovakia. In 2008, the number of problem methamphetamine users in the Czech Republic was estimated to be approximately 20 700–21 800 (2.8 to 2.9 cases per 1 000 aged 15–64 years), roughly

'Selected issue': Problem amphetamine and methamphetamine use, related consequences and responses

Amphetamines, and particularly methamphetamine, have been reported to cause major problems in several parts of the world. In Europe, only a few countries report significant harm caused by these drugs and sizeable numbers of problem amphetamine and methamphetamine users. A new EMCDDA 'Selected issue' looks at historical and recent developments in these countries. The report covers the epidemiology of, mainly chronic or intensive, amphetamine and methamphetamine use, and its health and social correlates. It also describes the health, social and legal responses developed for the problems associated with these drugs.

The 'Selected issue' is available in print and online on the EMCDDA website in English only.

([72]) See Tables TDI-5 (part iv) and TDI-37 in the 2010 statistical bulletin.
([73]) See the 2010 'Selected issue' on problem amphetamine and methamphetamine use for a full analysis.

twice the estimated number of problem opioid users. For Slovakia, there were estimated to be approximately 5 800–15 700 problem methamphetamine users in 2007 (1.5 to 4.0 cases per 1 000 aged 15–64 years), about 20 % fewer than the estimated number of problem opioid users. Recently, methamphetamine has appeared on the drug market in other countries, especially in the north of Europe (Norway, Sweden, Latvia and, to a lesser extent, Finland), where it seems to partially replace amphetamine, being virtually indistinguishable from it to the users. In Europe, problem methamphetamine users typically inject or snort the drug. Smoking is rarely reported, again in contrast to other parts of the world.

Methamphetamine is reported as the primary drug by a large proportion of clients entering treatment in the Czech Republic (59 %) and Slovakia (29 %). Injecting is reported as the main route of drug administration by 80 % of methamphetamine clients in the Czech Republic and 36 % in Slovakia ([74]). Use of other drugs is also often reported, mainly heroin, cannabis and alcohol. Both countries report that the use of methamphetamine as a secondary substance is common, especially among people in substitution treatment.

Methamphetamine users entering treatment in the Czech Republic and Slovakia are relatively young, on average 25–26 years. The Czech Republic reports that the number of women entering treatment for primary methamphetamine use is increasing, especially among the younger age groups. Between 2003 and 2008, the number of first-time treatment entrants for problems relating to methamphetamine has been increasing in both countries ([75]).

Ecstasy

Ecstasy use is concentrated among younger adults, with males reporting levels of use much higher than females in all countries except Sweden and Finland. Of the approximately 2.5 million (0.8 %) European adults who used ecstasy in the last year, virtually all are in the 15–34 age group (see Table 6 for a summary of the data). Still higher levels of ecstasy use are found among the 15–24 age group, where lifetime prevalence ranges from under 1 % in Greece and Romania to 20.8 % in the Czech Republic, followed by Slovakia and the United Kingdom (both 9.9 %) and Latvia (9.4 %), though most countries report estimates in the 2.1–6.8 % range ([76]). Last year use of ecstasy among this age group is estimated at between 1.0 % and 3.7 % in the majority of countries, though there is a considerable difference between the lowest national estimate at 0.3 % and the highest at 11.3 %.

Among 15- to 16-year-old school students, lifetime prevalence of ecstasy use ranged from 1 % to 5 % in most of the EU countries surveyed in 2007. Only four countries reported higher prevalence levels: Bulgaria, Estonia, Slovakia (all 6 %) and Latvia (7 %). The five countries that conducted school surveys in 2008 (Belgium (Flemish Community), Spain, Italy, Sweden, United Kingdom) reported lifetime prevalence of ecstasy use of 4 % or less ([77]).

Few drug users seek treatment for problems relating to ecstasy. In 2008, ecstasy was mentioned as the primary drug by less than 1 % of treatment entrants in 21 of the 27 reporting countries. Elsewhere, the proportion varied between 1 % and 3 %. With an average age of 24 years, ecstasy clients are among the youngest entering drug treatment. There are two or three males for every female entering treatment. Ecstasy clients often report the concomitant use of other substances, including alcohol, cocaine and, to a lesser extent, cannabis and amphetamines ([78]).

LSD and hallucinogenic mushrooms

Among young adults (15–34 years), lifetime prevalence estimates of LSD use range from zero to 6.1 %, with the exception of the Czech Republic where a 2008 drug survey reported a higher prevalence (10.3 %). Much lower prevalence ranges are reported for last year use ([79]).

In the few countries providing comparable data, the use of LSD is usually exceeded by that of hallucinogenic mushrooms. Lifetime prevalence estimates for hallucinogenic mushrooms among young adults range from 0.3 % to 14.1 %, and last year prevalence estimates are in the range of 0.2–5.9 %.

Among 15- to 16-year-old school students, prevalence estimates for the use of hallucinogenic mushrooms are higher than those for LSD and other hallucinogens in 10 of the 26 countries providing data on these substances. Most countries report lifetime prevalence estimates for the use of hallucinogenic mushrooms of between 1 % and 4 %, with Slovakia (5 %) and the Czech Republic (7 %) reporting higher levels ([80]).

([74]) See Table TDI-5 (part ii) and (part iv) in the 2010 statistical bulletin.
([75]) See Table TDI-3 in the 2010 statistical bulletin.
([76]) See Table GPS-7 (part iv) in the 2010 statistical bulletin.
([77]) See Table EYE-11 in the 2010 statistical bulletin.
([78]) See Tables TDI-5 and TDI-37 (part i), (part ii) and (part iii) in the 2010 statistical bulletin.
([79]) See Table GPS-1 in the 2010 statistical bulletin.
([80]) Data from ESPAD for all countries except Spain. See Figure EYE-2 (part v) in the 2010 statistical bulletin.

Table 6: Prevalence of ecstasy use in the general population — summary of the data

Age group	Time frame of use	
	Lifetime	Last year
15–64 years		
Estimated number of users in Europe	11 million	2.5 million
European average	3.3 %	0.8 %
Range	0.3–9.6 %	0.1–3.7 %
Lowest-prevalence countries	Romania (0.3 %) Greece (0.4 %) Malta (0.7 %) Poland (1.2 %)	Romania, Sweden (0.1 %) Malta, Greece (0.2 %) Poland (0.3 %)
Highest-prevalence countries	Czech Republic (9.6 %) United Kingdom (8.6 %) Ireland (5.4 %) Latvia (4.7 %)	Czech Republic (3.7 %) United Kingdom (1.8 %) Slovakia (1.6 %) Latvia (1.5 %)
15–34 years		
Estimated number of users in Europe	8 million	2.5 million
European average	5.8 %	1.7 %
Range	0.6–18.4 %	0.2–7.7 %
Lowest-prevalence countries	Romania, Greece (0.6 %) Malta (1.4 %) Poland (2.1 %) Cyprus (2.4 %)	Romania, Sweden (0.2 %) Greece (0.4 %) Poland (0.7 %)
Highest-prevalence countries	Czech Republic (18.4 %) United Kingdom (13.8 %) Ireland (9.0 %) Latvia (8.5 %)	Czech Republic (7.7 %) United Kingdom (3.9 %) Slovakia, Latvia, Netherlands (2.7 %)

European prevalence estimates are based on weighted averages from the most recent national surveys conducted from 2001 to 2008/09 (mainly 2004–08), and therefore cannot be attached to a single year. The average prevalence for Europe was computed by a weighted average according to the population of the relevant age group in each country. In countries for which no information was available, the average EU prevalence was imputed. Populations used as basis: 15–64 (334 million) and 15–34 (133 million). The data summarised here are available under 'General population surveys' in the 2010 statistical bulletin.

Trends in the use of amphetamines and ecstasy

The stabilising trends in amphetamines and ecstasy use in Europe, noted in previous reports, are supported by the most recent data. After general increases in the 1990s, population surveys now point to an overall stabilisation in the popularity of both drugs, although recent increases are seen in a few countries. National trends in general population surveys may, however, not reflect trends in stimulant use at the local level or among different subpopulations. Targeted surveys in nightlife settings suggest that the prevalence and patterns of stimulant drug use together with alcohol remain high, with some studies suggesting that drug use patterns among club-goers are becoming increasingly polarised from those in the general population (Measham and Moore, 2009). In contrast, observations made in Germany recently indicate that substance use in the clubbing scene is on the decline in that country.

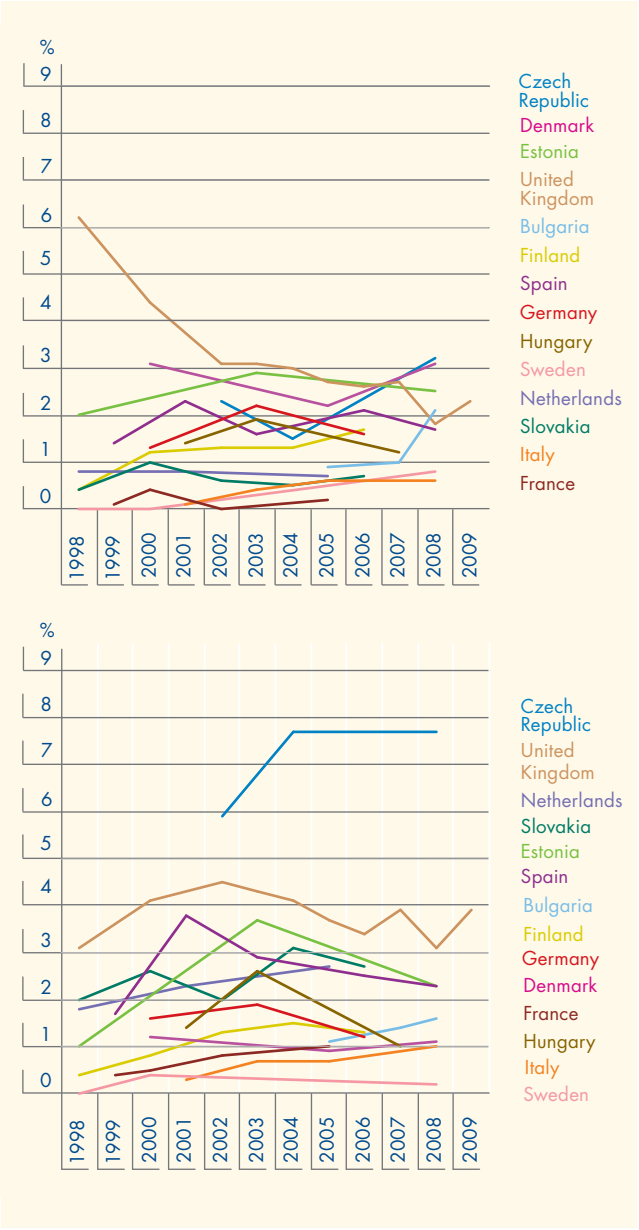
In the United Kingdom, last year use of amphetamines among young adults (15–34) declined from 6.2 % in 1998 to 2.3 % in 2008–09. In Denmark, it increased from 0.5 % in 1994 to 3.1 % in 2000 and stabilised thereafter ([81]). Among the other countries reporting repeated surveys over a similar time span (Germany, Greece, Spain, France, Netherlands, Slovakia, Finland), the trends are largely stable (Figure 6). During the period 2003–08, of the 11 countries with sufficient data on last year prevalence of amphetamines use among the 15–34 age group, only two report a change of more than one percentage point (Bulgaria, from 0.9 % in 2005 to 2.1 % in 2008, and the Czech Republic, from 1.5 % in 2004 to 3.2 % in 2008).

In countries reporting higher than average levels of ecstasy use, use of the drug among 15- to 34-year-olds typically peaked at somewhere between 3 % and 5 % in the early 2000s (Estonia, Spain, Slovakia,

([81]) In Denmark, the information for 1994 refers to 'hard drugs', which were considered mainly amphetamines.

United Kingdom; see Figure 6). An exception to this is the Czech Republic, where it is estimated that 7.7 % of the 15–34 age group have used ecstasy in the last year, with an upward trend over the period 2003–08. Over this period, most other countries report a stable trend, with the exception of Estonia and Hungary, where last year prevalence of ecstasy use among young adults increased during the early 2000s and has since decreased.

Figure 6: Trends in last year prevalence of use of amphetamines (top) and ecstasy (bottom) among young adults (aged 15–34)



NB: Only data for countries with at least three surveys in the period 1998–2009 are presented. See Figures GPS-8 and GPS-21 in the 2010 statistical bulletin for further information.

Sources: Reitox national reports, taken from population surveys, reports or scientific articles.

In eight countries (Denmark, France, Spain, Ireland, Italy, Austria, Portugal, United Kingdom), the most recent surveys show that last year cocaine use now exceeds the use of amphetamine and ecstasy among young adults.

School surveys conducted in 2007 (ESPAD) and 2008 suggest, overall, little change in the levels of experimentation with amphetamines and ecstasy among students aged 15–16. Considering differences of at least two percentage points between 2003 and 2007, lifetime prevalence of amphetamines use increased in nine countries. By the same measure, ecstasy use increased in seven countries. A decrease in lifetime prevalence of amphetamines use was observed only in Estonia and Italy, while the Czech Republic, Portugal and Croatia reported a decrease in ecstasy use. The remaining countries report a stable trend.

Amphetamines and ecstasy in recreational settings: use and interventions

Data on the prevalence of stimulant use from studies conducted in nightlife settings in 2008 were provided by nine countries. Estimates show considerable variation between different countries and settings, ranging from 10 % to 85 % for lifetime use of ecstasy and from 5 % to 69 % for use of amphetamines. Three of the studies also reported lifetime prevalence estimates for hallucinogenic mushrooms, ranging from 34 % to 54 %. Differences in the prevalence and patterns of drug use reported by customers attending clubs playing different genres of electronic dance music have been found in six countries (Germany, France, Hungary, Netherlands, Romania, United Kingdom), with ecstasy use appearing to be consistently more closely associated with some music genres than others. Ecstasy use was also more common than amphetamines use in the settings sampled in three reporting countries (Czech Republic, Netherlands, United Kingdom). For example, 9 % of club-goers in Amsterdam reported that they had taken ecstasy during the evening of the survey and 42 % of club-goers in Manchester reported that they had taken or planned to take ecstasy during the evening of the survey. The corresponding figures for amphetamines were 3.6 % (Amsterdam) and 8 % (Manchester).

Only 13 European countries have recently reported on interventions in recreational nightlife settings. Information provision and harm-reduction materials were the main activities reported, but few informative strategies addressed the normative beliefs underlying the recreational youth culture. Environmental approaches, such as healthy clubbing environments, safe

transportation, selling and policing schemes, chill-out zones, alcohol tests and crisis interventions are reported, alone or in combination, by seven countries (Belgium, Denmark, Germany, Spain, Luxembourg, Netherlands, United Kingdom). Cooperation between players involved in the nightlife field — municipalities, police and restaurant or club owners — is now also reported by Spain and Italy.

The harms associated with alcohol use in nightlife settings are increasingly being recognised in Europe. Environmental strategies on alcohol are reported by Denmark, Luxembourg, Sweden and the United Kingdom, as well as by some areas in Spain. The various interventions implemented in these countries include responsible alcohol serving, staff training, higher tax on alcopops, 16-year minimum age for the purchase of alcoholic beverages and zero tolerance for young drivers.

As the use of alcohol and other drugs is strongly connected in nightlife settings, regulations targeting alcohol use could also reduce stimulant use. A recent British Crime Survey reported that the frequency of nightclub visits was strongly associated with polydrug use ([82]). Data analysed by the EMCDDA from general population surveys in nine European countries reveal that, among frequent or heavy alcohol users, the prevalence of amphetamines or ecstasy use is much higher than average (EMCDDA, 2009d). Analysis of ESPAD school survey data for 22 countries shows that 85.5 % of the 15- to 16-year-old students who had used ecstasy during the last month had also drunk five or more alcoholic drinks on one occasion (EMCDDA, 2009d). And, as reported by the Netherlands, users may be taking stimulant drugs such as cocaine and amphetamines in order to sober up after excessive drinking.

Treatment

Users of amphetamines generally receive treatment in outpatient drug services which, in countries with a history of a significant amphetamines problem, can be specialised in treating this type of drug problem. Treatment for the most problematic users of amphetamines may be provided in inpatient drug services or in psychiatric clinics or hospitals. This is particularly the case where amphetamines dependence is complicated by co-occurring psychiatric disorders. In Europe, pharmaceuticals (antidepressants, sedatives or antipsychotics) are administered for the treatment of early abstinence symptoms at the beginning of detoxification, which is usually provided at specialised inpatient psychiatric departments. In the Czech Republic, methamphetamine users referred to detoxification centres often arrive in a state of acute toxic psychosis, which is typically accompanied by aggressiveness towards both themselves and their surroundings. Such patients often need to be physically restrained, communication with them is difficult and they usually reject any care. Users with psychotic conditions are treated with atypical antipsychotic medications in inpatient psychiatric facilities. The Czech Republic also reports that, due to the young age of clients and the high frequency of family-related problems, it is common to work with methamphetamine users within a family therapy context.

The lack of a pharmacological substitute for the treatment of amphetamines dependence is mentioned by several countries as a problem for maintaining amphetamines users in treatment. While dexamphetamine is available as a substitute for the treatment of highly problematic users of amphetamines in England and Wales, national guidelines on clinical management of drug dependence recommend against its use for this purpose, due to the lack of demonstrated effectiveness (NTA, 2007).

Treatment effectiveness

Chronic use of methamphetamine can lead to cognitive impairment, and this can reduce the user's capacity to benefit from psychological, cognitive and behavioural therapies (Rose and Grant, 2008). This may help explain

Evidence-based interventions

Drug and alcohol use in recreational settings can produce a wide range of health and social problems through violence, involuntary and unsafe sex, traffic accidents, underage drinking and social nuisance. A recent review of the effectiveness of interventions in this setting found that those most widely implemented were not evidence-based (Calafat et al., 2009). These include the provision of information to reduce harms, the promotion of moderation, responsible alcohol serving, training of door staff and designated driver programmes. In some cases, the lack of effectiveness might be linked with poor implementation.

Evidence was found that combining client and staff training, mandatory cooperation between authorities and the leisure industry, and law enforcement (licensing, age verification) was the best strategy to reduce injuries, problem drinking patterns and young people's access to alcohol. Unfortunately, outcomes on illicit drug use were only rarely assessed.

Other measures at societal level which are effective in reducing substance use in nightlife settings include alcohol taxation, restricted sales hours, outlet density limitations, drink driving checkpoints, reduced blood alcohol concentration limits, minimum legal purchasing age and licence suspension.

([82]) Defined as having taken two or more illicit drugs within the same time period, e.g. last year.

the considerable research efforts that are being made to develop pharmacological interventions. In some cases, the medications being studied are intended to enable the patients to undertake a psychological intervention.

A number of clinical trials on pharmaceuticals for use in treating amphetamines dependence have recently been published or are in progress. Out of nine published studies, six were carried out in the United States, two in Sweden and one in Australia. The substances investigated included: the dopamine-reuptake inhibitors methylphenidate and bupropion, for promoting abstinence in methamphetamine-dependent patients; aripiprazole, an antipsychotic agent; ondansetron, an anti-anxiety agent; amineptine, a psychotropic drug; mirtazapine, an antihistamine; modafinil, a neuroprotective agent; and the opioid receptor antagonist naltrexone. Among all studies, only naltrexone was associated with a significant treatment benefit in terms of reduction of use (either proved by urine samples or self-reported) and rate of continuous abstinence. Studies in the United States are also exploring if citicoline, which may improve mental function in methamphetamine dependent subjects, improves the efficacy of other pharmaceutical treatments.

Finally, a controlled study showed that outpatient treatment supervised by a drug court produced better results than unsupervised treatment. In a clinical study, the addition of contingency management improved the results compared to current treatment alone. A possible vaccine with antidrug monoclonal antibodies for overdose and relapse prevention has also been described in a recent dissertation.

Chapter 5
Cocaine and crack cocaine

Introduction

Use of cocaine and seizures of the drug have increased during the last decade, and cocaine is now the second most used illicit drug in Europe, after cannabis. Levels of use differ widely between countries, with cocaine use concentrated in countries in the west and the south of Europe. There is also considerable diversity among cocaine users, both in patterns of use and sociodemographically. There are occasional cocaine users, socially integrated regular users and more marginalised and often dependent users, including current and former opioid users. This diversity complicates the assessment of the prevalence of the drug's use, its health and social consequences and the necessary responses.

Supply and availability

Production and trafficking

Cultivation of coca bush, the source of cocaine, continues to be concentrated in three countries in the Andean region. The UNODC (2010b) estimated for the year 2009 that the total cultivation of 158 000 hectares of coca bush translated into a potential production of between 842 and 1 111 tonnes of pure cocaine, compared to an estimated 865 tonnes in 2008 (UNODC, 2010b). The area under cultivation in 2009 is estimated at 158 000 hectares, down from 167 600 hectares in 2008 — a decrease of 5 % largely attributed to a reduction in the area under coca in Columbia not offset by increases in Peru and Bolivia.

The conversion of coca leaves into cocaine hydrochloride is mainly carried out in Colombia, Peru and Bolivia, although it may also occur in other countries. Colombia's importance in the production of cocaine is corroborated by information on laboratories dismantled and seizures of potassium permanganate, a chemical reagent used in the manufacture of cocaine hydrochloride. In 2008, 3 200 cocaine laboratories were dismantled (INCB, 2010b) and a total of 42 tonnes of potassium permanganate (90 % of global seizures) was seized in Colombia (INCB, 2010a).

Table 7: Production, seizures, price and purity of cocaine and crack cocaine

	Cocaine	Crack [1]
Global production estimate (tonnes)	842–1 111	n.a.
Global quantities seized (tonnes)	711 [2]	n.a.
Quantity seized (tonnes) **EU and Norway** **(Including Croatia and Turkey)**	 67 (67)	 0.06 (0.06)
Number of seizures **EU and Norway** **(Including Croatia and Turkey)**	 95 700 (96 300)	 10 100 (10 100)
Mean retail price (EUR per gram) **Range** **(Interquartile range)** [3]	 37–107 (50–70)	 45–82
Range of mean purity (%)	13–62	20–89

[1] Due to the small set of countries reporting information, data should be interpreted with caution.
[2] UNODC estimates this figure to be equivalent to 412 tonnes of pure cocaine.
[3] Range of the middle half of the reported mean prices.
NB: All data for 2008 except the global production estimate (2009); n.a., data not available.
Sources: UNODC (2010b) for global values, Reitox national focal points for European data.

The available information suggests that cocaine continues to be trafficked to Europe via different air and sea routes. Cocaine consignments transit through countries including Argentina, Brazil, Ecuador, Venezuela and Mexico before reaching Europe. Caribbean islands are also frequently used in the transhipment of the drug to Europe. In recent years, alternative routes through West Africa have been detected (EMCDDA and Europol, 2010). Although a 'substantive decline' in seizures of cocaine transiting West Africa was reported for 2008 (UNODC, 2009), it is likely that significant amounts of the drug still go through the region (EMCDDA and Europol, 2010).

The Iberian peninsula, especially Spain, and the Low Countries, particularly the Netherlands, appear to be the points of entry for cocaine being smuggled into Europe. France, Italy and the United Kingdom are frequently mentioned as important transit or destination countries inside Europe. Recent reports also indicate that cocaine trafficking may be expanding eastward (EMCDDA and Europol, 2010; INCB, 2010b). The aggregate figure for 10 central and east European countries shows an increase in the number of cocaine seizures, from 469 cases in 2003 to 1 212 in 2008, but these still represent only about 1 % of the European total.

Seizures

Cocaine is the most trafficked drug in the world after herbal cannabis and cannabis resin. In 2008, global seizures of cocaine remained largely stable at about 711 tonnes (Table 7) (UNODC, 2010b). South America continued to report the largest amount seized, accounting for 60 % of the global figure (CND, 2009), followed by North America with 28 %, and west and central Europe with 11 % (UNODC, 2009).

In Europe, the number of cocaine seizures has been on the increase for the last 20 years, and more notably since 2004. In 2008, the number of cocaine seizures increased to 96 000 cases, though the total quantity intercepted dropped to 67 tonnes, down from 121 tonnes in 2006 and 76 tonnes in 2007. The fall in the total amount of cocaine seized is largely accounted for by decreases in the amounts recovered since 2006 in Spain and Portugal ([83]). This might be explained by changes in trafficking routes or practices, or changes in law enforcement priorities. In 2008, Spain continued to be the country reporting both the largest quantity of cocaine seized and the highest number of seizures of the drug — about half of the total — in Europe. This analysis is preliminary as data for 2008 are not yet available for the Netherlands, which reported the second-largest quantities of cocaine intercepted in 2007.

Cocaine 'secondary extraction' laboratories in Europe

Clandestine laboratories set up by drug traffickers to process cocaine in Europe perform a different function to the cocaine laboratories in South America, where cocaine base or hydrochloride is extracted from coca leaves or coca paste. Most of the laboratories uncovered by European law enforcement agencies appear to extract cocaine from materials in which it has been incorporated before being exported.

Cocaine hydrochloride and, less frequently, cocaine base have been discovered in a range of 'carrier' materials as diverse as beeswax, fertiliser, clothing, herbs and liquids. The incorporation process can vary in sophistication from simply soaking clothes in a solution of cocaine and water, to incorporating the drug in plastic. In the latter case, a reverse chemical process is needed to extract the cocaine. After extraction, the substance can be adulterated with various cutting agents and pressed into cocaine bricks embossed with logos that designate high-purity cocaine in producer countries.

Europol received reports of the discovery of about 30 cocaine 'secondary extraction' laboratories of various sizes in 2008, all in Spain. In the Netherlands, a mid-scale laboratory removing cocaine from cacao powder and liquor was seized in Roosendaal, in the province of Brabant. A year earlier, Dutch authorities had already dismantled two 'secondary extraction' laboratories in the same province, seizing 8 tonnes of plastic (polypropylene) containing cocaine. Documentation recovered at the laboratories showed that more than 50 tonnes of the plastic had been imported from Colombia during that year.

Purity and price

The mean purity of cocaine samples tested ranged between 25 % and 55 % for most reporting countries in 2008, although lower values were reported in Denmark (retail only, 23 %) and some parts of the United Kingdom (Scotland, 13 %), and higher ones in Belgium (59 %), France (60 %) and Romania (62 %) ([84]). Twenty-one countries provided sufficient data for analysis of trends in cocaine purity over the period 2003–08, with 17 of the countries reporting a decline, three a stable situation (Germany, Greece, France) and Portugal observing an increase.

In 2008, the mean retail price of cocaine ranged between EUR 50 and EUR 70 per gram in half of the 18 reporting countries. Lower prices were reported in Poland and Portugal and higher ones in the Czech Republic, Italy, Latvia and Sweden. With one exception, all countries with sufficient data to make a comparison reported a decrease in cocaine retail prices between 2003 and 2008. Only Poland reported an increase over the period, albeit with a decline in 2008.

([83]) See Tables SZR-9 and SZR-10 in the 2010 statistical bulletin.
([84]) For purity and price data, see Tables PPP-3 and PPP-7 in the 2010 statistical bulletin.

Prevalence and patterns of use

Cocaine use among the general population

Overall, cocaine remains the second most used illicit drug in Europe, after cannabis, though levels of use vary greatly between countries. It is estimated that about 14 million Europeans have used it at least once in their life, on average 4.1 % of adults aged 15–64 years (see Table 8 for a summary of the data). National figures vary from 0.1 % to 9.4 %, with 12 out of 24 countries, including most central and east European countries, reporting low levels of lifetime prevalence (0.5–2 %).

It is estimated that about 4 million Europeans have used the drug in the last year (1.3 % on average), although again with variation between countries. Recent national surveys report last year prevalence estimates of between zero and 3.1 %. The prevalence estimate for last month cocaine use in Europe represents about 0.5 % of the adult population or about 2 million individuals.

A small number of countries report levels of cocaine use above the European average (Denmark, Spain, Ireland, Italy, United Kingdom). In all but one of these countries, cocaine is the most commonly used illicit stimulant drug. The exception is Denmark, which reports similar prevalence for cocaine and amphetamines use.

Cocaine use among young adults

In Europe, it is estimated that about 8 million young adults (15–34 years), or an average of 5.9 %, have used cocaine at least once in their life. National figures vary from 0.1 % to 14.9 %. The European average for last year use of cocaine among this age group is estimated at 2.3 % (about 3 million) and for last month use at 0.9 % (1.5 million).

Use is particularly high among young males (15–34 years), with last year prevalence of cocaine use reported at between 4 % and 8.4 % in Denmark, Spain, Ireland, Italy and the United Kingdom ([85]). In 12 of the reporting countries, the male to female ratio for last year prevalence of cocaine use among young adults is at least 2:1 ([86]).

Table 8: Prevalence of cocaine use in the general population — summary of the data

Age group	Time frame of use		
	Lifetime	Last year	Last month
15–64 years			
Estimated number of users in Europe	14 million	4 million	2 million
European average	4.1 %	1.3 %	0.5 %
Range	0.1–9.4 %	0.0–3.1 %	0.0–1.5 %
Lowest-prevalence countries	Romania (0.1 %) Malta (0.4 %) Lithuania (0.5 %) Greece (0.7 %)	Romania (0.0 %) Greece (0.1 %) Hungary, Poland, Lithuania (0.2 %) Malta (0.3 %)	Romania, Greece (0.0 %) Malta, Sweden, Poland, Lithuania, Estonia, Finland (0.1 %)
Highest-prevalence countries	United Kingdom (9.4 %) Spain (8.3 %) Italy (7.0 %) Ireland (5.3 %)	Spain (3.1 %) United Kingdom (3.0 %) Italy (2.1 %) Ireland (1.7 %)	United Kingdom (1.5 %) Spain (1.1 %) Italy (0.7 %) Austria (0.6 %)
15–34 years			
Estimated number of users in Europe	8 million	3 million	1.5 million
European average	5.9 %	2.3 %	0.9 %
Range	0.1–14.9 %	0.1–6.2 %	0.0–2.9 %
Lowest-prevalence countries	Romania (0.1 %) Lithuania (0.7 %) Malta (0.9 %) Greece (1.0 %)	Romania (0.1 %) Greece (0.2 %) Poland, Lithuania (0.3 %) Hungary (0.4 %)	Romania (0.0 %) Greece, Poland, Lithuania (0.1 %) Hungary, Estonia (0.2 %)
Highest-prevalence countries	United Kingdom (14.9 %) Spain (11.8 %) Denmark (9.5 %) Ireland (8.2 %)	United Kingdom (6.2 %) Spain (5.5 %) Denmark (3.4 %) Ireland (3.1 %)	United Kingdom (2.9 %) Spain (1.9 %) Italy (1.1 %) Ireland (1.0 %)

European prevalence estimates are based on weighted averages from the most recent national surveys conducted from 2001 to 2008/09 (mainly 2004–08), and therefore cannot be attached to a single year. The average prevalence for Europe was computed by a weighted average according to the population of the relevant age group in each country. In countries for which no information was available, the average EU prevalence was imputed. Populations used as basis: 15–64 (334 million) and 15–34 (133 million). The data summarised here are available under 'General population surveys' in the 2010 statistical bulletin.

([85]) See Figure GPS-13 in the 2010 statistical bulletin.
([86]) See Table GPS-5 (part iii) and (part iv) in the 2010 statistical bulletin.

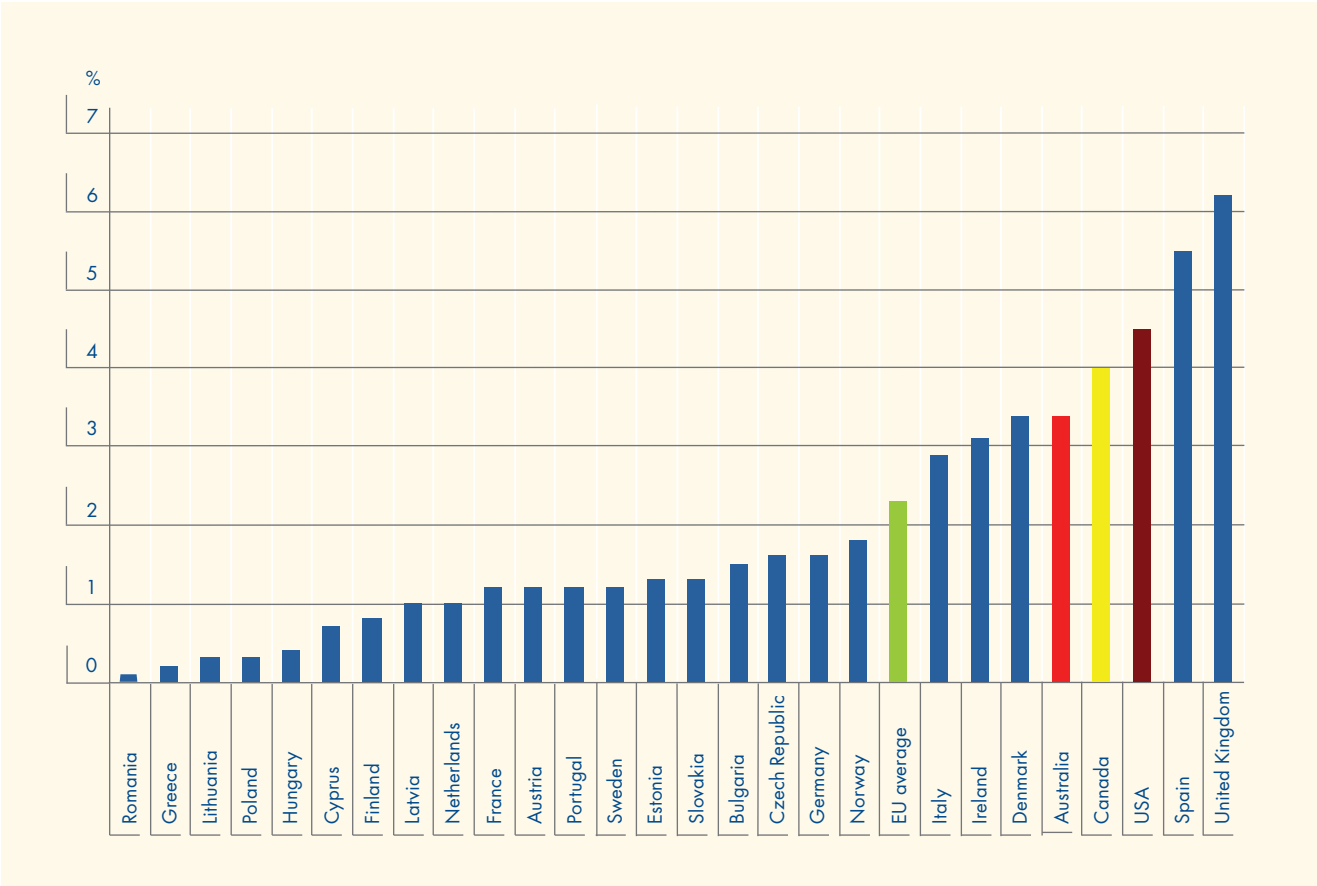
Cross-sectional population and targeted surveys have shown that cocaine use is associated with specific lifestyles and settings. For example, an analysis of data from the 2008/09 British Crime Survey found that among 16- to 24-year-olds who made four or more visits to a nightclub in the last month, 14.2 % report last year use of cocaine, compared with 4.0 % among those who had not visited a nightclub (Hoare, 2009). Targeted surveys recently conducted in electronic dance or music settings in the Czech Republic, the Netherlands, Austria and the United Kingdom reported very high lifetime cocaine use, ranging from 17.6 % up to 86 %. Cocaine use can also be directly associated with these settings: in a survey of Amsterdam club-goers in 2008, 4.6 % of the 646 respondents reported having used cocaine during the evening of the survey, while an on-site survey among 323 clubbers in the United Kingdom reported that 22 % had taken or planned to take cocaine during the evening.

Data from general population surveys also reveal that the prevalence of heavy episodic drinking ([87]) is much higher among cocaine users than in the general population (EMCDDA 2009d). The Netherlands also reports that users may take cocaine in order to sober up after excessive drinking.

Cocaine use among school students

Estimates of the prevalence of cocaine use among school students are much lower than those for cannabis use. Lifetime prevalence of cocaine use among 15- to 16-year-old school students in the 2007 ESPAD survey was between 1 % and 2 % in half of the 28 reporting countries. Most of the remaining countries reported

Figure 7: Last year prevalence of cocaine use among young adults (aged 15–34) in Europe, Australia, Canada and the USA



NB: Data are from the last survey available for each country. The European average prevalence rate was calculated as the average of the national prevalence rates weighted by national population of 15- to 34-year-olds (2006, taken from Eurostat). US and Australian data have been recalculated from original survey results to the age bands 16–34 and 14–39 years respectively. See Figure GPS-20 in the 2010 statistical bulletin for further information.

Sources: Reitox national focal points.
SAMHSA (USA), Office of Applied Studies. National survey on drug use and health, 2008.
Canada: Canadian Alcohol and Drug Use Monitoring Survey.
Australian Institute of Health and Welfare 2008. 2007 National Drug Strategy Household Survey: detailed findings. Drug statistics series No 22. Cat. No PHE 107. Canberra: AIHW.

([87]) Defined as drinking six glasses or more of an alcoholic drink on the same occasion at least once a week during the past 12 months.

prevalence levels of between 3 % and 4 %, while France and the United Kingdom reported 5 % and 6 % respectively. Where data are available from older school students (17–18 years old), lifetime prevalence of cocaine use is generally higher, rising to 8 % in Spain ([88]).

International comparisons

Overall, the estimated last year prevalence of cocaine use is lower among young adults in the European Union (2.3 %) than among their counterparts in Australia (3.4 % among 14–39 years old), Canada (4.0 %) and the United States (4.5 % among 16–34 years old). However, Denmark reports the same figure as Australia, while Spain and the United Kingdom report higher figures than Canada and the United States (Figure 7).

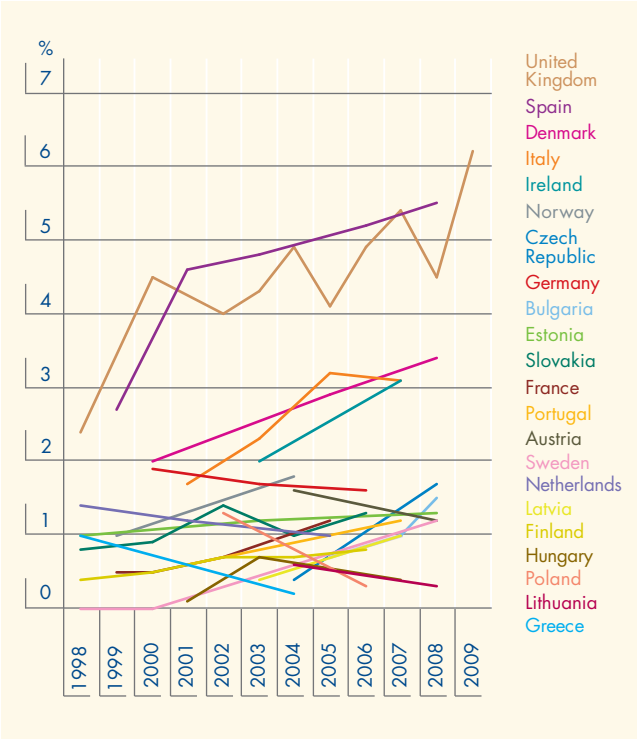
Trends in cocaine use

Trends in cocaine use in Europe have followed different patterns. In the two countries with the highest prevalence of cocaine use (Spain, United Kingdom), the use of the drug increased dramatically in the late 1990s, before moving to a more stable, though generally upward, trend. In three other countries (Denmark, Ireland, Italy), the increase in prevalence has been less pronounced and occurred later. Nevertheless, levels of use in these countries are high by European standards. Among the other countries with repeated surveys between 1998 and 2008/09, last year prevalence among young adults (15–34 years) appears more stable, with levels remaining below 2 % during the period (Figure 8).

When looking at more recent trends, among the 15 countries with repeated surveys during the period 2003–08, last year prevalence among young adults (15–34 years) at least doubled but still remained below 2 % in three countries (Bulgaria, Czech Republic, Latvia). It increased by about 50 % in two countries (Ireland, United Kingdom) and was stable or decreased in eight countries (Germany, Estonia, Lithuania, Hungary, Austria, Poland, Slovakia, Finland).

In the ESPAD school surveys carried out in 2007, lifetime prevalence of cocaine use among 15- to 16-year-old school students had increased by at least two percentage points since 2003 in France, Cyprus, Malta, Slovenia and Slovakia. The Spanish school survey reported a decrease of two percentage points between 2004 and 2007. Among the five countries that conducted school surveys in 2008, no changes greater than 1 % were reported.

Figure 8: Trends in last year prevalence of cocaine use among young adults (aged 15–34)



NB: See Figure GPS-14 (part i) in the 2010 statistical bulletin for further information.
Source: Reitox national focal points.

Patterns of cocaine use

In some European countries, a substantial number of people use cocaine experimentally only once or twice (Van der Poel et al., 2009). Among more regular or intensive cocaine users, two broad groups can be distinguished. The first group is made up of 'socially integrated' users who tend to use cocaine at weekends, parties or other special occasions, sometimes in large amounts ('binges') or frequently. Many socially integrated users report controlling their cocaine use by setting rules, for example, about the amount, frequency or context of use (Decorte, 2000). Some of these users may suffer health problems related to their use of cocaine or go on to develop compulsive patterns of use that require treatment. Studies suggest, however, that a substantial proportion of those with cocaine-related problems may recover without formal treatment (Cunningham, 2000).

The second group includes more 'marginalised' or 'socially excluded' users, including former or current opioid users who may use crack or inject cocaine. Also in this group are intensive cocaine and 'crack' users belonging to socially disadvantaged groups, such as sex workers or immigrants (Prinzleve et al., 2004).

([88]) See Tables EYE-3 to EYE-10 in the 2010 statistical bulletin.

Health consequences of cocaine use

The health consequences of cocaine use are likely to be underestimated. This is due partly to the often unspecific or chronic nature of the pathologies typically arising from long-term use of cocaine, and also to the difficulties in establishing causal links between the illness and the use of the drug ([89]). Regular use, including by snorting, can be associated with cardiovascular, neurological and psychiatric problems, and the risk of accidents and of transmission of infectious diseases through unprotected sex (Brugal et al., 2009). A study conducted in the United States also showed that about 5 % of cocaine users can become dependent in the first year of use, though not more than about 20 % of users developed dependence in the long term (Wagner and Anthony, 2002).

Studies in countries with high levels of use indicate that a considerable proportion of cardiac problems in young people could be related to cocaine use (Qureshi et al., 2001). In these countries, cocaine use also appears to be involved in a significant proportion of drug-related hospital emergencies; for example, 32 % in the Netherlands, and the majority in Spain and in the United States. A recent study in Spain among 720 18- to 20-year-old regular cocaine users, who were not regular heroin users, found that 27 % had experienced acute cocaine intoxication during the last year. Of these, 35 % presented symptoms of psychosis (hallucinations or delirium) and more than 50 % chest pain (Santos et al., in press).

Cocaine injection and crack use are associated with the highest health risks, including cardiovascular and mental health problems. These are generally aggravated by social marginalisation and additional specific problems, such as the risks associated with injection, including the transmission of infectious diseases and overdoses (EMCDDA, 2007c).

Overall, there are indications of a significant and probably increasing health burden related to cocaine use in Europe, which is not yet fully identified and recognised. Concerns have also been recently raised regarding the association between cocaine use and violent crimes in the night-time economy (Measham and Moore, 2009).

Levamisole as a cocaine adulterant

Adulterants or 'cutting agents' are substances intentionally added to drugs, in particular to powdered drugs, to increase the sale value and economic benefit. They are distinguished from impurities, which are small quantities of unwanted substances from the synthetic process (King, 2009).

Cocaine, because of its high value, may be cut several times with one or more substances. These may be inert diluents (such as sugars and starch) that increase the volume of the drug. Pharmacologically active adulterants may also be used to enhance or mimic the drug's effects or improve its appearance. This category includes analgesics (e.g. paracetamol), local anaesthetics (e.g. lidocaine), antihistamines (e.g. hydroxyzine), diltiazem and atropine (Meijers, 2007).

The use of levamisole (l-tetramisole) as a cocaine adulterant has been reported in the United States and Europe since 2004. Levamisole is used as an anti-parasitic agent in veterinary medicine and was formerly used in human medicine as an immunostimulant. When used over a long period and in high doses, it may cause adverse effects, of which agranulocytosis ([1]) is the most alarming.

Levamisole is not routinely identified in cocaine seizures, and is rarely quantified. The available information, however, indicates an increase in both the proportion of cocaine samples adulterated with levamisole and the concentration of levamisole in the drug. This led the European early-warning system (see Chapter 8) to issue a warning and to launch an additional data collection. A public health warning issued in the United States announced that over 70 % of cocaine seizures analysed in 2009 contained levamisole ([2]) and by the end of that year 20 confirmed or probable cases of agranulocytosis (with two fatalities) had been reported in the country. The number of cases in relation to the number of cocaine users appears, however, to be very low.

([1]) Agranulocytosis is a haematological condition that can lead to rapidly-developing life threatening infections.
([2]) SAMHSA news release.

Problem cocaine use and treatment demand

Regular cocaine users, those who use it over long periods and those who inject the substance are defined, by the EMCDDA, as problem cocaine users. Estimates of the size of this population provide an approximation of the number of people potentially in need of treatment.

Socially integrated problem cocaine users are, however, under-represented in these estimates, though they may also be in need of treatment. National estimates of problem cocaine users are available only for Italy, while regional and crack cocaine estimates are available for the United Kingdom (England). In Italy, the number of problem cocaine users was estimated at about 172 000 (between 4.2 and 4.6 per 1 000 aged 15–64) in 2008 ([90]). Trend data on problem cocaine use and other data sources point to a gradual increase in cocaine use in Italy.

Crack use is very unusual among socially integrated cocaine users, and occurs mainly among marginalised

([89]) See the box 'Deaths caused by cocaine' in Chapter 7.
([90]) See Table PDU-102 (part i) in the 2010 statistical bulletin.

and disadvantaged groups such as sex workers, problem opioid users and, sometimes, specific ethnic minorities (e.g. France, Netherlands, United Kingdom). It is mainly observed in some European cities (Prinzleve et al., 2004; Connolly et al., 2008). Most of the treatment demands related to crack use and most of the crack seizures in Europe are reported by the United Kingdom. Crack use is also considered to be a major component of London's drugs problem. Estimates of problem crack cocaine use in England from 2006/07 range from 1.4 to 17 cases per 1 000 inhabitants aged 15–64, with a national average of 5.2–5.6 cases per 1 000 ([91]). It is estimated that more than two thirds of problem crack users are also problem opioid users.

In the countries with the highest prevalence levels, powder or crack cocaine is often used by opioid users undergoing substitution treatment (mainly Spain, Italy, Netherlands, United Kingdom). Cocaine and alcohol use are also correlated among patients in substitution treatment.

Treatment demand

Cocaine, mainly powder cocaine, was cited as the principal reason for entering treatment by about 17 % of all drug treatment clients in 2008, corresponding to about 70 000 cases in 27 European countries. Among those entering treatment for the first time in their life, the proportion of primary cocaine users was higher (24 %).

There are wide differences between countries regarding the proportion and number of primary cocaine clients. The highest proportions are reported by Spain (46 %), the Netherlands (33 %) and Italy (28 %). In Belgium, Ireland, Cyprus, Luxembourg and the United Kingdom, cocaine clients represent between 11 % and 15 % of all drug clients. Elsewhere in Europe, cocaine accounts for less than 10 % of drug treatment clients, with eight countries reporting less than 1 % ([92]).

The number of clients entering drug treatment for primary cocaine use has been increasing in Europe for several years, though the trend is strongly influenced by a few countries (Spain, Italy, Netherlands, United Kingdom). Based on 17 reporting countries, the number of cocaine clients entering treatment increased from about 37 000 in 2003 to 52 000 in 2008, while their proportion grew from 17 % to 19 % of all clients. Among clients entering drug treatment for the first time, the number of cocaine clients increased from about 18 000 to 28 000 and their proportion from 22 % to 27 % (based on 18 countries). Among the countries with the highest numbers of cocaine clients, since 2005 a stable situation or a downward trend in the number and proportion of new clients citing cocaine as their principal drug is reported in Spain, Italy and the Netherlands, while the United Kingdom reports an increase ([93]).

Profile of treatment clients

Nearly all cocaine clients are reported by outpatient treatment centres, although some cocaine users might be treated in private clinics, which are almost unrepresented in the current monitoring system.

Outpatient cocaine clients have one of the largest male to female ratios (five men for every woman) and one of the highest mean ages (about 32 years) among drug treatment clients. This is particularly the case in some countries with large numbers of primary cocaine clients, especially Italy, where their sex ratio is 6:1 and the mean age is 34 years. Primary users of cocaine report an older age at first use of their main drug (22.3 years, 87 % before the age of 30) compared to primary users of other drugs, and the average time lag between first cocaine use and first treatment entry is about nine years.

Most cocaine clients snort (63 %) or smoke (31 %) the drug, while only 3 % report injecting it ([94]). Almost half of them have used the drug one to six times a week in the month before entering treatment, 26 % have used it daily and 25 % have not used it during that period ([95]). An analysis of treatment data from 14 countries in 2006 revealed that about 63 % of cocaine clients are polydrug users. Among them, 42 % also use alcohol, 28 % cannabis and 16 % heroin. Cocaine is also mentioned as a secondary drug among 32 % of outpatient clients, especially primary heroin users (EMCDDA, 2009d).

In 2008, about 10 000 clients are reported to have entered outpatient treatment for primary use of crack cocaine, representing 16 % of all cocaine clients and 3 % of all drug clients entering outpatient treatment. Most crack clients (about 7 500) are reported by the United Kingdom, where they account for 42 % of the cocaine clients and 5.6 % of all drug clients. The Netherlands also reports that crack clients made up a sizeable proportion of all treatment entrants in 2008 ([96]).

([91]) See Table PDU-103 (part ii) in the 2010 statistical bulletin.
([92]) See Figure TDI-2 and Tables TDI-5 (part i) and (part ii) and TDI-24 in the 2010 statistical bulletin; data for Spain refer to 2007.
([93]) See Figures TDI-1 and TDI-3 in the 2010 statistical bulletin.
([94]) See Table TDI-17 (part iv) in the 2010 statistical bulletin.
([95]) See Table TDI-18 (part ii) in the 2010 statistical bulletin.
([96]) From 2008, the Netherlands considers cocaine clients reporting 'smoking' as the route of administration as crack users. This has led to a marked increase on the numbers reported in previous years. Insufficient identification of crack clients may also exist in other countries.

Overall, two main groups of cocaine clients have been identified in treatment: socially integrated individuals using powder cocaine; and a more marginalised group of clients, using cocaine, often crack cocaine, in combination with opioids. The first group typically reports snorting the drug, and sometimes consuming it in conjunction with other substances such as alcohol or cannabis, but not with opioids. Some members of this group are referred to treatment by the criminal justice system. The second group often reports injecting drugs, uses both cocaine and opioids, sometimes smokes crack and presents precarious health and social conditions. In this group, which includes former heroin users re-entering drug treatment for cocaine use, the identification of the primary drug can be difficult (NTA, 2010) ([97]).

Treatment and harm reduction

Treatment provision

In Europe, treatment for dependence on cocaine and crack cocaine is generally provided in specialist outpatient treatment services. With no effective pharmacotherapy currently available, cocaine clients are provided with psychosocial treatment such as counselling and cognitive-behavioural therapies. Some countries provide guidelines for the treatment of cocaine problems (e.g. Germany, United Kingdom). Guidelines in the United Kingdom recommend, depending on the client's needs, three to 20 treatment sessions that aim at resolving ambivalence about change, improving recognition of and controlling cocaine-use cues and urges, reducing cocaine-related harm and preventing relapse (NTA, 2006).

Pharmacotherapy is generally used in Europe to provide relief for symptoms of cocaine dependence, particularly anxiety. A qualitative study investigating current cocaine treatment practices in France found that, despite limited evidence of effectiveness, specific medications, such as methylphenidate, modafinil or topiramate, were prescribed to reduce craving or for substitution purposes (Escots and Suderie, 2009).

Public drug treatment facilities in Europe are mostly oriented towards the needs of opioid users, and socially integrated powder cocaine users may be reluctant to present for treatment due to the perceived stigma. Denmark, Ireland, Italy and Austria have therefore developed specific programmes for this population. A common feature is that treatment can be provided outside regular opening hours to accommodate work commitments and provide discretion.

Two recent studies investigated the effectiveness of psychosocial treatment provided to powder cocaine (NTA, 2010) and crack cocaine users (Marsden et al., 2009) in English treatment centres. Both compared changes in drug use before and after six months of treatment (or earlier in case of discharge). In the first study, 61 % of powder cocaine users (1 864 out of 3 075) had stopped using the drug and a further 11 % had significantly reduced their use. In the second study, 52 % of crack cocaine users (3 941 out of 7 636) were abstinent after six months of treatment. Less positively, it was found that opioid substitution treatment was not as effective with clients using heroin and crack cocaine as with those using only heroin. This finding confirms the detrimental effects of concomitant cocaine or crack cocaine use on the outcomes of substitution treatment, and underlines the need to develop new strategies to treat combined heroin and cocaine or crack cocaine dependence.

Recent studies for the treatment of cocaine dependence

Over 50 different drugs have been evaluated for treating cocaine dependence. Not one has yet been found to be clearly effective, and neither the European Medicines Agency nor the American Food and Drug Administration has approved any drug for the treatment of cocaine dependence (Kleber et al., 2007). However, more than 100 ongoing randomised controlled trials are registered to test new substances, sometimes in association with psychological interventions.

The use of disulfiram, a substance that interferes with the metabolism of alcohol, was associated with

Cocaine vaccine

A cocaine vaccine was first tested in the early 1990s in animal studies. Once administered, it induces the production of antibodies that bind to cocaine molecules in the bloodstream and, thereby, allow naturally occurring enzymes to convert them into inactive molecules.

The first randomised controlled trial of the vaccine was conducted in the United States, and involved 115 subjects undergoing opioid substitution treatment. The study found that subjects who received the vaccine and obtained an appropriate level of antibodies remained abstinent. However, only about four in 10 (38 %) vaccinated opioid users reached a level of antibodies that provided a two-month cocaine blockade (Martell et al., 2009). Similar results were observed in a later study covering 10 male cocaine users who smoked the drug, were dependent and not seeking drug treatment.

([97]) See Tables TDI-10, TDI-11 (part iii), TDI-21 and TDI-103 (part ii) in the 2010 statistical bulletin.

a reduction in cocaine use among patients also suffering from alcoholism. The reduction was attributed to the diminution of alcohol-related disinhibition and impaired judgement. Recent studies have also found a direct impact of disulfiram on the metabolism of cocaine. However, given the limited quality of the evidence, it was suggested that clinicians should balance possible benefits against the potential adverse effects of disulfiram (Pani et al., 2010).

The use of a number of anticonvulsant agents was assessed in 15 studies covering 1 066 patients (Minozzi et al., 2009). The drugs were not significantly better than the placebo in keeping patients in treatment, reducing the number and type of side effects or reducing cocaine use. Antipsychotic agents were assessed in seven studies covering 293 patients (Amato et al., 2009). The studies were generally too small to confirm possible effects, but the available results do not support the use of these drugs in the treatment of cocaine dependence.

Among patients undergoing opioid substitution treatment, it was found that the use of bupropion, dextroamphetamine and modafinil are associated with higher rates of sustained cocaine abstinence than are achieved with a placebo (Castells et al., 2010).

Among non-pharmacological interventions, some psychosocial interventions provided positive results in reducing drop-out rates, reducing cocaine use and improving attendance, in particular when provided along with contingency management with vouchers (Knapp. et al., 2007). Several ongoing studies are further investigating the effects of incentives-based interventions, in some cases in association with behavioural therapy and pharmacological interventions. Finally, treatment with auricular acupuncture did not provide significant results (Gates et al., 2006).

Harm reduction

Harm-reduction interventions targeting problem crack and cocaine users are a new area of work in many Member States. One reason for the limited provision of interventions in this field, in particular for crack users, might be a lack of knowledge among key workers about the drug, the target group and their needs. A recent review of harm-reduction interventions for stimulant users concluded that more attention had been given to specifying cocaine-related harms than to developing interventions to reduce them (Grund et al., 2010).

Member States usually provide cocaine injectors with the same services and facilities as are provided to opioid users, including recommendations for safer use, training for safer injecting and needle and syringe programmes. However, cocaine injecting is associated with increased risks of equipment sharing and with frequent injection, which can lead to vein collapse and to injecting in higher-risk parts of the body (e.g. legs, hands, feet and groin). Therefore, safer use recommendations should be adapted to these specific risks and one-for-one syringe exchange policies should be avoided. Due to the potential high frequency of injecting, the supply of sterile equipment to injectors should not be restricted (van Beek et al., 2001). Clean crack pipes are also provided in some countries by low-threshold agencies (Spain, France).

Harm-reduction interventions targeting powder cocaine users in recreational settings focus mainly on raising awareness. Programmes offer advice and information to young people on the risks associated with alcohol and drug use in general, usually including material on the risks of cocaine use. Apart from awareness raising, harm-reduction options for this target group, which constitutes the vast majority of cocaine users in Europe, are almost non-existent.

Chapter 6

Opioid use and drug injection

Introduction

Heroin use, particularly injecting the drug, has been closely associated with public health and social problems in Europe since the 1970s. Today, this drug still accounts for the greatest share of morbidity and mortality related to drug use in the European Union. A decline in heroin use and associated problems has been observed during the late 1990s and the early years of the present century, though more recent data suggest that, in some countries, the trend may have changed direction. In addition, reports of the use of synthetic opioids, such as fentanyl, and the injection of stimulant drugs, such as cocaine or amphetamines, reflect the increasingly multifaceted nature of problem drug use in Europe.

Supply and availability

Two forms of imported heroin have historically been offered on the illicit drugs market in Europe. These are the commonly available brown heroin (its chemical base form), which comes mainly from Afghanistan, and white heroin (a salt form), which typically originates from south-east Asia, though this form is considerably less common. In addition, some opioid drugs are produced within Europe, principally home-made poppy products (e.g. poppy straw, concentrate from crushed poppy stalks or heads) in some east European countries (e.g. Latvia, Lithuania).

Production and trafficking

Heroin consumed in Europe originates predominantly in Afghanistan, which accounts for most of the global illicit opium output. The other producing countries are Myanmar, which mainly supplies markets in east and south-east Asia, Pakistan and Laos, followed by Mexico and Colombia, which are considered the largest suppliers of heroin to the United States (UNODC, 2009). Global opium production is estimated to have decreased from a peak in 2007, mainly due to a decline in Afghan production, which has fallen from 8 200 tonnes to 6 900 tonnes in 2009. The most recent estimate of global potential heroin production is 657 tonnes, down from estimated levels of about 750 tonnes in 2007 and 2008 (UNODC, 2010b).

Heroin arrives in Europe mainly by two trafficking routes. The historically important Balkan route brings heroin produced in Afghanistan through Pakistan, Iran and Turkey, and then through other transit or destination countries (Albania, Hungary, Bulgaria, Czech Republic, the former Yugoslav republics, Romania, Slovakia, Austria, Italy). Heroin also enters Europe by the 'silk route' via central Asia and Russia, and then through Belarus, Poland and Ukraine to, among others, Scandinavian countries via Lithuania (INCB, 2010b). Within the European Union, the Netherlands and, to a lesser extent, Belgium play an important role as secondary distribution hubs.

Table 9: Production, seizures, price and purity of heroin

Production and seizures	Heroin
Global production estimate (tonnes)	657
Global quantity seized (tonnes)	
Heroin	75
Morphine	17
Quantity seized (tonnes)	
EU and Norway	8
(Including Croatia and Turkey)	(24)
Number of seizures	
EU and Norway	54 400
(Including Croatia and Turkey)	(56 600)
Price and purity in Europe [1]	**Brown heroin**
Mean retail price (EUR per gram)	
Range	25–133
(Interquartile range) [2]	(33–80)
Mean purity (%)	
Range	7–43

[1] Since few countries report the retail price and the purity of white heroin, the data are not presented in the table. They can be consulted in Tables PPP-2 and PPP-6 in the 2010 statistical bulletin.
[2] Range of the middle half of the reported mean price or purity.
NB: Data are for 2008 except the global production estimate (2009).
Sources: UNODC (2010b) for global values, Reitox national focal points for European data.

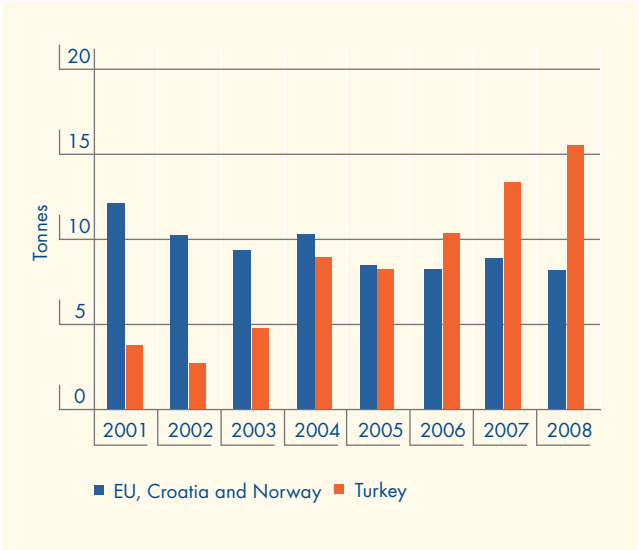
Seizures

Worldwide reported seizures of opium increased markedly between 2007 and 2008, from 510 to 657 tonnes (Table 9). Iran accounted for more than 80 % of the total and Afghanistan for about 7 %. Global reported seizures of heroin increased to 75 tonnes in 2008, while global seizures of morphine decreased to 17 tonnes (UNODC, 2010b).

In Europe, an estimated 56 600 seizures resulted in the interception of 23.6 tonnes of heroin in 2008. The United Kingdom continued to report the highest number of seizures, while Turkey again reported the greatest quantity seized, with 15.5 tonnes recovered in 2008 ([98]). Data for the years 2003–08 from 26 reporting countries indicate that the number of seizures has increased since 2003. The overall trend in the quantity of heroin intercepted in Turkey differs from that observed in the European Union (Figure 9). While Turkey reported a threefold increase in the quantity of heroin seized between 2003 and 2008, the amount seized in the European Union has shown a limited decline during this period, mainly due to decreases reported in Italy and the United Kingdom, the two countries seizing the largest quantities in the European Union ([99]).

Global seizures of acetic anhydride (used to manufacture heroin) increased from 57 300 litres in 2007 to 199 300 litres in 2008, with the largest quantities seized reported by Slovenia (86 100 litres) and Hungary (63 600 litres). The INCB encourages the EU Commission and EU Member States to prevent the diversion of acetic anhydride from the internal market (INCB, 2010a).

Figure 9: Estimated quantities of heroin seized in the European Union, Croatia and Norway, and in Turkey



NB: The total amount of heroin seized is based on data from all EMCDDA reporting countries (27 EU Member States, Croatia, Turkey and Norway). Missing data were extrapolated from data for adjacent years.
Source: Reitox national focal points.

Purity and price

In 2008, the mean purity of brown heroin tested ranged between 15 % and 30 % for most reporting countries; lower mean values were reported in France (11 %), Austria (retail only, 11 %) and Turkey (retail only, 7 %), and higher ones in Bulgaria (31 %), Portugal (32 %), Romania (43 %) and Norway (31 %). Between 2003 and 2008, the purity of brown heroin increased in eight countries, while in four others it remained stable or decreased. The mean purity of white heroin was generally higher (30–50 %) in the few European countries reporting data ([100]).

The retail price of brown heroin continued to be higher in the Nordic countries than in the rest of Europe, with Sweden reporting a mean price of EUR 133 per gram and Denmark EUR 107. In eight other reporting countries, the retail price of brown heroin ranged between EUR 25 and EUR 80 per gram. Over the period 2003–08, the retail price of brown heroin increased in five of the nine European countries reporting time trends, and decreased in four. In the few countries reporting the retail price of white heroin, it ranged between EUR 24 and EUR 213 per gram in 2008.

Prevalence estimates of problem opioid use

Data in this section are derived from the EMCDDA problem drug use (PDU) indicator, which includes mainly injecting drug use and the use of opioids, although in a few countries users of amphetamines or cocaine constitute an important component. Given the relatively low prevalence and the hidden nature of problem drug use, statistical extrapolations are required to obtain prevalence estimates from the available data sources (mainly drug treatment data and law enforcement data). Most countries are able to provide specific estimates of 'problem opioid users', but it is worth noting that these are often polydrug users, and prevalence figures are often much higher in urban areas and among socially excluded groups.

Estimates of the prevalence of problem opioid use in European countries during the period 2003–08

([98]) See Tables SZR-7 and SZR-8 in the 2010 statistical bulletin. Note that where data for 2008 are absent, the data for 2007 are used to estimate European totals.
([99]) This analysis is preliminary as data for the United Kingdom are not yet available for 2008.
([100]) See Tables PPP-2 and PPP-6 in the 2010 statistical bulletin for purity and price data.

range roughly between one and eight cases per 1 000 population aged 15–64 (Figure 10); overall prevalence of problem drug use is estimated to range from two to 10 cases per 1 000. The countries reporting the highest well-documented estimates of problem opioid use are Ireland, Malta, Italy and Luxembourg, while the lowest are reported by the Czech Republic, Cyprus, Latvia, Poland and Finland (both the Czech Republic and Finland have large estimates of problem users of amphetamines). Only Turkey reports figures of less than one case per 1 000 population aged 15–64.

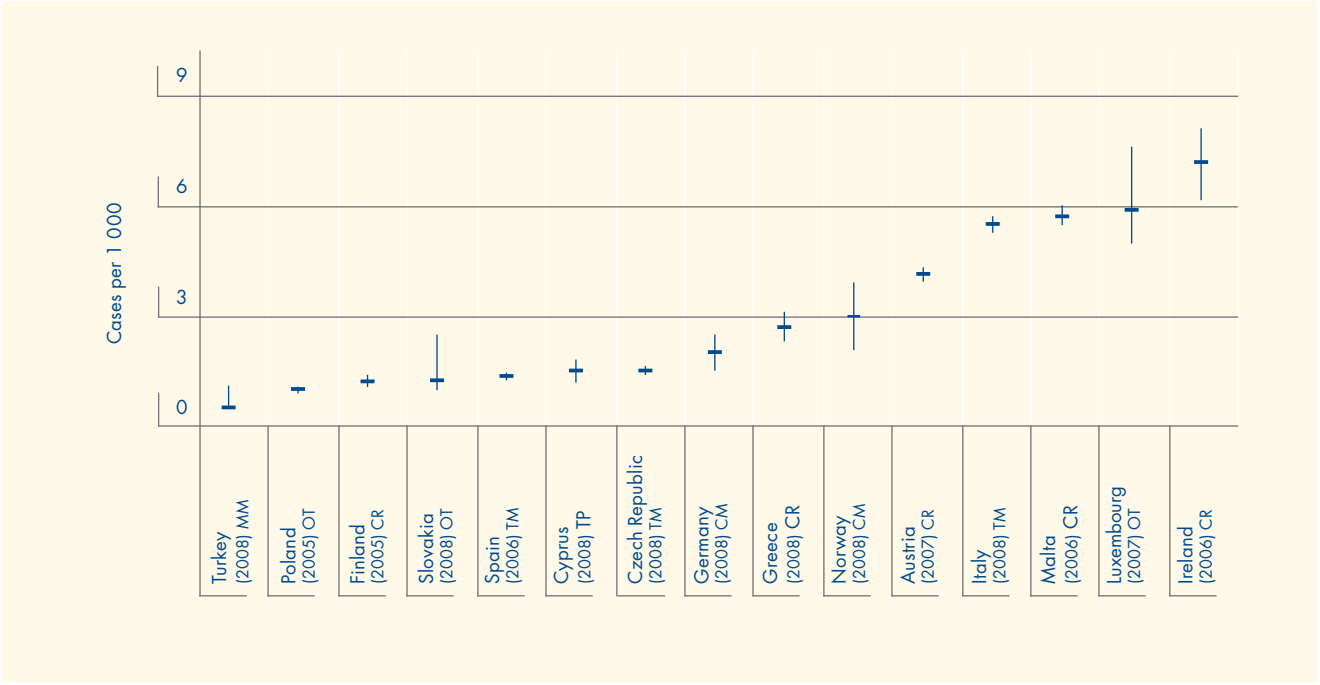
The average prevalence of problem opioid use in the European Union and Norway is estimated to be between 3.6 and 4.4 cases per 1 000 population aged 15–64. This corresponds to some 1.35 million (1.2 million–1.5 million) problem opioid users in the European Union and Norway in 2008 ([101]). This estimate includes users in substitution treatment, but prisoners, especially those with longer sentences, may be under-represented.

Opioid users in treatment

Opioids continued to be cited as the primary drug by the majority (53 %) of those entering specialised drug treatment in 2008 in Europe, with heroin being cited by 48 % of all clients ([102]). However, considerable differences exist across Europe in the proportion of drug users entering treatment for problems related to these drugs, with opioid clients accounting for more than 90 % of those entering treatment in Bulgaria, Estonia and Slovenia, between 50 % and 90 % in 15 other countries, and between 10 % and 49 % in a further nine ([103]). In addition to the about 200 000 treatment entrants declaring opioids as their primary drug in 2008, a further 47 000 users of other drugs cited opioids as a secondary drug ([104]).

Many opioid users are enrolled in programmes providing long-term care, in particular substitution treatment. This is reflected in the higher proportion of primary opioid

Figure 10: Estimates of the annual prevalence of problem opioid use (among population aged 15–64)



NB: A horizontal mark indicates a point estimate; a vertical mark indicates an uncertainty interval: a 95 % confidence interval or one based on sensitivity analysis. Target groups may vary slightly, owing to different estimation methods and data sources; therefore, comparisons should be made with caution. Non-standard age ranges were used in the studies from Finland (15–54), Malta (12–64) and Poland (all ages). All three rates were adjusted to the population aged 15–64. For Germany, the interval represents the highest and lowest bounds of all existing estimates, and the point estimate a simple average of the midpoints. Methods of estimation are abbreviated: CR, capture–recapture; TM, treatment multiplier; MM, mortality multiplier; CM, combined methods; TP, truncated Poisson; OT, other methods. See Figure PDU-1 (part ii) and Table PDU-102 in the 2010 statistical bulletin for further details.

Source: Reitox national focal points.

([101]) This estimate has been adjusted from 1.4 million to 1.35 million on the basis of new data. Because of large confidence intervals and the fact that the estimate is based on data from different years, it is not possible to conclude that there was a decrease in the prevalence of problem opioid use in Europe.

([102]) See Figure TDI-2 (part ii) and Tables TDI-5 and TDI-113 in the 2010 statistical bulletin.

([103]) See Table TDI-5 (part ii) in the 2010 statistical bulletin.

([104]) See Table TDI-22 in the 2010 statistical bulletin.

users among drug users already in treatment from previous years. A recent analysis of data provided by nine countries found that primary opioid users accounted for 61 % of all reported clients in treatment, while they accounted for only 38 % of those entering treatment for the first time ([105]).

Trends in problem opioid use

The limited number of repeated estimates of the incidence and prevalence of problem opioid use, together with the statistical uncertainty around individual estimates, contributes to the difficulty in monitoring time trends. Data from eight countries with repeated prevalence estimates during the period 2003–08 suggest, however, a relatively stable situation. An apparent increase observed in Austria up to 2005 is not supported by the most recent estimate, which is now below the 2003 level. Ireland reported an increase between 2001 and 2006, which was less marked in Dublin (21 %) than outside the capital (164 %) ([106]).

Where adequate and up-to-date estimates of the incidence and prevalence of problem opioid use are not available, it may still be possible to analyse trends over time using data from other, mainly indirect, indicators such as treatment demand. Based on a sample of 19 countries, the overall numbers of primary heroin users entering treatment, and of those entering treatment for the first time, increased between 2003 and 2008 ([107]). Focusing on a more recent time frame, the number of primary opioid users entering treatment increased in 11 countries between 2007 and 2008. For those entering treatment for the first time, the overall upward trend levelled off in 2008, though six countries still reported increased numbers ([108]).

Data on drug-induced deaths in 2008, which are mostly associated with opioid use, provide no indication of a return to the decreasing trend observed until 2003 (see Chapter 7). Over half of the reporting countries recorded increasing numbers of drug-induced deaths between 2007 and 2008 ([109]). The number of heroin seizures in Europe has also increased since 2003, while the quantities seized have decreased in the European Union. The change from a downward to an upward trend reported last year in heroin-related offences is now confirmed, with increases over 2003–08 in most European countries reporting sufficient data.

The use of heroin and opioid medicines by new groups, including socially integrated individuals and visitors to 'techno' parties, was reported by the French 'TREND' system, which relies both on qualitative and quantitative data. Other qualitative studies (Eisenbach-Stangl et al., 2009) also reported a small proportion of heroin users among targeted samples of socially integrated individuals. These may include experimental users and persons who are able to control their use of the drug (Shewan and Dalgarno, 2005; Warburton et al., 2005).

The available data suggest that the downward trend in opioid indicators observed until 2003 has levelled off. This is perhaps most clearly visible since 2003 among seizures and drug-induced deaths, and after 2004 in new treatment demands related to heroin use. These changes have occurred alongside increased opium production in Afghanistan until 2007, raising concerns that these events might be linked through increased availability of heroin on the European market.

Problem opioid use and injecting drug use in countries neighbouring the European Union

Among the countries neighbouring the European Union, Russia has the largest population of opioid users, with reported estimates ranging between 1.5 million and 6 million users (UNODC, 2005). A recent study based on a treatment multiplier method — one of the methods recommended by the EMCDDA — provided an estimate of 1.68 million problem opioid users, which translates into 16 per 1 000 population aged 15–64 (UNODC, 2009). The Russian Federal Drug Control Service estimates that 10 000 heroin users die from an overdose every year (INCB, 2010b). The second-largest population of opioid users at the European Union's borders is likely to be in Ukraine, with an estimate of between 323 000 and 423 000 opioid users. This represents 10–13 cases per 1 000 population aged 15–64 (UNODC, 2009). Perceived increases in opioid use were also reported to UNODC in 2008 by Albania, Belarus and Moldova.

For 2007, it was estimated that there might be 1 825 000 current injecting drug users (17.8 per 1 000 inhabitants aged 15–64) in Russia and 375 000 (11.6 per 1 000) in Ukraine, with close to 40 % of them HIV positive in both countries (Mathers et al., 2008). The rate of newly reported HIV infection among injecting drug users is also much higher in Russia (79 per million in 2006) and in Ukraine (153 per million in 2006) than in other countries and regions of the world such as Australia, Canada, the European Union and the USA (Wiessing et al., 2009).

([105]) See Table TDI-38 in the 2010 statistical bulletin.
([106]) See Tables PDU-6 (part ii) and PDU-102 in the 2010 statistical bulletin for full information about the studies, including confidence intervals.
([107]) See Figures TDI-1 and TDI-3 in the 2010 statistical bulletin.
([108]) Some of the variation over time may be due to changes in data coverage or treatment availability, and overall trends can be strongly influenced by Italy and the United Kingdom, which provide the highest numbers of new heroin clients. See Tables TDI-3 and TDI-5 in the 2009 and 2010 statistical bulletins.
([109]) See Table DRD-2 (part i) in the 2010 statistical bulletin.

Injecting drug use

Injecting drug users are among those at highest risk of experiencing health problems from their drug use, such as blood-borne infections (e.g. HIV/AIDS, hepatitis) or drug overdoses. In most European countries, injection is commonly associated with opioid use, although in a few countries it is associated with use of amphetamines. Only 14 countries were able to provide recent estimates of the prevalence of injecting drug use ([110]), despite their importance for public health. Improving the level of information available on this special population continues to be an important challenge for the development of health monitoring systems in Europe.

The available estimates suggest large differences between countries in the prevalence of injecting drug use. Estimates range from less than one to five cases per 1 000 population aged 15–64 for most of the countries, with an exceptionally high level of 15 cases per 1 000 reported in Estonia. When the latter is excluded as an outlier, the weighted average is about 2.6 cases per 1 000 population aged 15–64 ([111]), which, if extrapolated to the population of the European Union, would correspond to between 750 000 and 1 million active injecting drug users. The number of former injecting drug users is likely to be larger (Sweeting et al., 2008), but is not known for most EU countries.

Opioid users entering specialised drug treatment often report injecting as the usual mode of administration. This is the case for more than half of opioid clients in 16 countries, between 25 % and 50 % in six countries and under 25 % in another five countries. The lowest proportions of injectors among opioid users entering treatment are reported by the Netherlands (5 %) and Spain (19 %), while the highest are reported by Lithuania (99 %), Romania (95 %), Estonia (91 %) and Slovakia (86 %) ([112]).

Drawing conclusions on time trends in the prevalence of injecting drug use is difficult because of the lack of data and the wide confidence intervals of the estimates. Available data suggest, however, a stable situation in the Czech Republic, Greece, Cyprus and Norway ([113]). A statistically significant decrease was observed in the United Kingdom, between the years 2004 and 2006. Among heroin users entering treatment, the proportion of injectors has decreased overall in the last years, with statistically significant decreases between 2002 and 2007 reported by 13 countries. Increases over this period were reported by only three countries (Bulgaria, Lithuania, Slovakia) ([114]). The proportion of injectors is also overall slightly lower among opioid users entering treatment for the first time (38 %) than among all opioid users entering treatment (42 %). This is the case in 20 out of 23 reporting countries. More detailed analysis of the prevalence and trends of injecting drug use is provided elsewhere (EMCDDA, 2010c).

Non-injecting opioid use

Following the stabilisation or decline of opioid injection in several European countries, more attention has been given to other routes of administration such as inhaling the substance as heated vapour (chasing, smoking) or as powder (snorting, sniffing) or ingesting it. Few countries have reported estimates of populations of non-injecting opioid users, with only Norway providing a recent figure. In 2008, it was estimated that smoking was the sole route of drug administration for 1 450 heroin users, or about 15 % of all estimated heroin users in Norway. Data on users entering specialised drug treatment services confirm the presence of sizeable groups of users smoking or sniffing the drug within the opioid-using populations in some countries. For example, smoking was reported as the main route of administration for between half and three quarters of primary opioid users entering outpatient treatment in Belgium, Ireland, Spain, the Netherlands and the United Kingdom. Sniffing was also reported as the main route of administration by about one third of opioid clients in Austria and by about half in Greece and France ([1]).

The choice of route of administration depends on several factors, such as its efficiency, pressure from the social environment, concern about health consequences (Bravo et al., 2003) and the type of opioid used. For example, the commonly available brown heroin (a chemical base form), which comes mainly from Afghanistan, is primarily smoked and chased. White heroin (a salt form), which typically originates from south-east Asia, can easily be snorted up the nose in powder form; it can also be dissolved in cold water without additives and injected, but it can be only very inefficiently smoked or chased. Opioid substitution medicines are commonly distributed in liquid form instead of tablets or can have added substances that reduce or change the drug's effects when injected.

([1]) See Table TDI-17 (part ii) in the 2010 statistical bulletin.

([110]) See Figure PDU-2 in the 2010 statistical bulletin.
([111]) The weighted average is 0.26 %, with an uncertainty range (weighted averages of lower and upper limits of the country estimates) of 0.23 % to 0.30 %, resulting in an estimate of 886 606 (788 778–1 040 852) for 2008. This estimate must be considered with caution as it is based on data available from only 12 of the 27 EU Member States and Norway.
([112]) See Table TDI-5 in the 2010 statistical bulletin.
([113]) See Table PDU-6 (part iii) in the 2010 statistical bulletin.
([114]) See Table PDU-104 in the 2010 statistical bulletin.

Treatment of problem opioid use

Data gathered by the EMCDDA's treatment demand indicator can be used to describe the characteristics of a substantial subgroup of drug users entering treatment and, more specifically, those who have entered specialised drug treatment services during the year.

Clients entering outpatient treatment for primary opioid use are on average 34 years old, with female clients and those entering treatment for the first time being on average younger ([115]). Almost all countries report an increase in the mean age of their opioid clients since 2003. The overall male to female ratio among outpatient opioid clients is 3.5:1, although females make up a higher proportion in northern countries (e.g. Sweden, Finland) and a lower proportion in southern countries (e.g. Greece, Spain, Italy) ([116]).

Opioid users entering treatment have higher rates of unemployment, lower levels of educational attainment and higher levels of psychiatric disorders than clients reporting other primary drugs ([117]). Almost all opioid users entering treatment report initiation before the age of 30 and about half before the age of 20. An average time lag of about 10 years is reported between first use of opioids and first contact with drug treatment ([118]).

Treatment provision and coverage

Treatment for opioid users is mostly conducted in outpatient settings, which can include specialist centres, general practitioners' surgeries and low-threshold facilities (see Chapter 2). In a few countries, inpatient centres are a major component of the drug treatment system, notably in Bulgaria, Greece, Latvia, Poland, Romania, Finland and Sweden ([119]). The range of options available in Europe for the treatment of opioid dependence is broad and increasingly differentiated, though it varies geographically in terms of accessibility and coverage. Drug-free and substitution treatments for opioid use are available in all EU Member States, Croatia and Norway. In Turkey, the use of substitution treatment is currently under study.

Drug-free treatment is a therapeutic approach that generally requires individuals to abstain from all substances, including substitution medication. Patients participate in daily activities and receive intensive psychological support. While drug-free treatment can take place in both outpatient and inpatient settings, the types most commonly reported by Member States are residential programmes that apply therapeutic community principles or the Minnesota model. France and the Czech Republic are currently performing outcome evaluations of their therapeutic communities, with results expected in 2010. Under the French action plan, the availability of this treatment modality is to be expanded in the future. Therapeutic communities are the largest type of drug treatment in Poland. However, for economic reasons and because of changing patient profiles, the duration of treatment programmes is reported to be gradually shortening. Finally, Croatia and Portugal have recently developed guidelines for therapeutic communities.

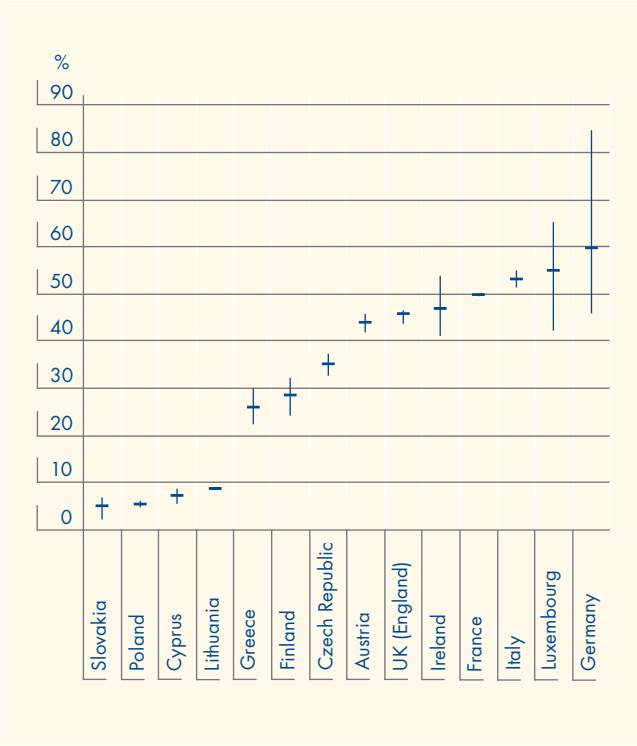
Substitution treatment, generally integrated with psychosocial care, is typically provided at specialised outpatient centres. Thirteen countries report that it is also provided by general practitioners, usually under shared-care arrangements with specialised treatment centres. General practitioners can achieve better results than specialised centres in terms of retention in treatment, abstinence rates and co-consumption of other drugs. This was found in a 12-month naturalistic study of 2 694 clients in substitution treatment in Germany (Wittchen et al., 2008). Other studies have shown that the implementation of substitution treatment in primary care settings is not only feasible but can also be cost-effective (Gossop et al., 2003; Hutchinson et al., 2000).

The total number of opioid users receiving substitution treatment in the European Union, Croatia and Norway is still growing, with an estimated 670 000 clients in 2008, up from 650 000 in 2007 ([120]) and about 500 000 in 2003. Client numbers showed some increase in several central and east European countries, but the countries that joined the European Union after 2004 continue to make up only about 2 % of the total number of opioid substitution clients in the European Union ([121]).

A comparison of the number of substitution treatment clients in the European Union with the estimated number of problem opioid users suggests a treatment coverage rate of about 50 %. However, coverage varies considerably between countries, with rates below 40 % reported by seven of the 14 countries for which estimates of the number of problem opioid users are available, and four of these countries reporting less than 10 % coverage (see Figure 11). Nevertheless, it can be estimated that two

([115]) See Tables TDI-10, TDI-32 and TDI-103 in the 2010 statistical bulletin.
([116]) See Tables TDI-5 and TDI-21 in the 2010 statistical bulletin.
([117]) See also Chapter 2.
([118]) See Tables TDI-11, TDI-33, TDI-107 and TDI-109 in the 2010 statistical bulletin.
([119]) See Table TDI-24 in the 2010 statistical bulletin.
([120]) See Table HSR-3 in the 2010 statistical bulletin.
([121]) See Figure HSR-2 in the 2010 statistical bulletin.

Figure 11: Estimated proportion of problem opioid users undergoing substitution treatment



NB: See Figure HSR-1 in the 2010 statistical bulletin for further information.
Source: Reitox national focal points.

out of three problem opioid users in the European Union live in countries where substitution treatment coverage is high ([122]).

Most substitution clients in Europe receive methadone (70–75 %), but the number of countries where it is the only available substance is decreasing. High-dosage buprenorphine is now available in all but four EU Member States (Bulgaria, Spain, Hungary, Poland), and is used in 20–25 % of all substitution treatments provided in Europe and in more than 50 % in the Czech Republic, France, Cyprus, Latvia, Sweden and Croatia. In France, where buprenorphine has always predominated, methadone is now prescribed to a growing proportion of substitution clients. The buprenorphine–naloxone combination, which was approved by the European Medicines Agency in 2006, has been introduced in 14 countries. Other options, which represent a small percentage of all substitution treatments, include slow-release morphine (Bulgaria, Austria, Slovenia), codeine (Germany, Cyprus, Austria) and diacetylmorphine (heroin). Heroin prescription has now become an established treatment option in Denmark, Germany and the Netherlands; it also exists in Spain and the United Kingdom, and pilot projects are under preparation in Belgium and Luxembourg.

Access to treatment

Regulations about provision and dispensing of opioid substitution treatment are key to its accessibility. Legal frameworks may allow all general practitioners (Belgium, Czech Republic, Denmark, Germany, France, Italy, Cyprus, Netherlands, Portugal, United Kingdom, Croatia) or those who have been specifically trained or accredited (Germany, Ireland, Luxembourg, Austria, Slovenia, Norway) to prescribe one or more substitution substance. In other countries (Bulgaria, Estonia, Greece, Spain, Lithuania, Hungary, Poland, Romania, Slovakia, Finland, Sweden), only specialist treatment centres can provide substitution treatment.

In most European countries, substitution medication can be dispensed by general practitioners, pharmacies or mobile outreach units. This is, however, not the case in Bulgaria, Estonia, Greece, Lithuania, Poland and Slovakia, where only specialist treatment centres can dispense the medication. High-dosage buprenorphine can be dispensed by all general practitioners in the Czech Republic, or any pharmacy in Latvia. In Romania, Hungary and Finland, pharmacies are only entitled to dispense the combination buprenorphine–naloxone. It is reported that as this medication is only recently available and expensive in Hungary and Romania, only small numbers of clients receive it in these two countries.

Information on the cost of opioid substitution medication for clients has recently been collected. Among the 26 reporting countries, 17 indicated that the medication (in most cases methadone) is free of charge unless treatment is sought from private providers. In Belgium and Luxembourg, the client has to pay part of the medication costs only when it is prescribed by a general practitioner. In the Czech Republic, Latvia, Portugal, Hungary and Finland, treatment with methadone is free of charge, but buprenorphine or the combination buprenorphine–naloxone have to be paid for in full or partially by the client. In Latvia, for example, the monthly cost for a daily 8 mg dose of buprenorphine is about EUR 250. Methadone is generally cheaper than other substitution medications with similar effectiveness, such as buprenorphine (WHO, 2009), which partly explains why many national health insurances provide full reimbursement for methadone in preference to other substitution medications. Generic versions of high-dosage buprenorphine, which are cheaper, have been available since 2006 in France, where they are prescribed to approximately 30 000 clients (30 % of all buprenorphine clients).

Information on costs, provision of substitution treatment and dispensing of substitution medicines show regional

([122]) These estimates should be considered with caution as there is still a lack of precision in the data sets.

differences in Europe. Countries in the north and east of Europe often apply a more focused and higher-threshold access model, whereas many countries in the west of Europe implement a multi-site and low-threshold access model. These differences may reflect different models of care, with priority given in some countries to the goal of abstinence and to psychosocial approaches, and in others to the stabilisation and retention of clients and to harm reduction approaches.

Treatment effectiveness and quality

Opioid substitution treatment, combined with psychosocial interventions, was found to be the most effective treatment option for opioid users. In comparison with detoxification or no treatment at all, methadone or high-dosage buprenorphine treatments show significantly better outcomes regarding drug use, criminal activity, risk behaviours and HIV-transmission, overdoses and overall mortality, as well as better rates of retention in treatment (WHO, 2009).

The outcomes of opioid withdrawal are generally low in the long term (Mattick et al., 2009), but it may help patients, if it is their informed choice to undergo this type of treatment. In inpatient or outpatient settings, detoxification is achieved through diminishing doses of methadone or buprenorphine (as preferred treatments) or alpha-2 agonists. Accelerated withdrawal techniques that use opioid antagonists in combination with heavy sedation are not recommended because of safety concerns (Gowing et al., 2010). After opioid withdrawal, patients who are motivated to remain abstinent from opioid use should be advised to consider naltrexone to prevent relapse.

The combination of buprenorphine and naloxone (marketed as Suboxone) was created to prevent the injection of buprenorphine. Nevertheless, its effectiveness in preventing intravenous use of buprenorphine is not yet clear (Bruce et al., 2009; Simojoki et al., 2008).

EMCDDA 'Insight' on heroin-assisted treatment

Heroin-assisted treatment is currently provided to about 1 500 chronic problem opioid users in five EU Member States. Most of these countries, as well as Switzerland and Canada, have conducted experimental trials to assess the outcomes of this type of treatment. In 2011, with the support of a team of international researchers and clinicians, the EMCDDA will publish a study on this type of treatment, reviewing the scientific evidence accumulated in recent years. The 'Insight' will also review the development, operational delivery and clinical practices for heroin-assisted treatment, and describe some of the challenges associated with its implementation. A set of minimum quality standards will also be outlined.

Chapter 7

Drug-related infectious diseases and drug-related deaths

Introduction

Drug use can produce a wide range of negative consequences, such as accidents, mental health disorders, pulmonary diseases, cardiovascular problems, unemployment or homelessness. Harmful consequences are particularly prevalent among problem drug users, whose general health and socioeconomic situation can be far below those in the general population.

Opioid use and injecting drug use are two forms of drug use closely associated with such harms, notably overdoses and the transmission of infectious diseases. The number of fatal overdoses reported in the European Union in the last two decades is equivalent to about one overdose death every hour. Research also shows that, in the last two decades, a large number of drug users have died from other causes, such as AIDS or suicide.

Reducing the mortality and morbidity related to drug use is central to European drug policies. The main efforts in this area are through interventions that are directed at the groups that are most at risk, and targeting the behaviours directly associated with drug-related harms.

Drug-related infectious diseases

Infectious diseases such as HIV and hepatitis B and C are among the most serious health consequences of drug use. Even in countries where HIV prevalence in injecting drug users is low, other infectious diseases including hepatitis A, B, C and D, sexually transmitted diseases, tuberculosis, tetanus, botulism, anthrax and human T-lymphotropic virus may disproportionately affect drug users. The EMCDDA is systematically monitoring HIV and hepatitis B and C infection among injecting drug users ([123]).

HIV and AIDS

By the end of 2008, the rate of reported new HIV diagnoses among injecting drug users has remained low in most countries of the European Union, and the overall EU situation compares positively in a global context (ECDC and WHO-Europe, 2009; Wiessing et al., 2009). This may, at least partly, follow from the increased availability of prevention, treatment and harm-reduction measures, including substitution treatment and needle and syringe programmes (Wiessing et al., 2009). Other factors, such as the decline in injecting drug use that has been reported in some countries, may also have played an important role. Nonetheless, in some parts of Europe, data suggest that HIV transmission related to injecting drug use continued at relatively high rates in 2008, underlining the need to ensure the coverage and effectiveness of local prevention practice.

Trends in HIV infection

Data on reported newly diagnosed cases related to injecting drug use for 2008 suggest that infection rates are still generally falling in the European Union, following the peak in 2001–02, which was due to outbreaks in Estonia, Latvia and Lithuania ([124]). In 2008, the overall rate of newly diagnosed infections among injecting drug users in the 23 EU Member States for which national data are available was 2.6 cases per million population, down from 3.7 per million in 2007 ([125]). Of the four countries reporting the highest rates of newly diagnosed infections (Estonia, Latvia, Lithuania, Portugal), all continued their downward trend, with a marked decline in Estonia and Latvia (Figure 12). In Estonia, the decrease was from 86 cases per million in 2007 to 27 per million in 2008, and in Latvia from 62 cases per million in 2007 to 44 per million in 2008.

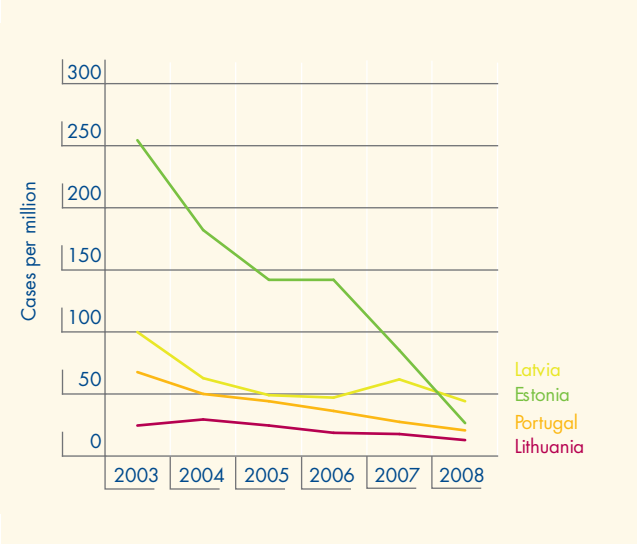
Overall, marked increases in newly diagnosed HIV infection among injecting drug users have not been observed between 2003 and 2008, and reported rates remain low. However, in Bulgaria, the rate for injectors accelerated from 0.0 new cases per million population in 2003 to 6.8 per million in 2008, whereas in Sweden

([123]) For details on methods and definitions, see the 2010 statistical bulletin.

([124]) Reporting procedures for HIV infection have changed in recent years, and data are now available by year of diagnosis rather than by year of report (ECDC and WHO-Europe, 2009). This results in lower figures in some countries that are likely to reflect more accurately true incidence (e.g. Portugal). In some cases, however, reporting delays may also have resulted in an underestimation of incidence. See Table INF-104 in the 2010 statistical bulletin.

([125]) National data are not available for Denmark, Spain, Italy and Austria.

Figure 12: Trends in newly reported HIV infections in injecting drug users in four EU Member States reporting high rates of infection



NB: Data reported by end of October 2009.
Sources: ECDC and WHO-Europe.

a peak at 6.7 cases was observed in 2007, suggesting a continued potential for HIV outbreaks among injecting drug users.

Trend data from HIV prevalence monitoring in samples of injecting drug users are an important complement to data from HIV case reporting. Prevalence data are available from 24 countries over the period 2003–08 ([126]). In 16 countries, HIV prevalence remained unchanged. In seven countries (Bulgaria, Spain, France, Italy, Poland, Portugal, Norway) HIV prevalence showed decreases, six of these being based on national samples, while in France the trend is based on data from five cities. Regional increases were reported in three countries — Bulgaria (Sofia), Italy (in two out of 21 regions) and Lithuania (Vilnius). There is however a downward trend in the newly diagnosed cases of HIV infection among injecting drug users in these three countries.

The comparison of trends in newly reported infections related to injecting drug use with trends in HIV prevalence among injecting drug users suggests that the incidence of HIV infection among injecting drug users is declining in most countries at national level.

Despite rapidly declining trends, the rate of reported new HIV diagnoses in 2008 related to injecting drug use is still high in Latvia (44 cases per million population), Estonia (27), Portugal (20.7) and Lithuania (12.5), suggesting that transmission is still occurring among injecting drug users in these countries.

Further indications of ongoing HIV transmission in recent years are provided by reports of prevalence levels of over 5 % among young injecting drug users (samples of 50 or more injecting drug users under age 25) in several countries: Estonia (two regions, 2005), France (five cities, 2006), Latvia (one city, 2007), Lithuania (one city, 2006) and Poland (one city, 2005) ([127]). Though caution is needed, as some of the sample sizes are small, the data show statistically significant increases in HIV prevalence among young injectors between 2003 and 2008 in Belgium (Flemish Community) and Bulgaria, whereas declines can be seen in Sweden and Spain. Data on HIV prevalence in new injectors (injecting for less than two years) further support a likely decrease in this group in Sweden ([128]).

AIDS incidence and access to HAART

Information on the incidence of AIDS, though not a good indicator of HIV transmission, can be important for showing the new occurrence of symptomatic disease. High incidence rates of AIDS may indicate that many injecting drug users infected with HIV do not receive highly active antiretroviral treatment at a sufficiently early stage in their infection to obtain maximum benefit from the treatment. A recent review confirms that this may still be the case in some EU countries (Mathers et al., 2010).

Estonia is the country with the highest incidence of AIDS related to injecting drug use, with an estimated 30.6 new cases per million population in 2008, down from 33.5 new cases per million in 2007. Relatively high levels of AIDS incidence are also reported for Latvia, Lithuania, Portugal and Spain: 25.5, 10.7, 10.2 and 8.9 new cases per million, respectively. Among these four countries, the trend is downward in Spain and Portugal, but not in Latvia and Lithuania ([129]).

Hepatitis B and C

While high prevalence levels of HIV infection are found only in some EU Member States, viral hepatitis and, in particular, infection caused by the hepatitis C virus (HCV) are highly prevalent in injecting drug users across Europe. HCV antibody levels among national samples of injecting drug users in 2007–08 vary from about 12 % to 85 %, with eight out of the 12 countries reporting levels in excess of 40 % ([130]). Three countries (Czech Republic, Hungary,

([126]) See Table INF-108 in the 2010 statistical bulletin.
([127]) See Table INF-109 in the 2010 statistical bulletin.
([128]) See Table INF-110 in the 2010 statistical bulletin.
([129]) See Figure INF-1 and Table INF-104 (part ii) in the 2010 statistical bulletin.
([130]) See Table INF-111 in the 2010 statistical bulletin.

Slovenia) report a prevalence of under 25 % in national samples of injecting drug users, although infection rates at this level still constitute a significant public health problem.

Within countries, HCV prevalence levels can vary considerably, reflecting both regional differences and the characteristics of the sampled population. For example, in Italy, regional estimates range from about 31 % to 87 % (Figure 13).

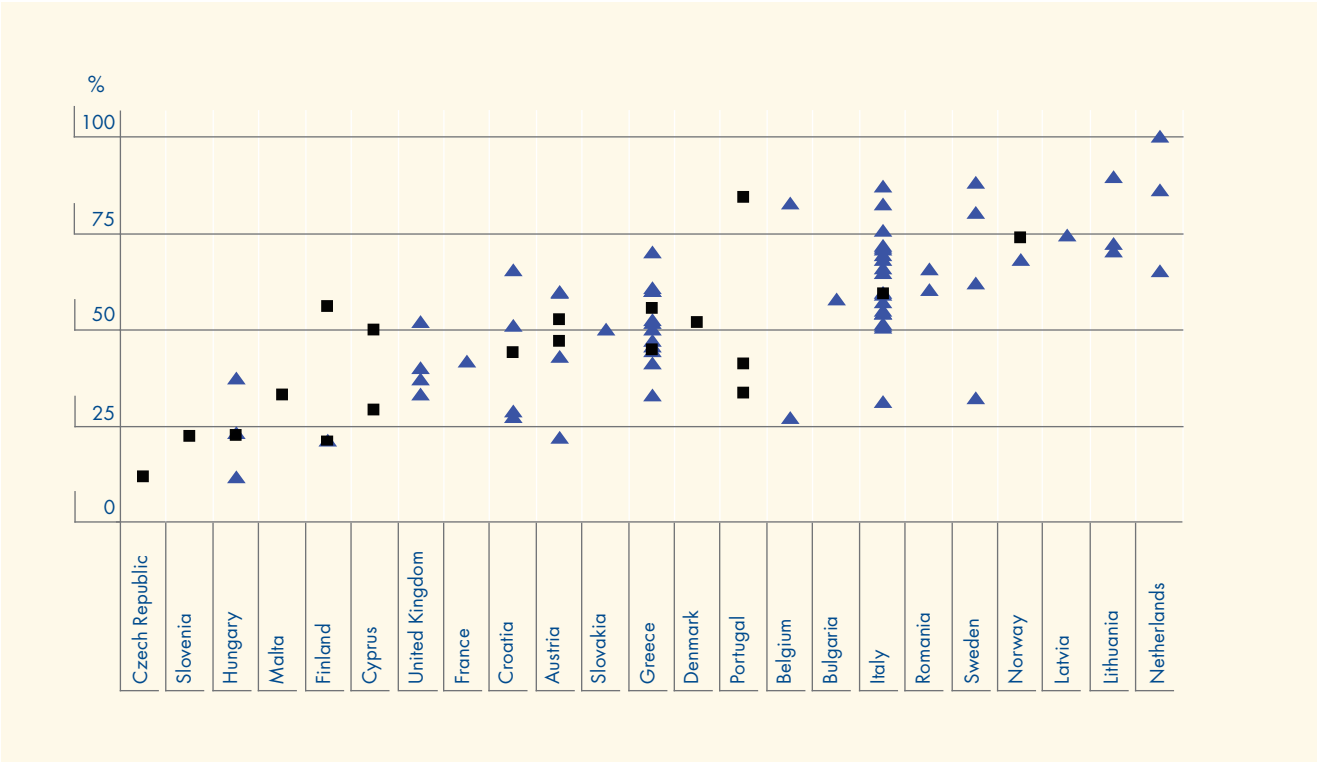
Recent studies (2007–08) show a wide range of prevalence levels among injecting drug users under 25 years and those injecting for less than two years, suggesting different levels of HCV incidence in those populations across Europe ([131]). Nonetheless, these studies also show that many injectors contract the virus early in their injecting career. This implies that there is only a small time window for initiating effective HCV prevention measures.

The prevalence of antibodies to hepatitis B virus (HBV) also varies to a great extent, possibly partly due to differences in vaccination levels, although other factors may play a role. The most complete dataset available for HBV is that for the antibody to the hepatitis B core antigen (anti-HBc), which indicates a history of infection. For 2007–08, four of the nine countries providing data on this virus among injecting drug users report anti-HBc prevalence levels of over 40 % ([132]).

HCV prevalence is observed to be declining in nine countries and increasing in three others, while a further four countries have data sets showing both types of trends, although caution is warranted given the limited sample size in some instances ([133]). Studies on young injectors (under age 25) suggest mostly stable prevalence and some declining trends, although an increase is reported in one region in Greece (Attica). This is confirmed in data for new injectors (injecting less than two years) for Greece, both in Attica and at national level. Data for new injectors also show an increase in Slovenia, although sample sizes are small, and declines in Portugal (national) and Sweden (Stockholm).

Trends in notified cases of hepatitis B and C show different pictures, but these are difficult to interpret as data quality is low. However, some insight into the epidemiology of these infections may be provided by the proportion of

Figure 13: Prevalence of HCV antibodies among injecting drug users



NB: Data for the years 2007 and 2008. Black squares are samples with national coverage; blue triangles are samples with subnational (local or regional) coverage. Differences between countries have to be interpreted with caution owing to differences in types of settings and study methods; national sampling strategies vary. Countries are presented by order of increasing prevalence, based on the average of national data or, if not available, of subnational data. For more information, see Figure INF-6 in the 2010 statistical bulletin.

Source: Reitox national focal points.

([131]) See Figure INF-6 (part ii) and (part iii) in the 2010 statistical bulletin.
([132]) See Table INF-115 in the 2010 statistical bulletin.
([133]) See Table INF-111 in the 2010 statistical bulletin.

Anthrax outbreak among heroin users in the United Kingdom and Germany

Anthrax is an acute infectious disease caused by the bacterium *Bacillus anthracis*. It most commonly occurs in wild and domestic animals, and is endemic in a number of mainly agricultural countries, but is very rare in Europe.

In December 2009, an alert reporting an outbreak of anthrax among injecting drug users in Scotland was issued by the United Kingdom. By 31 May 2010, 42 cases, 13 of which resulted in death, had been confirmed in Scotland, with a further three cases (two fatal) in England and two (one fatal) in Germany. The anthrax strain found in Germany and England was indistinguishable from that found in Scotland, strongly suggesting a common source of infection. Furthermore, as all reported cases occurred among heroin users, it is likely that the source is a contaminated batch of heroin. No evidence of anthrax spores was, however, found in samples of heroin analysed in Scotland by the end of May 2010.

The European Centre for Disease Prevention and Control (ECDC) and the EMCDDA conducted joint risk assessments related to this outbreak. Regular information updates were also disseminated, leading to subsequent reports of clusters of deaths in drug users in other countries. These proved, however, not to be related to anthrax infection.

injecting drug users among all notified cases where risk factors are known (Wiessing et al., 2008). For hepatitis B, the proportion of injecting drug users has declined between 2003 and 2008 in eight out of 17 countries. In the case of hepatitis C, the proportion of injecting drug users among notified cases has declined in six countries between 2003 and 2008, and has increased in three other countries (Czech Republic, Malta, United Kingdom) ([134]).

Preventing and responding to infectious diseases

The prevention of infectious diseases among drug users is an important public health goal of the European Union and a component of most Member States' drug policies. Countries respond to the spread of infectious diseases among drug users by a combination of approaches, including: drug treatment, particularly opioid substitution treatment; the provision of sterile injection equipment and other paraphernalia; and community-based activities that provide information, education, testing and behavioural interventions, often implemented through outreach or low-threshold agencies ([135]). These measures, together with antiretroviral therapy and tuberculosis diagnosis and treatment, have been promoted by UN agencies as the core interventions for HIV prevention, treatment and care for injecting drug users (WHO, UNODC and UNAIDS, 2009).

In Europe, the availability of drug treatment and harm-reduction measures has increased considerably since the mid-1990s. Both opioid substitution treatment and needle and syringe programmes now exist in all countries except Turkey. While the provision of these interventions remains limited in several countries, it is estimated that one in two problem opioid users in Europe could be receiving opioid substitution treatment (see Chapter 6). A recent review (Kimber et al., 2010) concludes that there is now sufficient evidence that this type of treatment reduces HIV transmission and self-reported injecting risk behaviour but evidence of a reduction in hepatitis C transmission is more limited. A cohort study in Amsterdam found, however, that 'full participation' in both needle and syringe programmes and opioid substitution treatment was associated with a much lower incidence of both HIV and HCV among injecting drug users (Van den Berg et al., 2007), while a recent cohort study in the United Kingdom linked opioid substitution treatment with statistically significant reductions in HCV incidence (Craine et al., 2009).

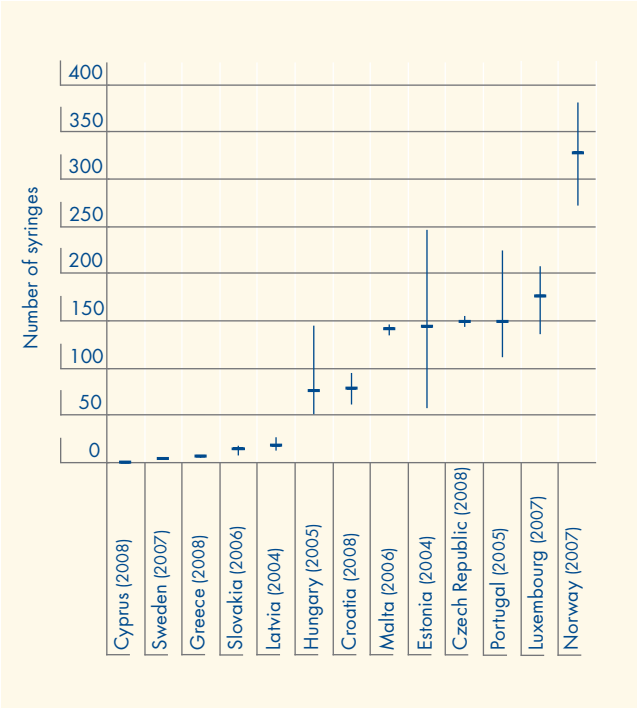
Interventions

The most frequently reported priority is access to sterile injecting equipment. Data on syringe provision through specialised needle and syringe programmes in 2007–08 are available for all but four countries ([136]). They show that about 40 million syringes per year are distributed through these programmes. This is equivalent to an average of 80 syringes per estimated injecting drug user in the countries providing syringe data.

The average number of syringes distributed in a year per injecting drug user can be calculated for 13 European countries (Figure 14). In seven of these countries, the average number of syringes given out by specialised programmes is equivalent to less than 100 per injector, five countries give out between 140 and 175 syringes and Norway reports the distribution of more than 320 syringes per injector ([137]). For the prevention of HIV, UN agencies judge the annual distribution of 100 syringes per injecting drug user as low, and 200 syringes per injector as high (WHO, UNODC and UNAIDS, 2009).

([134]) See Tables INF-105 and INF-106 in the 2010 statistical bulletin.
([135]) For further information about national priorities and provision levels, see Table HSR-6 in the 2009 statistical bulletin.
([136]) See Table HSR-6 in the 2009 statistical bulletin and Table HSR-5 in the 2010 statistical bulletin. For 2007/08, data on the number of syringes were not available for Denmark, Germany, Italy and the United Kingdom.
([137]) These figures do not include pharmacy sales, which may represent an important source of sterile syringes for drug users in several countries.

Figure 14: Syringes distributed through specialised programmes, per estimated injecting drug user



NB: Based on injecting drug use estimates from indicated years and most recent available data on number of syringes provided through specialised needle and syringe programmes (2006–08). For full notes and sources, see Figure HSR-3 in the 2010 statistical bulletin.

Source: Reitox national focal points.

A recent study on the cost-effectiveness of needle and syringe programmes in Australia, where 30 million syringes are distributed each year, estimates that they have prevented more than 32 000 cases of HIV infection and almost 100 000 cases of hepatitis C since their introduction in 2000 (National Centre in HIV Epidemiology and Clinical Research, 2009).

New data for 2008 from 14 countries show increases in syringe provision to drug users in Belgium (Flemish Community), the Czech Republic, Estonia, Hungary, the United Kingdom (Northern Ireland) and Croatia, thereby confirming earlier trends. Increases were also reported in Portugal and Lithuania, where numbers had previously declined. A decrease compared to 2007 was reported in Greece, Romania and Slovakia, as well as in Luxembourg and Poland, where the downward trend was already observed the year before. The programme in Cyprus was not used by drug users.

Needle and syringe programmes in Europe increasingly provide a range of other injecting-related items (e.g. mixing containers) to prevent them being shared. They also provide equipment that can be used for non-injecting forms of drug use, for example pipes or aluminium foil, in order to encourage users to discontinue injecting. Another example of this is reported by the Czech Republic, where low-threshold agencies started to provide methamphetamine injectors with hard gelatine capsules that can be filled with the drug and swallowed.

Recent developments in the diagnosis, prevention and treatment of chronic hepatitis have been reported by European countries. These include the adoption of specific programmes or action plans (e.g. Denmark, France, United Kingdom — England, Scotland and Northern Ireland). Existing interventions include: specific information materials; safer-injection training targeting new and young injectors, implemented by outreach teams (e.g. Romania) or through peer education (e.g. in prisons in Spain and Luxembourg); and easily accessible and free counselling and testing. The United Kingdom also reports the use of contingency management to encourage testing. Other reported measures aim at keeping injection levels low through retention in drug treatment; at the integration of viral hepatitis services into settings that serve drug users; and at revising HCV treatment guidance to improve access to such treatment (e.g. Czech Republic). Several countries have also launched initiatives aimed at increasing knowledge and awareness about chronic viral hepatitis among healthcare and social service providers (Austria) and among the public (e.g. Germany, Ireland, Netherlands).

Drug-related deaths and mortality

Drug use is one of the major causes of health problems and mortality among young people in Europe and can account for a considerable proportion of all deaths among adults. Studies found that between 10 % and 23 % of mortality among those aged 15 to 49 could be attributed to opioid use (Bargagli et al., 2006; Bloor et al., 2008).

Mortality related to drug use comprises the deaths caused directly or indirectly by the use of drugs. This includes deaths from drug overdoses (drug-induced deaths), HIV/AIDS, traffic accidents — in particular when combined with alcohol — violence, suicide and chronic health problems caused by repeated use of drugs (e.g. cardiovascular problems in cocaine users) ([138]).

Drug-induced deaths

During the period 1995–2007, between 6 400 and 8 500 drug-induced deaths were reported each year by EU Member States, Croatia, Turkey and Norway. The United Kingdom and Germany reported almost half of all drug-induced deaths in 2007. Population mortality

([138]) See 'Drug-related mortality: a complex concept' in the 2008 annual report.

rates due to overdoses vary between countries, ranging from two to just under 85 deaths per million population aged 15–64 years (average of 21 deaths per million). Rates of over 20 deaths per million are found in 14 out of 28 European countries, and rates of over 40 deaths per million in six countries. Among Europeans aged 15–39 years, drug overdoses accounted for 4 % of all deaths ([139]). Areas with higher prevalence of problem drug use can be disproportionally affected. For example, in 2008, the number of drug-induced deaths in Scotland was 112.5 per million inhabitants, which is much higher than the rate for the United Kingdom as a whole (38.7 per million).

The number of drug-induced deaths reported can be influenced by the prevalence and patterns of drug use (injection, polydrug use), the age and the co-morbidities of drug users and the availability of treatment and emergency services, as well as the quality of data collection and reporting. Improvements in the reliability of European data have allowed better descriptions of trends, and most countries have now adopted a case definition in line with that of the EMCDDA ([140]). Nevertheless, caution must be exercised when comparing countries, as national differences exist in the quality of case ascertainment and reporting practices.

Deaths related to opioids

Heroin

Opioids, mainly heroin or its metabolites, are present in the majority of drug-induced deaths reported in Europe. In the 20 countries providing data in 2008, opioids accounted for more than three quarters of all cases (77–100 %), with 11 countries reporting proportions of over 85 % ([141]). Substances often found in addition to heroin include alcohol, benzodiazepines, other opioids and, in some countries, cocaine. This suggests that a substantial proportion of all drug-induced fatalities may occur in a context of polydrug use.

Men account for most overdose deaths occurring in Europe (81 %). In the majority of countries, the mean age of those dying is in the mid-30s, and in many instances it is increasing. This suggests a possible stabilisation or decrease in the number of young heroin users, and an ageing cohort of problem opioid users. Overall, 13 % of overdose deaths reported in Europe occur among those aged under 25 years, though Austria, Romania and Malta (small numbers) report percentages of 40 % or more. This may indicate a younger population of heroin users or injectors in these countries ([142]).

A number of factors are associated with fatal and non-fatal heroin overdoses. These include injection and simultaneous use of other substances, in particular alcohol, benzodiazepines and some antidepressants. Also related to overdoses are binge drug use, co-morbidity, homelessness, poor mental health (e.g. depression), not being in drug treatment, having experienced previous overdoses and being alone at the time of overdose (Rome et al., 2008). The time immediately after release from prison or discharge from drug treatment is a particularly risky period for overdoses, as illustrated by a number of longitudinal studies (WHO, 2010).

Non-fatal opioid overdoses

Studies report that the majority of opioid users (typically 50–60 %) have survived an overdose, and that 8–12 % had had an overdose in the last six months, with some users having overdosed more than once. For each drug-induced death, it is estimated that there are 20 to 25 non-fatal overdoses. The number of non-fatal overdoses occurring every year in Europe cannot be estimated with precision, as monitoring is very limited and definitions may vary between countries. Nevertheless, the available information suggests that there could be between 120 000 and 175 000 non-fatal overdoses every year in Europe.

Surviving an overdose greatly increases the risk of dying from a later overdose (Stoové et al., 2009). Furthermore, non-fatal overdoses can cause a wide range of morbidity, including pulmonary impairment, pneumonia and muscular impairment. Overdoses may also lead to neurological damage, and the number of overdoses experienced is a significant predictor of poorer cognitive performance. Overall morbidity is likely to be greater among older, more experienced and dependent users (Warner-Smith et al., 2001).

Early recognition that an opioid overdose is occurring and the intervention of emergency services can be essential for preventing a fatal outcome. Contact with the emergency services, as well as giving treatment for acute poisoning, presents an opportunity to receive information on overdose prevention and referral for counselling and treatment.

Monitoring non-fatal overdoses can allow cross-validation of information on drug-related deaths. In the Czech Republic, for example, hospitalisation for non-fatal opioid overdoses decreased between 2001 and 2008, reflecting the decrease in opioid deaths. At the same time, the numbers of non-fatal overdoses and deaths related to methamphetamine use increased.

([139]) See Figure DRD-7 (part i) and Tables DRD-5 (part ii) and DRD-107 (part i) in the 2010 statistical bulletin.
([140]) For detailed methodological information, see the 2010 statistical bulletin.
([141]) As most of the drug-induced deaths reported to the EMCDDA are opioid overdoses (mainly heroin), the general characteristics of the reported deaths are presented here to describe and analyse deaths related to heroin use. See Figure DRD-1 in the 2010 statistical bulletin.
([142]) See Figures DRD-2 and DRD-3 and Table DRD-1 (part i) in the 2010 statistical bulletin.

Other opioids

Opioid substitution treatment reduces substantially the risk of fatal overdose, as illustrated by a Norwegian study on 3 800 persons with up to seven years follow-up, which showed a reduction in mortality during treatment compared with pre-treatment. The risk reduction was significant for both overdose deaths (relative risk 0.2) and all-cause mortality (relative risk 0.5) (Clausen et al., 2008).

Deaths showing the presence of substances used in opioid substitution treatment are also reported each year. This reflects the large number of drug users undergoing this type of treatment and does not imply that these substances were the cause of death. Overdose deaths among clients in substitution treatment can be the result of combining drugs, as some treatment clients still use street opioids, engage in heavy drinking and use prescribed psychoactive substances. However, most deaths due to substitution substances (often in combination with other substances) happen among people who are not in substitution treatment (Heinemann et al., 2000).

Deaths due to buprenorphine poisoning are infrequent, despite its increasing use in substitution treatment in Europe (see Chapter 6). In Finland, however, buprenorphine remains the most common opioid detected in forensic autopsies, but usually in combination with other substances such as alcohol, amphetamine, cannabis and medicines, or taken by injection.

In Estonia, most drug-induced deaths reported in 2007 and 2008 were associated with the use of 3-methylfentanyl. In Finland, opioids such as oxycodone, tramadol or fentanyl were reported, though the role of these drugs in deaths was not specified.

Deaths related to other drugs

Deaths caused by acute cocaine poisoning seem to be relatively uncommon ([143]). But, as cocaine overdoses are more difficult to define and identify than those related to opioids, they might be under-reported.

In 2008, about 1 000 deaths related to cocaine were reported in 15 countries. There are signs of cocaine being detected in increasing numbers of drug-induced deaths reported in European countries, but due to the lack of comparability in the available data, it is not possible to describe the European trend. A marked increase in the number of deaths related to cocaine in recent years has been observed in the two countries with the highest prevalence of cocaine use in the general population. In Spain, deaths in which cocaine was present in the absence of opioids showed a marked increase between 2002 and 2007. In the United Kingdom, the number of death certificates mentioning cocaine doubled between 2003 (161) and 2008 (325).

Deaths in which ecstasy is present are infrequently reported and, in many of these cases, the drug has not been identified as the direct cause of death ([144]). The EMCDDA's 2010 'Selected issue' on problem amphetamine and methamphetamine use reviews the data on deaths related to these two substances.

Trends in drug-induced deaths

Drug-induced deaths increased sharply in Europe during the 1980s and early 1990s, paralleling the increase in heroin use and drug injection, and thereafter remained at high levels ([145]).

Deaths caused by cocaine

Cocaine deaths are a much more complex phenomenon than opioid overdoses, which have a relatively clear clinical presentation. Therefore, many deaths caused by cocaine might not come to the attention of police or forensic experts due to the form of their presentation, and because of the social profile of the victims.

Cocaine use can cause fatal outcomes through different mechanisms. Pure cocaine pharmacological overdoses occur, but fatal outcomes are generally only associated with a massive ingestion of the drug. Most fatalities associated with cocaine use are caused by cardiovascular or cerebrovascular accidents (Sporer, 1999). These are not dose-dependent, and may also happen among occasional users or at low dosages, particularly in people with pre-existing cardiovascular or cerebrovascular problems. Most deaths showing cocaine use occur, however, among problem users affected by pathologies caused by chronic drug use (coronary atherosclerosis, ventricular hypertrophy or other problems) (Darke et al., 2006). These may be aggravated by alcohol use (Kolodgie et al., 1999) and tobacco smoking. In an unknown proportion of cocaine-related deaths, the connection with the use of the drug may not be recognised, because of a lack of clinical specificity and because the death may occur days or weeks after the acute problem. Pathologies caused by regular cocaine use can also be the basis for later myocardial infarctions triggered by other factors, in a similar way to tobacco use.

Assessing the real burden of health problems and loss of life related to cocaine present specific challenges and will require different methods to those used for opioid overdose deaths.

([143]) See the box 'Deaths caused by cocaine'.
([144]) For data on deaths related to drugs other than heroin, see Table DRD-108 in the 2010 statistical bulletin.
([145]) See Figures DRD-8 and DRD-11 in the 2010 statistical bulletin.

Between 2000 and 2003, most EU Member States reported a decrease (23 %), followed by a subsequent increase (11 %) in deaths between 2003 and 2007. Preliminary data available for 2008 suggest an overall figure at least equal to that for the previous year, with increases reported by 11 out of 18 countries where a comparison is possible. The United Kingdom and Germany, accounting for the bulk of reported cases in Europe, show a progressive year-on-year increase since 2003 and 2006, respectively. Other countries (e.g. France, Finland, Norway) also report an increase.

The reasons for the sustained numbers of reported drug-induced deaths are difficult to explain, especially given the indications of decreases in injecting drug use and increases in the numbers of opioid users in contact with treatment and harm-reduction services. Possible explanations that require further investigation include: increased levels of polydrug use (EMCDDA, 2009d) or high-risk behaviour; increases in the numbers of relapsing opioid users leaving prison or treatment; and an ageing cohort of drug users, possibly with a more vulnerable population of chronic drug users. For instance, several countries (e.g. Germany, Spain, United Kingdom) report an increased proportion of cases aged over 35 years, which reflects the upward trend in the mean age of drug-induced deaths (Figure 15).

Overall mortality related to drug use

Overall mortality related to drug use comprises drug-induced deaths and those caused indirectly through the use of drugs, such as through the transmission of infectious diseases, cardiovascular problems and accidents. The number of deaths indirectly related to drug use is difficult to quantify, but their impact on public health can be considerable. Drug-related deaths are mainly concentrated among problem drug users, although some (e.g. traffic accidents) occur among occasional users.

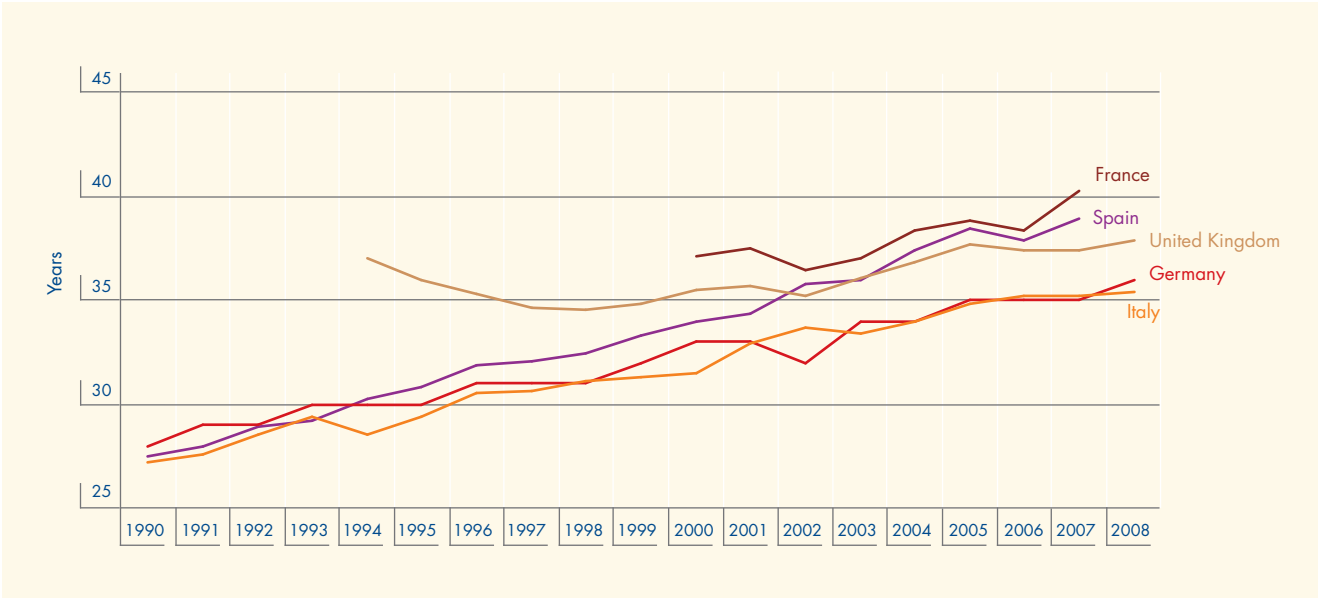
Estimates of overall drug-related mortality can be derived in various ways, for example by combining information from mortality cohort studies with estimates of drug use prevalence. Another approach is to use existing general mortality statistics and estimate the proportion related to drug use.

Mortality cohort studies

Mortality cohort studies track the same groups of problem drug users over time and, through linkage with mortality registries, try to identify the causes of all deaths occurring in the group. This type of study can determine overall and cause-specific mortality rates for the cohort, and can estimate the group's excess mortality compared to the general population ([146]).

Depending on recruitment settings (e.g. drug treatment facilities) and enrolment criteria (e.g. injecting drug users), most cohort studies show mortality rates in the range of 1–2 % per year among problem drug users. These mortality rates are roughly 10 to 20 times higher than those of the same age group in the general population.

Figure 15: Trends in mean age of drug-induced deaths in some European countries



NB: For further information, see Figure DRD-3 in the 2010 statistical bulletin. United Kingdom data are based on the drug strategy definition.
Source: Reitox national focal points.

([146]) For information on mortality cohort studies, see the 'Key indicators' on the EMCDDA website.

The relative importance of the different causes of death varies between countries and over time. Generally, though, the main cause of death among problem drug users is drug overdose, accounting for up to 50–60 % of deaths among injectors in countries with low prevalence of HIV/AIDS. In addition to HIV/AIDS and other diseases, frequently reported causes of deaths include suicide and alcohol abuse, as illustrated by a recent study in Stockholm, which found that 17 % of the deaths among a cohort of mainly opioid users were from suicide and 15 % were accidental. Alcohol was involved in 30 % of the deaths (Stenbacka et al., 2010).

Deaths indirectly related to drug use

By combining existing data from Eurostat and HIV/AIDS surveillance, the EMCDDA has estimated that about 2 100 people died of HIV/AIDS attributable to drug use in the European Union in 2007 ([147]), with 90 % of these deaths occurring in Spain, France, Italy and Portugal. Following the introduction of highly active antiretroviral therapy in 1996, HIV/AIDS mortality decreased markedly in most EU Member States, but it has been increasing in Estonia and Latvia since 2003. The highest HIV/AIDS mortality rates among drug users are reported for Portugal, followed by Estonia, Spain, Latvia and Italy; in most other countries the rates are low ([148]).

Other diseases that also account for a proportion of deaths among drug users include chronic conditions such as liver diseases, mainly due to hepatitis C (HCV) infection and often worsened by heavy alcohol use and HIV co-infection. Deaths caused by other infectious diseases are rarer. Non-infectious causes of death mainly include cancer and cardiovascular problems ([149]).

Other causes of death among drug users have received much less attention, despite indications of a considerable impact on mortality. A recent WHO study (Degenhardt et al., 2009) estimated that, in Europe, suicides and trauma could account for about one third of the mortality attributable to problem drug use, which would imply several thousand deaths every year. Regarding specifically suicide, a literature review (Darke and Ross, 2002) found that heroin users had a 14 times higher risk of suicide death than the general population.

Information on the number of deaths related to drug driving remains scarce. Some studies suggest increased risks of accidents associated with illicit drug use, and that the combined use of drugs and alcohol causes additional impairment (EMCDDA, 2008b).

Reducing drug-related deaths

Fifteen European countries report that their national drug strategy includes a part dedicated to the reduction of drug-related deaths, that such policies exist at regional level, or that they have a specific action plan for the prevention of drug-related deaths. Austria reports that a strategy paper is being prepared.

Interventions

Treatment reduces significantly the mortality risk of drug users (Davoli et al., 2007), although risks related to drug tolerance arise when entering or leaving treatment. Studies show that the risk of drug-induced death on relapse after treatment or in the weeks after release from prison is substantially elevated. This led to the publishing of WHO-Europe recommendations regarding overdose prevention in prisons and improved continuity of care after release (WHO, 2010).

Denmark and Norway have recently prioritised buprenorphine in their guidelines for substitution treatment because of its pharmacological safety profile. Spain has recently approved the buprenorphine–naloxone combination for patients in substitution programmes carried out by the national health system, with the aim of reducing drug-induced deaths.

Alongside improving access to drug treatment, other interventions to reduce overdose risks in drug users have been studied. These interventions address personal, situational and drug-use related factors. A recent review of the evidence (Rome et al., 2008) recommended raising awareness among general practitioners of the dangers of multiple prescriptions, in particular of antidepressants. Measures to control the prescription of multiple drugs to substitution clients, and thereby to reduce emergencies involving the use of benzodiazepines, have been taken in Luxembourg.

The provision of information materials is reported as a common intervention to reduce drug-induced deaths in Europe ([150]). Many countries report providing overdose prevention, recognition and response education to drug users and their neighbours, friends and families, as well as to service providers who work with drug users. The provision of these interventions is, however, often sporadic and limited.

Following an epidemic of fentanyl overdoses, Estonian experts are now calling for the introduction of overdose prevention programmes in the country. Belgium, the

([147]) See Table DRD-5 (part iii) in the 2010 statistical bulletin.
([148]) See Figure DRD-7 (part ii) in the 2010 statistical bulletin.
([149]) In particular related to cocaine, see 'Health consequences of cocaine use' in Chapter 5.
([150]) See Table HSR-8 in the 2009 statistical bulletin.

Czech Republic, Estonia and the Netherlands report the operation of early-warning systems that collect and disseminate information about new drugs or dangerous combinations via low-threshold agencies, shelters or treatment facilities. In the Netherlands, a monitoring system for drug-related acute health incidents was tested in 2009 and is now being expanded.

Overdose training combined with a take-home dose of naloxone — which reverses the effects of opioids — is an approach that could save many lives. The intervention targets drug users and their families, the people who could be with a user during an overdose, and is aimed at enabling them to take effective action while awaiting the arrival of emergency services. Studies show that those trained demonstrated improved knowledge of the signs of overdose and increased confidence in using naloxone. In 2009, a project providing packs with a syringe pre-filled with naloxone to 950 family members of drug users started in England. Packs containing one-shot injectors of naloxone are also given, as part of an ongoing study, to opioid users leaving prison in England, Scotland and Wales. Pre-filled syringes are available in Italy via drugs agencies, are used in a trial in Portugal and have been introduced in Bulgaria. The provision of a nasal spray of naloxone has started through a user-led project in Copenhagen.

Supervised drug consumption rooms enable rapid intervention at the first signs of an overdose. Operational data indicate that drug overdoses occurring in these facilities are successfully managed, with no fatal overdoses reported. Providing immediate help also reduces the impact of non-fatal overdose, including irreversible damage to the brain and other vital organs, due to hypoxia (Hedrich et al., 2010).

Chapter 8

New drugs and emerging trends

Introduction

New psychoactive substances and new patterns of use, though usually first appearing among restricted social groups or in a few locations, can have important implications for public health and for drug policy. Providing timely and objective information to policymakers, professionals and the wider public on new threats is methodologically and practically challenging. It is also of growing importance, given the increasingly dynamic and fast-moving nature of the European drugs problem. The European Union's early-warning system has been developed as a rapid-response mechanism to the emergence of new psychoactive substances on the drug scene.

A large number of new unregulated synthetic compounds have appeared in recent years. These substances are marketed on the Internet as 'legal highs' and are designed to circumvent drug controls. They constitute a challenge to current approaches for monitoring and controlling new psychoactive substances. As reviewed in this chapter, the last two years have seen the emergence of new, smokable herbal products laced with synthetic cannabinoids and the growing popularity of various synthetic cathinones.

Monitoring new psychoactive substances in Europe

The Council decision on new psychoactive substances ([1]) establishes a European mechanism for the rapid exchange of information on new psychoactive substances that may pose public health and social threats (EMCDDA, 2007b). The EMCDDA and Europol, in close cooperation with their networks of national partners, are assigned a central role in implementing the early-warning system. Once a new psychoactive substance is detected on the European market, Member States ensure that information on the manufacture, traffic and use of the drug is transmitted to the EMCDDA and Europol via the Reitox national focal points and Europol national units. The Council decision also provides a framework for an assessment of the risks associated with new substances (see EMCDDA, 2010b). Information on substances of established and acknowledged medicinal value can also be exchanged via the early-warning system, but these may not be subjected to risk assessment under the Council decision.

([1]) Council Decision 2005/387/JHA of 10 May 2005 on the information exchange, risk assessment and control of new psychoactive substances (OJ L 127, 20.5.2005, p. 32).

Action on new drugs

In 2009, 24 new synthetic psychoactive substances were formally notified via the European early-warning system. This is the largest number reported in a single year, and the increase is mainly due to the identification of nine new synthetic cannabinoids in the past year. Also reported in 2009 were new substances belonging to the chemical families usually providing new psychoactive drugs: five phenethylamines, two tryptamines and four synthetic cathinones. No new piperazines or psychoactive plants were reported.

Since the establishment of the early-warning system in 1997, more than 110 substances have been notified to the EMCDDA and Europol. New groups of substances have emerged in the last five years. These include various piperazines, synthetic cathinones and synthetic cannabinoids. However, no piperazines have been identified in the last two reporting years. Only six were plants or of plant origin, and it is likely that synthetic psychoactive substances will continue to be the most frequently reported new substances in the future.

Three substances with medicinal properties were reported in 2009. These include pregabalin, a prescription medicine marketed under the name Lyrica and used to treat neuropathic pain, epilepsy and generalised anxiety disorder. A recent review of pharmacovigilance data indicates concerns related to its misuse in Finland, Sweden and Norway. Information from the early-warning system also suggests that pregabalin may have been involved in the deaths of users in Finland, Sweden and the United Kingdom, where it was found in forensic toxicological analyses. User reports suggest that pregabalin has effects similar to those of alcohol, GHB (gamma-hydroxybutyric acid), ecstasy and benzodiazepines. It is also reported to alleviate heroin (opioid) withdrawal symptoms.

The early-warning system also monitors unregulated psychoactive products — the so-called 'legal highs' — sold via the Internet and smart or head shops, advertised with aggressive and sophisticated marketing strategies, and in some cases intentionally mislabelled with declared ingredients differing from the actual composition. The 'legal highs' market is distinguished by the speed at which suppliers circumvent drug controls by offering new alternatives.

Mephedrone

Synthetic cathinones have been increasingly reported via the early-warning system in the last few years. At present, 15 of these substances are being monitored, including mephedrone, methylone, methedrone and MDPV ([151]). These 'designer' compounds are derivatives of cathinone, which is one of the psychoactive principles in the plant khat (*Catha edulis*) and is structurally related to amphetamine ([152]).

Mephedrone is a derivative of methcathinone — a scheduled drug in the 1971 UN Convention. It appeared for the first time in Europe in 2007, and seems to have gained popularity among young drug users, leading to a specific demand for this substance. This seems to be particularly the case in the United Kingdom, where mephedrone has received attention from the media. Reports from other Member States suggest that it is also used elsewhere in Europe.

Seizures of significant quantities of mephedrone have been reported in 2009 by Germany, the Netherlands, Sweden and the United Kingdom. In Sweden, toxicology results confirmed the role of mephedrone use in a death and in the United Kingdom a number of deaths are being investigated for possible involvement of mephedrone. Control measures on mephedrone have recently been introduced by Denmark, Germany, Estonia, Ireland, Romania, Sweden, the United Kingdom, Croatia and Norway.

Mephedrone is readily available on the Internet, where it may be sold as a legal alternative to cocaine or ecstasy. The substance is variously advertised as a 'research chemical', 'bath salts', 'for botanical research', 'plant food' or 'plant feeder', often with a note saying 'not for human consumption' in order to circumvent potential control mechanisms. Often, the list of ingredients gives no indication of the presence of psychoactive substances. A search for online mephedrone shops conducted in March 2010 in English showed that at least 77 websites were selling the substance. Most of these websites sold only mephedrone and were based in the United Kingdom. Following the United Kingdom's classifying of mephedrone and other synthetic cathinones as controlled drugs in April 2010, the majority of mephedrone sites have ceased to exist.

Data on the use of 29 substances, including a number of 'legal highs', were collected in an online survey conducted in late 2009, in collaboration with the United Kingdom's dance music magazine *Mixmag* ([153]). Mephedrone was reported as the fourth most commonly used drug (after cannabis, ecstasy and cocaine) and the most used 'legal high' among the 2 295 respondents. About one third (33.6 %) reported using it in the last month, 37.3 % in the last year and 41.7 % ever. The figures for methylone were 7.5 %, 10.0 % and 10.8 % respectively. The small difference between last month and lifetime prevalence suggests a new and rapidly spreading phenomenon. These findings cannot, however, be considered as representative of the wider population of club-goers, due to the methodological limitations of online surveys; such surveys may, however, provide rapid access to specific populations (Verster et al., 2010).

Monitoring online drug shops

The early-warning system has been monitoring the marketing of new psychoactive substances on the Internet each year since 2006. Changes in the methods used have increased the quality and coverage of the surveys, but data for different years are not directly comparable.

In 2010, 170 online drug shops were identified, 30 of which offered both 'legal highs' and hallucinogenic mushrooms,

EMCDDA–Europol joint report on mephedrone

The EMCDDA and Europol completed an assessment of the available information on mephedrone in January 2010, based upon the criteria set out in the early-warning system's operating guidelines (EMCDDA, 2007b). These include: the amount of the material seized; evidence of organised crime involvement; evidence of international trafficking; the toxicopharmacological properties of the psychoactive substance; evidence of the potential for further (rapid) spread; and evidence of cases of serious intoxication or fatalities.

The EMCDDA and Europol agreed that the information available on mephedrone satisfies the criteria for a joint report to be produced. The resulting EMCDDA–Europol joint report was presented to the Council of the European Union, the European Commission and the European Medicines Agency, and a decision was taken to launch a formal risk-assessment procedure on the substance.

([151]) Mephedrone (4-methylmethcathinone); methylone (3,4-methylenedioxymethcathinone); methedrone (4-methoxymethcathinone); and MDPV (3,4-methylenedioxypyrovalerone).

([152]) Drug profiles on khat and synthetic cathinone derivatives are available on the EMCDDA website.

([153]) Personal communication from Adam Winstock, King's College London.

typically with a wide selection of products from both groups: 34 offered only hallucinogenic mushrooms; and 106 sold 'legal highs' but not hallucinogenic mushrooms ([154]).

The number of vendors of hallucinogenic mushrooms seems to have increased since 2006, when 39 shops were identified selling these products (EMCDDA, 2006). In 2010, 64 online shops were identified selling hallucinogenic mushrooms, with most of them selling grow kits, spores and fly agaric mushroom (*Amanita muscaria*) rather than psilocybin-containing mushrooms.

In the 2009 online survey, which focused only on 'legal highs', the largest number of online shops were based in the United Kingdom, followed by Germany and the Netherlands. The 2010 snapshot, with its extended scope, showed a different pattern, with 38 online shops based in the Netherlands, 20 in the United Kingdom and 20 in Germany. Countries in which at least five online shops were located include Poland, France and Hungary, while smaller numbers were based in the Czech Republic, Spain, Portugal, Slovakia, Italy and Sweden. Thirty-eight online shops were based in the United States, and the location of 15 online shops could not be determined. Unlike the online shops located in the United Kingdom, many of those based in the Netherlands are associated with specialist shops. Overall, 73 % of the online shops used English, with 42 % offering no other language.

Snapshot on online drug shops: methods

The 2010 survey took place between 25 January and 5 February, and targeted online drug shops (retailers and wholesale) accessible to any European Internet user interested in buying 'legal highs' (including 'Spice'), GHB/GBL or hallucinogenic mushrooms. Online shops that did not provide shipping to at least one EU Member State were not included.

Search strings were first tested in English, in order to identify those yielding the highest proportion of relevant hits. Searches were then carried out in 15 languages spoken as a mother tongue by 84 % of the European Union's population ([1]). Three different search engines were used: Metacrawler, Google and a 'national' search engine depending on the country and language.

Sampling consisted of examining the first 100 links, and continued until 20 consecutive links proved irrelevant. For each site identified, the following information was collected: products on sale, product descriptions, prices, availability in stock, countries of delivery, ingredients, health warnings and users' reviews.

([1]) Czech, Danish, Dutch, English, French, German, Greek, Hungarian, Italian, Maltese, Polish, Portuguese, Slovak, Spanish and Swedish.

The 'Spice' phenomenon

'Spice' is sold on the Internet and in specialised shops as a smoking mixture. In 2008, forensic chemists discovered that it is not the harmless herbal product that it claims to be. The real psychoactive constituents of 'Spice' were identified as synthetic additives: substances, such as the cannabinoid receptor agonist ([155]) JWH-018, that mimic the effects of tetrahydrocannabinol (THC) in cannabis.

The so-called 'Spice' phenomenon continued to receive considerable attention in 2009. Throughout the year, the names and brand packaging of 'Spice'-like products have diversified. The psychoactive compounds added to these products have also being changing, in response to new control measures (EMCDDA, 2009f). Nine new synthetic cannabinoids were reported through the early-warning system in 2009 ([156]).

The variety and number of synthetic cannabinoids, or other substances, that can be added to herbal products pose challenges in terms of their identification, monitoring and risk appraisal. Almost nothing is known about the pharmacology, toxicology and safety profiles of these compounds in humans. The type and amount of added synthetic cannabinoids may also vary considerably, and some of these compounds may be highly active at very small doses. As a result, accidental overdosing with a risk of severe psychiatric or other complications cannot be excluded.

None of the synthetic cannabinoids is controlled under the UN conventions, and there is no information on any of them having been authorised as medicinal products in the European Union. At the time of writing, several Member States had banned or otherwise controlled 'Spice', 'Spice'-like products and related compounds ([157]). The purported herbal ingredients of 'Spice' products are not internationally controlled, but some Member States (Latvia, Poland, Romania) have placed one or more of them on their lists of controlled substances. Outside the European Union, Switzerland controls 'Spice herbal mixes' under its food regulation.

In the 2010 online survey, the number of online shops offering 'Spice' dropped sharply compared with the previous year. Despite having a broader coverage, the

([154]) See the box 'Snapshot on online drug shops: methods'.
([155]) An agonist is a chemical substance that binds to a specific receptor of a cell and triggers an activity by the cell. An agonist often mimics the action of endogenous or naturally occurring substances.
([156]) See the Drug profile 'Synthetic cannabinoids and 'Spice'' on the EMCDDA website.
([157]) Denmark, Germany, Estonia, Ireland, France, Latvia, Lithuania, Luxembourg, Austria, Poland, Romania, Sweden, United Kingdom.

2010 survey identified only 21 shops offering 'Spice'-like products, compared with 55 in 2009. This year, two online shops offering 'Spice' were based in the United Kingdom, down from 23 last year. In the most recent snapshot, 15 shops claimed to have 'Spice' available, with eight of them revealing where they are located: three in the United States and one each in Spain, Poland, Portugal, Romania and the United Kingdom. The remaining six online shops which offered 'Spice'-like products reported to be out of stock, and were possibly using the brand's name to attract customers.

Unlike illicit drugs, no large seizures of 'Spice'-like products were reported, and there is a lack of reports of criminality associated with the phenomenon. This, combined with the limited knowledge about the chemistry and effects of the new compounds, creates a 'grey zone' around the monitoring of such products.

Prevalence of 'legal-highs' use

The term 'legal highs' encompasses a wide range of products, from herbal mixtures to synthetic or 'designer' drugs and 'party pills', which are used in different ways (smoked, snorted, ingested). In addition, these products can be marketed as room odourisers, herbal incenses or bath salts, though they are intended for a different use. This diversity makes it difficult to collect and interpret prevalence data on 'legal highs'.

Few recent surveys report prevalence data on the use of 'legal highs'. A 2008 Polish study among 18-year-old students found that 3.5 % had used 'legal highs' at least once, a figure comparable to the one for hallucinogenic mushrooms (3.6 %). The use of 'legal highs' during the last 12 months was reported by 2.6 % of students ([158]).

A survey conducted among 1 463 students aged between 15 and 18 years at schools providing general and vocational training in Frankfurt found that about 6 % of respondents reported having used 'Spice' at least once, and 3 % had used it during the last 30 days. These figures could have been influenced by the media attention given to 'Spice' at the time of the survey, as just 1 % of respondents reported having taken 'Spice' more than five times. Almost two thirds of those reporting having ever used 'Spice' also reported using cannabis in the last month.

The latest *Mixmag* online survey, which targets club-goers in the United Kingdom, found that 56.6 % of respondents reported having used 'legal highs'. These included the herbal products 'Spice' and 'Magic', BZP party pills and other party pills, with last month prevalence of use of respectively 2.0 %, 4.6 % and 5.3 %. Respondents reported obtaining these drugs from friends (95 %) or purchasing them on websites (92 %), in shops (78 %), from festival stalls (67 %) or dealers (51 %).

Follow-up on other substances

Piperazines: BZP and mCPP

It has become increasingly complicated to record and interpret seizure data on piperazines. This is partly due to the multiple mixtures of substances that may be found in powders and tablets ([159]), and partly because piperazines are also combined with other drugs such as amphetamine and MDMA. In addition, forensic science laboratories do not always have the resources to identify all components of mixtures and in particular those that are not under control.

The availability of BZP appears to have decreased following the 2008 Council decision to submit it to control measures throughout the European Union ([160]). Some Member States, however, continue to report some large BZP seizures.

In 2009, mCPP still appeared to be the most widely available 'new synthetic drug' ([161]) on the European ecstasy market, either alone or in combination with MDMA. Information from the early-warning system, including reports from users in the Netherlands and seizures in Denmark and the United Kingdom, suggests that the proportion of ecstasy tablets containing mCPP (or piperazines in general) increased markedly in the first half of 2009, possibly exceeding ecstasy tablets containing MDMA. The Dutch Drug Information Monitoring System also reported that the number of samples submitted by users for analysis had doubled compared to previous years, probably due to increased concerns regarding the adverse effects of piperazines. The proportion of ecstasy tablets containing these substances may have fallen in the second half of 2009; in the United Kingdom, however, this

([158]) 2008 CBOS survey, sample of 1 400 adolescents of final grades at post middle schools; 15 % of participants reported having used drugs in the last 12 months.

([159]) For example: BZP (1-benzylpiperazine); CPP (chlorophenylpiperazine); TFMPP (1-(3-trifluoromethylphenyl)-piperazine) and DBZP (1,4-dibenzylpiperazine). CPP has three positional isomers, which are often difficult to distinguish, of which mCPP (1-(3-chlorophenyl)piperazine) is the most prevalent.

([160]) Council Decision 2008/206/JHA of 3 March 2008 on defining 1-benzylpiperazine (BZP) as a new psychoactive substance which is to be made subject to control measures and criminal provisions (OJ L 63, 7.3.2008).

([161]) mCPP is not controlled internationally, but a number of European countries have implemented measures to control it in the last few years (Belgium, Denmark, Germany, Greece, Cyprus, Latvia, Lithuania, Hungary, Malta, Romania, Slovakia, Croatia, Turkey, Norway).

may have been partly offset by an increased availability of cathinone derivatives.

These changes reflect an increasingly complex ecstasy market, which can be explained by fluctuations in the availability of the MDMA precursor chemical PMK.

GHB/GBL and ketamine

GHB (gamma-hydroxybutyric acid) has been under international control since 2001, while ketamine, which is a medicinal product, may be controlled in Member States under either their legislation on drugs or on medicines. The use of gamma-butyrolactone (GBL), which is rapidly converted to GHB when ingested, has also recently raised concerns in Europe. GBL is considered a 'non-scheduled drug precursor' at EU level, and is included in the voluntary monitoring scheme for drug precursors. Some countries (Italy, Latvia, Austria, Sweden, United Kingdom, Norway) control it under their national drug legislation.

The prevalence of GHB and ketamine use in the general population is low, but it can be much higher in specific groups, settings and geographical areas. The *Mixmag* online survey targeting club-goers in the United Kingdom found last month prevalence of use of 1.7 % for GHB and 1.6 % for GBL, but 32.4 % for ketamine. A survey among club-goers in Amsterdam conducted in 2003 and 2008 (646 respondents) reported a slight increase in last month prevalence of GHB use from 4.2 % to 4.7 %. In the Czech Republic, a 2008 survey among 363 club-goers found last month prevalence of use at 0.3 % for GHB and 0.6 % for ketamine. In London, a survey among 173 clubbers requesting medical assistance at a club medical room found that as many as two thirds requested it because of GHB/GBL use (Wood et al., 2009). A survey regularly carried out among 15- to 16-year-old school students in Frankfurt found that the numbers offered GHB had increased from 1 % in 2002 to 5 % in 2008.

The EMCDDA's 2010 Internet snapshot found no online shops registered in the EU offering GHB, but GBL was found in four online shops. None of these, however, seemed to advertise GBL as a drug or implied that it could be used for its psychoactive properties.

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About the EMCDDA

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) is one of the European Union's decentralised agencies. Established in 1993 and based in Lisbon, it is the central source of comprehensive information on drugs and drug addiction in Europe.

The EMCDDA collects, analyses and disseminates factual, objective, reliable and comparable information on drugs and drug addiction. In doing so, it provides its audiences with an evidence-based picture of the drug phenomenon at European level.

The Centre's publications are a prime source of information for a wide range of audiences including policymakers and their advisers; professionals and researchers working in the field of drugs; and, more broadly, the media and general public.

The annual report presents the EMCDDA's yearly overview of the drug phenomenon in the EU and is an essential reference book for those seeking the latest findings on drugs in Europe.

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