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TRENDS IN INJECTING DRUG USE IN EUROPE



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Introductory note and acknowledgements

In-depth reviews of topical interest are published as ‘Selected issues’ each year. These reports are based on information provided to the EMCDDA by the EU Member States and candidate countries and Norway (participating in the work of the EMCDDA since 2001) as part of the national reporting process.

The most recent issues selected are:

- Drug offences: sentencing and other outcomes;
- Polydrug use: patterns and responses.

All ‘Selected issues’ (in English) and summaries (in 23 languages) are available on the EMCDDA website:
<http://www.emcdda.europa.eu/publications/selected-issues>

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- the heads of Reitox national focal points and their staff;
- the services within each Member State that collected the raw data;
- the members of the Management Board and the Scientific Committee of the EMCDDA;
- 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, 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 at:
<http://www.emcdda.europa.eu/about/partners/reitox-network>

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Trends in injecting drug use in Europe

Introduction

Injecting drug use has a long history in Europe but it was in the early 1980s, with the rapid growth of intravenous heroin use and the spread of the human immunodeficiency virus (HIV), that this behaviour gained prominence as a core element of Europe's drug problem. Not only did injecting levels increase dramatically during the 1980s and 1990s⁽¹⁾, many European countries also saw a rapid increase in the number of HIV infections among drug users, resulting in increased numbers of deaths due to AIDS. The failure of existing prevention and treatment interventions to respond adequately to this problem became increasingly apparent. As a consequence, many European countries started to develop new approaches, which included making services more attractive and easy to access, increasing the availability of substitution treatment and investing in, what were then, innovative approaches such as needle and syringe exchange programmes. The objective of reducing drug-related harms, in particular HIV transmission, was added to national drug policies, alongside the existing objectives of preventing drug use and treating drug dependence.

Thirty years after its spread, injecting drug use, which has been associated with more than a hundred thousand deaths and even more HIV and hepatitis C virus (HCV) infections in Europe, remains at the heart of the drug problem in this part of the world. This 'Selected issue' looks at the current situation in injecting drug use. Overall, two questions guide the report: What are the prevalence and trends in injecting drug use in today's Europe? And, how do European countries try to prevent or reduce this type of drug use and the harms associated with it? These questions are addressed in an analysis of trends in injecting drug use and morbidity and mortality associated with injecting drug use. Finally, the main interventions designed to prevent or reduce the injection of drugs or to reduce the harms associated with drug injecting are reviewed in the context of the available evidence regarding their effectiveness.

Injecting and other modes of drug administration

Drugs may be taken orally, whether by drinking, swallowing or chewing. Intranasal forms of consumption include inhaling the vapour of a heated drug (chasing), spraying dissolved drug into the nose, or snorting a drug in powder form. Smoking is another way of administering drugs, whereby the fumes of burning drugs are inhaled into the lungs. Lastly, drugs can be injected with hypodermic needles into veins, under the skin or into muscle.

The speed with which a drug is absorbed and metabolised depends on the route of administration. Drugs taken orally are absorbed slowly, while those taken intranasally enter the blood more rapidly through the mucous membranes of the nose. Smoking and injecting provide the fastest absorption, leading to a larger amount of drug getting into the brain more rapidly. For example, snorting heroin gives users a 'high' in 10–15 minutes, whereas users can feel the effect of heroin about seven seconds after smoking it or injecting it into a vein. With most drugs, those who inject become dependent faster than users with other routes of administration.

The type of drug available may influence the route of administration. For example, two forms of heroin exist on the illicit drugs markets in Europe: the commonly available brown heroin (a chemical base form), which comes mainly from Afghanistan; and the less frequent white heroin (a salt form), which typically originates from south-east Asia. Brown heroin cannot be snorted, but it can be smoked and chased (inhaling the heroin vapour), and it can be dissolved in hot water with acid and injected. White heroin, on the other hand, 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.

(1) Countries in eastern and central Europe experienced the 'heroin epidemic' somewhat later.

Prevalence and trends in injecting drug use in Europe

This report analyses data from a variety of sources to estimate prevalence and trends in drug injecting in Europe. National estimates of the number of injecting drug users were available for 14 countries. Data from drug treatment centres were also used for this assessment, as they are collected according to a standardised methodology and include reports from most countries. The section ends with information on injecting drug use from non-treatment settings, consisting of selected country examples and data from prison settings and infectious disease studies among injecting drug users.

Sources of information on injecting drug use

As injecting drug use is a hidden phenomenon, practised by a very small proportion of the population, reliable information on its prevalence is not accessible by standard survey methods (Wiessing et al., 2008b). Instead, information must be gathered on specific sub-populations and by using indirect indicators of injecting drug use.

Indirect estimates of injecting drug users can be derived from observable segments of the population, for example drug users in treatment, by using methods such as capture–recapture ⁽¹⁾. The EMCDDA problem drug use indicator collects such estimates of the prevalence of injecting drug use ⁽²⁾. Although many European countries are unable to provide national estimates of injecting drug use routinely, and methods often differ between countries, compared with other regions of the world, estimates in Europe are more complete, and have better quality and comparability (Mathers et al., 2008).

Data on drug users entering treatment in European countries are reported to the EMCDDA each year, and provide the most comprehensive available statistics on the prevalence of injecting drug use in Europe ⁽³⁾. While these data refer only to a sub-group of drug users, those entering treatment, they do allow comparisons between countries and over time.

Surveys on blood-borne infectious diseases, such as HIV, among drug injectors are a further source of information on the prevalence, incidence and trends in injecting drug use. The proportions of young and new drug injectors among

Prevalence estimates of injecting drug use

Fourteen countries were able to provide national estimates of the prevalence of injecting drug use (Figure 1) for 2002 or later. The available estimates range from less than one to 15 injecting drug users per thousand population aged 15–64, suggesting considerable differences in prevalence between countries. For the twelve EU Member States with prevalence estimates, the weighted average is about 2.5 cases per 1 000 population aged 15–64 ⁽²⁾. This figure, if extrapolated to the whole European Union, would correspond to between three quarters of a million and one million active injecting drug users.

those surveyed for infectious diseases can act as indicators of recruitment into drug injecting.

Prison populations typically report higher than average prevalence levels of drug use, both in prison and before imprisonment, and this includes elevated levels of injecting. Studies carried out in prisons can provide important insights into injecting behaviour among otherwise hard-to-reach sections of the population.

Heroin injecting, alone or in combination with the use of other substances, is the cause of death in the majority of fatal accidental overdoses reported in European countries. The EMCDDA collects data on such fatalities with the drug-related death indicator, which can act as an indirect indicator of the prevalence and trends in drug injecting.

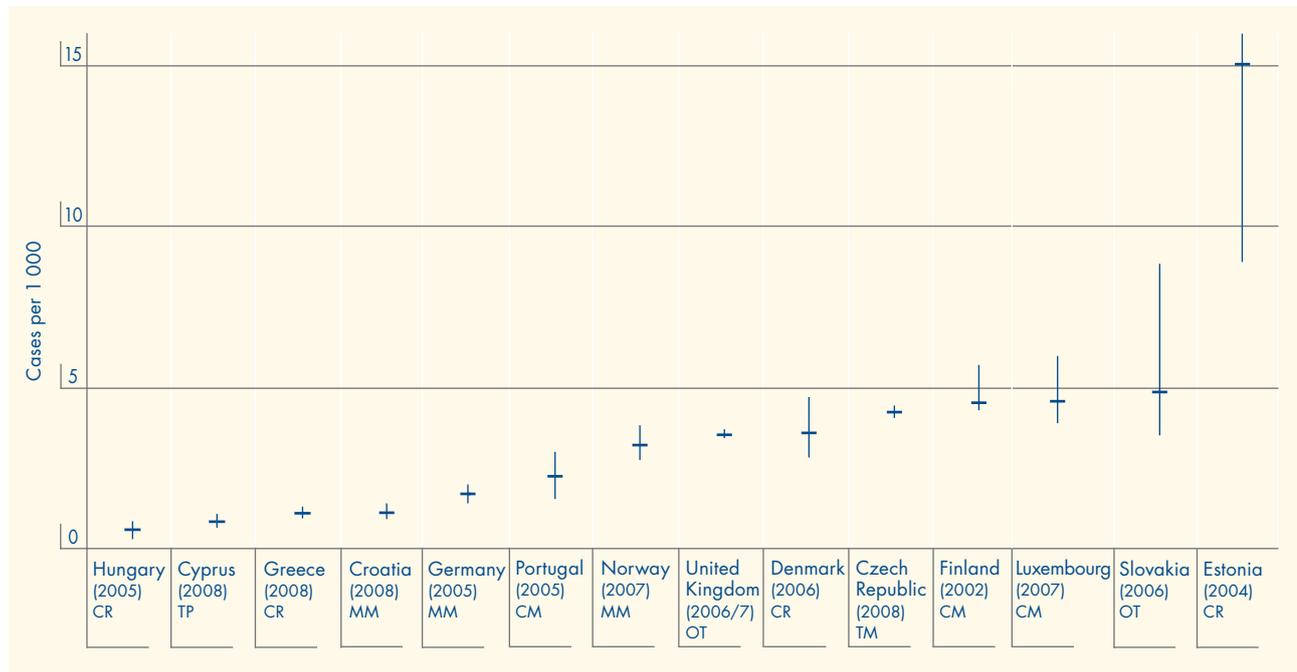
European countries have been responding to drug injecting in various ways since the problems it causes first became apparent. The EMCDDA is collecting data on treatment and harm reduction responses. As well as documenting the national responses to injecting drug use, these data can be used to identify commonalities and differences in the approaches of Member States, and may help to explain trends in injecting use and its consequences over time.

⁽¹⁾ See National prevalence guidelines on the EMCDDA website for more information on methods.

⁽²⁾ Problem drug use is defined as 'injecting drug use or long-duration/regular use of opioids, cocaine and/or amphetamines'.

⁽³⁾ See 'Treatment demand indicator — an overview of the methods and definitions used' in the 2009 statistical bulletin for more information.

⁽²⁾ The weighted average is 0.25 %, with an uncertainty range (weighted averages of lower and upper limits of the country estimates) of 0.22 % to 0.30 %, resulting in an estimate of 859 000 (753 000–1 019 000) 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.

Figure 1: Estimates of the prevalence of injecting drug use (cases per 1 000 population aged 15–64)

NB: A horizontal mark indicates a point estimate; a vertical mark indicates an estimation uncertainty interval: a 95 % confidence interval or one based on sensitivity analysis. Methods of estimation are indicated: CR, capture–recapture; TM, treatment multiplier; TP, truncated Poisson; CM, combined methods; MM, mortality multiplier; OT, other methods. Target groups may vary slightly owing to different methods and data sources; therefore, comparisons should be made with caution. For Germany, a central estimate was not available; a midpoint was calculated as the simple average of the low and high estimates. For Portugal, the interval represents the lowest and highest bounds of the two available samples, and the point estimate a simple average of the two. For Norway, an additional estimate is available (method OT, 2006, central estimate: 5.3, range 4.2–6.2). However, as it is derived by a method not recommended by the EMCDDA, the presented estimate is considered to be more reliable. For Finland and Estonia, rates have been adjusted to 15–64 from the original age ranges of the studies of 15–54 and 15–44 respectively. For Estonia, the upper limit of the confidence interval is off-scale (37.9 per 1 000). For more information on the data, see Table PDU-102 (part ii) in the 2009 statistical bulletin.

Sources: Reitox national focal points.

The lack of data and, in some cases, wide confidence intervals make drawing conclusions on time trends in the prevalence of injecting difficult. Five countries were able to provide data for successive years (Figure 2). The estimates for the United Kingdom show a significant decrease in the prevalence of injecting drug use between 2004 and 2006. Statistically significant time trends were not detected in the other four countries.

Injecting drug use among clients entering treatment

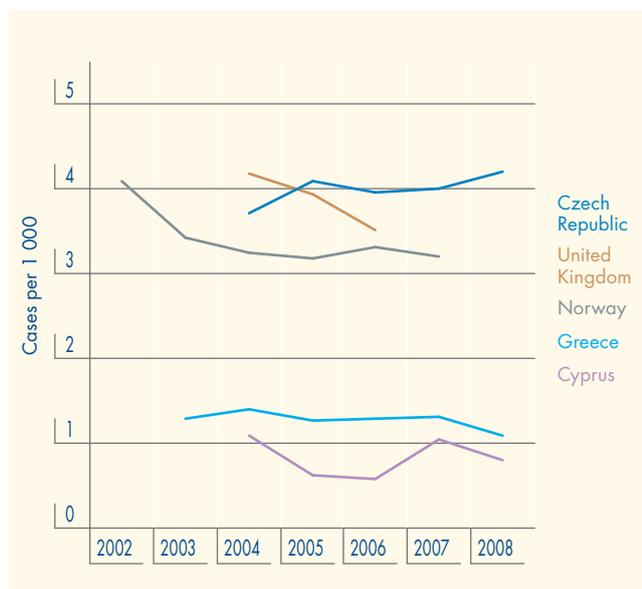
Data collected on drug users entering treatment provide the most complete and up-to-date picture of injecting drug use across Europe ⁽³⁾. On entering treatment, drug users are asked to declare the usual route of administration of their

primary drug during the last 30 days. They are also asked if they are currently (at least once in the last 30 days) or have ever injected any substance, regardless of whether the drug injected is the primary or secondary drug.

The description of prevalence presented here is based on all clients who entered drug treatment in 2007 in 26 European countries (24 EU Member States, Croatia and Turkey). Data were not available for Estonia, Poland, Portugal and Norway. The description of trends is based on the clients who entered treatment for the first time between 2002 and 2007. It should be noted that the prevalence data reported here refer only to treatment entrants, and may not be representative of injecting prevalence in the total treated population.

⁽³⁾ See 'Treatment demand indicator: collecting and interpreting data on drug users in treatment', p. 10.

Figure 2: Trends in the prevalence of injecting drug use (cases per 1 000 population aged 15–64)



NB: Data for countries providing national estimates of injecting drug use for the period 2002 to 2007. See Table PDU-102 (part ii) in the 2009 statistical bulletin for further details.

Sources: Reitox national focal points.

One-third (33%) of all drug clients entering treatment in 2007 reported injection as the usual route of administration of their primary drug. However, the proportion of those 'usually injecting' their primary drug varies greatly between countries, from under 2 % in the Netherlands to 93 % in Lithuania (⁴).

In addition to the clients entering treatment who reported current drug injecting, about a quarter of those entering drug treatment reported having injected drugs in the past. Across the 24 countries providing information (⁵), an average of 26 % of clients entering drug treatment in 2007 reported past but not current drug injecting, ranging on a national level from 0.3 % in Malta to 63 % in Romania (Figure 3). Thus, about 60 % of drug treatment clients are currently injecting or have injected drugs in the past.

As injecting drug use in Europe is mostly linked to opioid use, the level of injecting among drug users entering treatment is largely associated with the proportion of opioid users entering treatment. On average, 45 % of those entering treatment for primary opioid use reported currently injecting the drug (Figure 4). In 14 of the 26 reporting countries, more than half the opioid clients reported injecting the drug. The

Treatment demand indicator: collecting and interpreting data on drug users in treatment

The treatment demand indicator provides statistics on the treated population in Europe under three main categories: first treatment demands, all treatment demands, and all clients in treatment. 'First treatment demands' (or first treatment entries) refers to clients who report never having entered treatment before. This group can provide a window on recent trends in drug use, as it is likely to include those in the treated population who started injecting most recently. 'All treatment demands' represents all clients who entered treatment in a given year, including those entering for the first time. Finally, 'all treatment' consists of all clients who were in treatment in a given year, regardless of whether they entered treatment in that year or were already in treatment since an earlier year. This group includes most drug users in long-term treatment, such as opioid substitution. Data on all clients in treatment are still limited and not regularly collected, but a pilot study carried out in 14 countries (¹) showed that the proportion of injectors is usually highest in this group, although depending on primary drug and country (²).

Differences in the reported prevalence of injecting among the three groups of treated drug users may provide insights into changing trends in drug use. For example, a low prevalence of injecting among opioid users entering treatment for the first time combined with a higher prevalence among all opioid users entering or already in treatment might indicate a decreasing trend of injecting among new opioid users. Thus, when interpreting data on drug users in treatment, it should be kept in mind that the prevalence of injecting depends on the group assessed. Furthermore, data on treatment entries cannot be extrapolated to the whole population of treated drug users and may not be representative of the wider population of drug users, which includes those not in treatment.

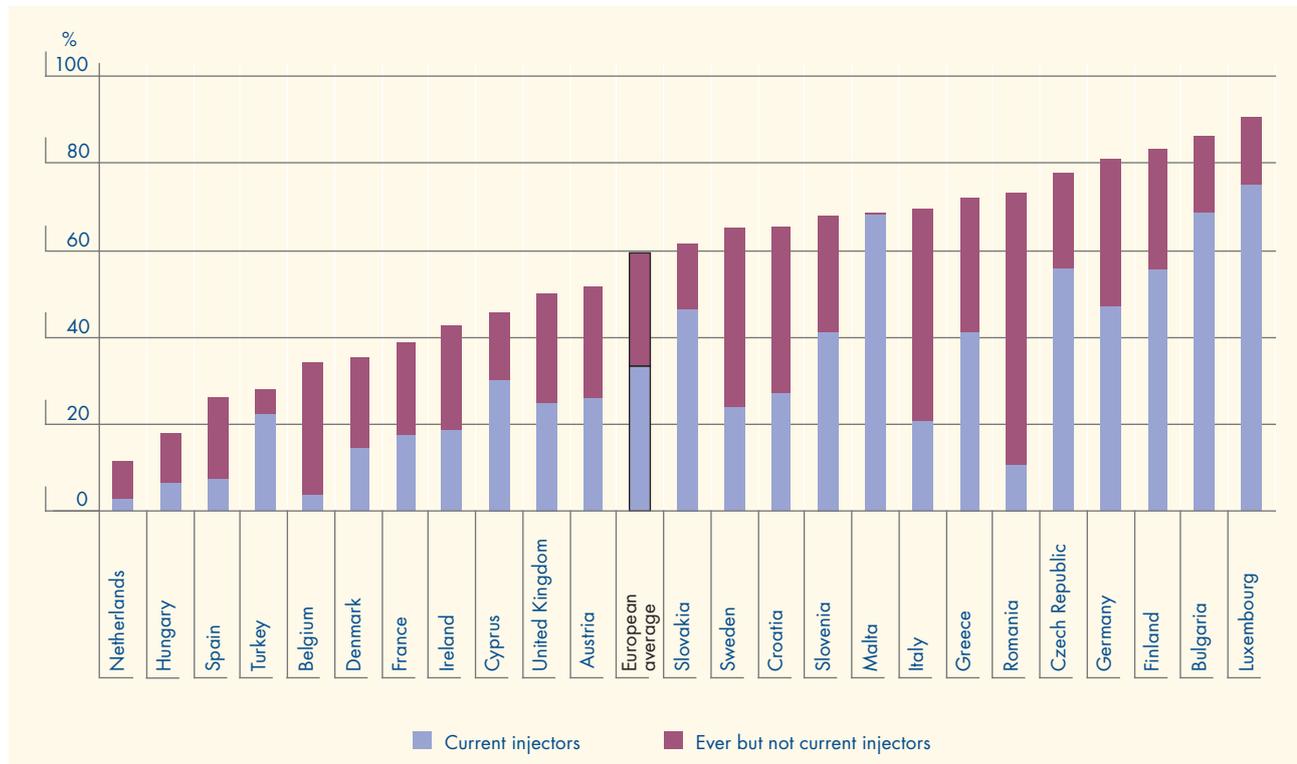
(¹) For information on the study, see EMCDDA (2009b) p. 20.

(²) See Table TDI-38 in the 2009 statistical bulletin.

lowest proportion of current injectors among primary opioid users entering treatment is reported by Denmark (2 %), with Belgium, Spain, France and the Netherlands also reporting levels of injecting below 25 %. The highest levels of injecting among opioid clients are reported from countries that entered the European Union in 2004 or later, with injecting reported by 97 % of opioid clients in Lithuania, and by more than 90 % of opioid clients in Latvia and Romania. The type of heroin available on the market, prices and other factors, as

(⁴) See Table TDI-5 (part iv) in the 2009 statistical bulletin.

(⁵) Data were not available from Estonia, Latvia, Lithuania, Poland, Portugal and Norway.

Figure 3: Current and past injecting drug use among users of any drugs entering treatment

NB: Data on drug treatment entrants in 2007 or most recent year available. Current injectors reported having injected a drug during the 30 days before entering treatment. Former injectors reported having injected a drug at some time in their lives, but not in the 30 days before entering treatment.

Sources: Reitox national reports 2008.

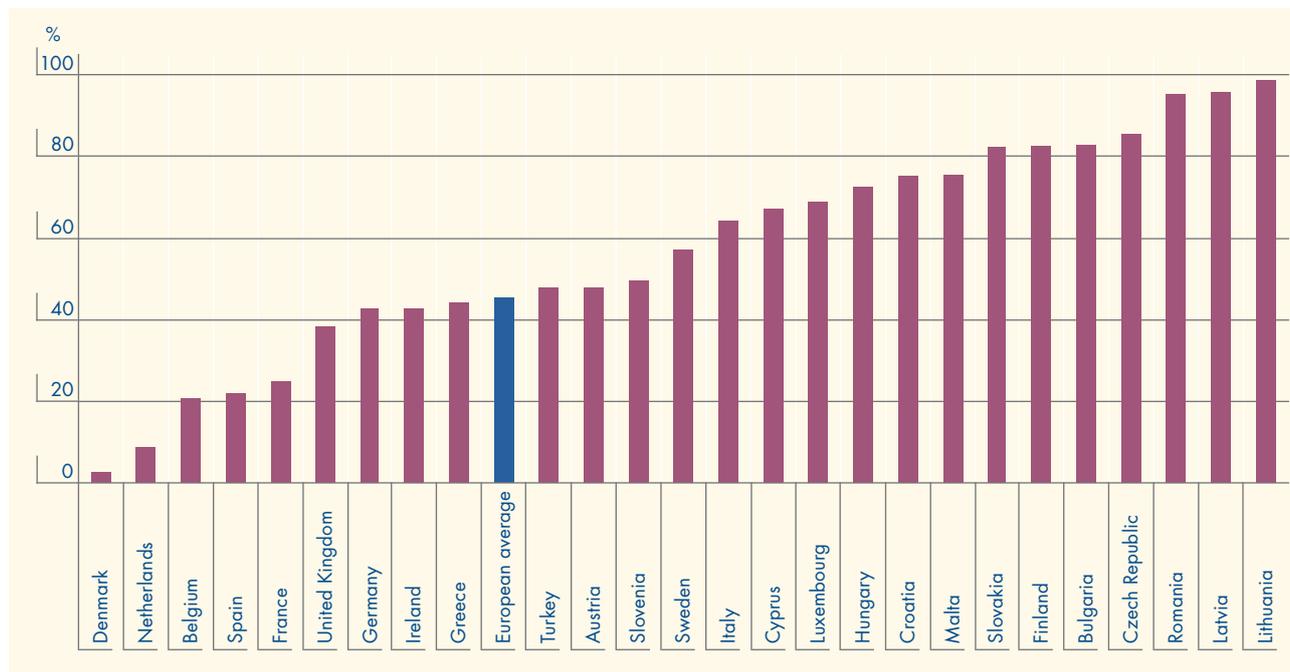
well as some methodological differences in data collection might explain some of the variations between countries.

The prevalence of injecting among stimulant users differs by drug: cocaine is not commonly injected, while the opposite is true for amphetamines (including methamphetamine). Among cocaine clients entering treatment in 2007, a relatively small proportion (8 %) reported usually injecting the drug. In the three countries with a high number (over 10 000) of clients entering drug treatment for primary cocaine use, the proportion of injectors among all primary cocaine users ranged from 0.1 % in the Netherlands to 6 % in Italy. Conversely, a number of countries in Europe have long-established amphetamine problems and amphetamine

users are an important part of the treatment population. Among amphetamine users entering drug treatment in these countries, injecting the drug is common. Thus, in the four countries where primary users of amphetamine (Finland, Sweden) or methamphetamine (Czech Republic, Slovakia) form the largest group (between 40 % and 80 %) of treatment entrants, injecting is reported as the usual means of administration by between 41 % and 83 % of primary amphetamine or methamphetamine clients ⁽⁶⁾.

Use of other drugs, such as hypnotics, sedatives, hallucinogens and volatiles, among clients entering treatment is rare, and the injection of those drugs is seldom reported.

⁽⁶⁾ See Table TDI-5 (part iv) in the 2009 statistical bulletin.

Figure 4: Injecting as the main route of administration among opioid users entering treatment

NB: Data on drug treatment entrants in 2007 or most recent year available. European average based on data from 26 countries; data for Germany are based not only on the primary drug.

Sources: Reitox national reports 2008.

Time trends in injecting among treatment entrants

Yearly data on drug users entering treatment for the first time provide useful insights into potential new trends of drug injecting in the wider drug using population. However, data are not available in all countries for longer periods, and changes in some countries in both data coverage and the reporting systems have taken place over time.

Among clients who between 2002 and 2007 entered treatment for the first time for opioids, cocaine or amphetamines, the proportion who reported injecting their primary drug has decreased in most countries. Among heroin users entering treatment for the first time, the decline in proportion of injectors was statistically significant in ten countries. Only Bulgaria and Slovakia buck the trend with statistically significant increases⁽⁷⁾. However, some countries report an increasing number of heroin injectors entering treatment for the first time.

In countries where a large proportion of drug clients (e.g., Finland, 51 %; Denmark, 21 %) reported opioids other than heroin (e.g., buprenorphine, misused methadone, painkillers) as the primary reason for entering treatment⁽⁸⁾, drug injecting among first time opioid clients remained stable or decreased slightly between 2002 and 2007.

Among primary cocaine users who entered treatment for the first time, the proportion of drug injectors also decreased in most countries during the period 2002–07. However, both the number and the proportion of first time cocaine clients are low in many countries. The exceptions are Spain, where they make up 58 % of first time clients, the Netherlands (29 %) and Italy (26 %). Injecting is reported by few of the first time cocaine clients in these three countries (under 1 % in Spain and the Netherlands, and about 5 % in Italy). A stable trend in injecting can be observed among users of amphetamines entering treatment for the first time, with small variations by country and by year⁽⁹⁾.

(7) Data for Bulgaria and Slovakia cover the years 2003 to 2007, during which the proportion of injectors among first time heroin clients in Bulgaria increased from 67 % to 74 % and in Slovakia from 77 % to 84 %. In both countries, the number of injectors declined over the period.

(8) See Table TDI-113 in the 2009 statistical bulletin.

(9) See Table TDI-5 (part i) and (part iii) in the 2009 statistical bulletin, and Table TDI-4 (part ii) in the 2005, 2006, 2007 and 2008 statistical bulletins.

Other sources of information on injecting drug use

Selected country studies

Studies of drug users sampled from non-treatment settings generally confirm the decline in drug injecting among opioid users across Europe suggested by the treatment data ⁽¹⁰⁾. This report looks at recent trends whereas, in a number of countries with long-established and historically relatively severe opioid problems, the decline in new injecting is observable from as early as the late 1980s and most observable during the 1990s.

For example, the Netherlands has observed a large decline in injecting since the 1980s. Drug users participating in the Amsterdam Cohort study between 1986 and 1998 reported both increasing cessation of injecting and decreasing initiation into injecting. Besides individual factors, ecological factors, especially changes in drug use culture and the drug market, were probably important in this change (van Ameijden and Coutinho, 2001). The incidence of injecting drug use among young problem drug users remains low (2.1 per 100 person-years in a cohort study by Buster et al., 2009) in this country.

Spain also reported a sharp decline in the number of injectors admitted to first treatment in the 1990s (Bravo et al., 2007). A study of heroin seizures and treatment data suggests that this trend may be related to an increase in inhalation of heroin vapour (chasing) paralleling an increase in the availability and purity of brown heroin, which unlike white heroin is suitable for this means of administration (de la Fuente et al., 1996). In provinces where white heroin predominated, most users injected, but with the gradual disappearance of white heroin, many heroin users switched to chasing. In regions where heroin was almost exclusively available in the brown form of the drug, a higher purity was associated with a larger proportion of users who were chasers (de la Fuente et al., 1996). This suggests that users may adjust their route of administration depending on the type and purity of the drug available.

In France, studies show that initiation of heroin use has become increasingly associated with snorting; and injecting drug use now appears to occur at a later stage of the drug using career than it did in the past. There are, however, signs pointing to a possible increase in injecting among some groups of young drug users in France, as revealed by ethnographic research.

Injecting drug users tested for infectious diseases

Seroprevalence studies carried out as part of infectious disease surveillance may also provide information on drug injection ⁽¹¹⁾. The data are collected by the EMCDDA using standardised instruments and include breakdowns by age and years of injecting. The proportion of young (under 25) or new (injecting for less than two years) drug users in these samples of tested injecting drug users may be considered to reflect changes in the composition of the underlying population of injectors, reflecting patterns of injecting initiation.

New injecting drug users make up less than 10 % of injectors sampled in ten Member States, but in three countries (Czech Republic, Lithuania, Turkey) their proportions are much higher (above 20 %), suggesting higher levels of initiation in recent years (Figure 5). Young injecting drug users (under age 25) account for less than 20 % of injectors sampled in eleven Member States, but more than 40 % of injectors sampled in the Czech Republic, Estonia, Latvia, Lithuania, Austria, Romania and Slovakia. Most of the countries that report higher proportions of young injectors experienced the introduction of heroin use later than elsewhere in Europe. However, these differences in proportions have to be interpreted with caution due to the limitations of the data. The samples have been recruited in different settings, e.g. drug treatment versus low-threshold services, which may come in contact with users earlier in their drug using career. There are also differences in mortality or migration among the drug users sampled.

Prison studies

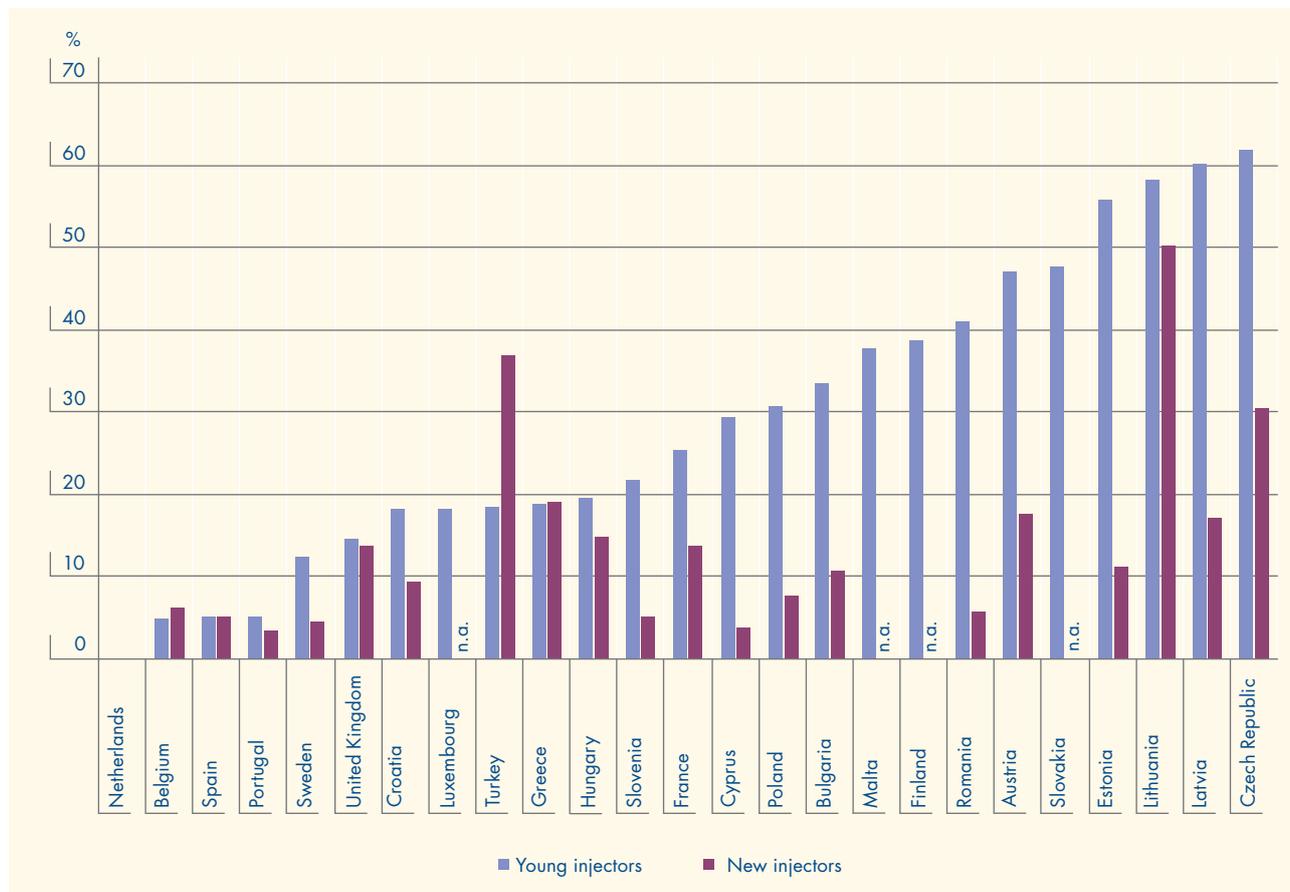
Injecting drugs in prison is an important public health problem, as it is often associated with high levels of needle sharing due to the limited availability of sterile needles in prisons. At least two documented HIV outbreaks in prisons were related to needle sharing (e.g. Caplinskas and LikataVICIUS, 2002; Taylor et al., 1995). Despite being places where injecting drug users can experience serious health risks, prisons also provide an important opportunity for intervention, as imprisoned drug users can be treated for their drug dependence and be provided with healthcare and other services.

Studies reported to the EMCDDA on drug use among prison inmates across Europe show a lifetime prevalence of injecting in different countries ranging from 6 % to 38 % of inmates, with half of the countries (six out of twelve) reporting figures of over 10 % ⁽¹²⁾. Injecting within prison is reported by between 1 % and 31 % of inmates, depending on the

⁽¹⁰⁾ Most of the reported studies' samples are of users of low-threshold facilities or users arrested by the police.

⁽¹¹⁾ See the EMCDDA website for more information on the key indicator on drug-related infectious diseases.

⁽¹²⁾ See Table DUP-2 in the 2009 statistical bulletin.

Figure 5: Percentage of new and of young injectors reported in samples of injecting drug users tested for HIV or HCV

NB: n.a. — data not available. Young injectors are those under 25 years; new injectors are those injecting for less than two years. Samples are of injectors reported from studies on infectious disease (HIV and HCV). The latest available sample for each country during the period 2005–07 has been used, subject to there being at least 100 injectors, except for: Latvia ($n = 93$), Netherlands ($n = 56$), Slovakia ($n = 88$) and Turkey ($n = 38$). Data are from 2003 for the Czech Republic and Latvia and from 2004 for Spain and Turkey. For more information, see Table PDU-105 (part i) and (part ii) in the 2009 statistical bulletin.

Sources: Reitox national focal points.

country, with studies from five countries (out of nine) finding a self-reported prevalence of injecting while being in prison of at least 10 %⁽¹³⁾. This shows that many inmates are or have been injecting drug users and that a relatively high proportion of injecting drug users may continue to inject in prison.

Injecting risk behaviours and health consequences of injecting drug use

Several types of injecting behaviours are practised by injecting drug users that put them at risk of contracting infectious diseases. Sharing of needles and syringes is strongly associated with a risk of blood-borne infections, such as HIV and hepatitis B and C viruses (Girardi et al., 1990; Marmor et al., 1984; Titti et al., 1988). Moreover, there is increasing evidence that the type of syringes injectors use is also associated with infection risk (Gyarmathy et al.,

2009; Zule and Bobashev, 2009). Sharing other injecting equipment such as cookers, filters or rinse water and 'front/backloading' may also be a potential source of infections in some populations (Grund et al., 1990; Gyarmathy et al., 2009; Hagan et al., 2001). Furthermore, injecting without others present may increase the risk of fatal overdose.

HIV trends in Europe

HIV infection represents one of the most serious health consequences of injecting drug use and one that poses a threat not only to drug users themselves but also to their sexual partners and the general population. Newly diagnosed and reported HIV cases provide an important picture of the epidemiological trends in HIV infection among drug users (ECDC, 2009; Wiessing et al., 2008a), although the data should be interpreted with caution as they can be confounded by testing patterns and reporting delays.

⁽¹³⁾ See Table DUP-4 in the 2009 statistical bulletin.

In the countries of the European Union, the rates of reported newly diagnosed cases of HIV infection among injecting drug users are mostly at stable and low levels, or in decline. In some Member States (Estonia, Latvia, Portugal), however, the data suggest that HIV transmission related to injecting drug use may still be occurring at relatively high rates, even if these rates are now declining in Estonia and Portugal. Among countries neighbouring the European Union, increasing rates of reported HIV cases attributed to injecting drug use suggest high levels of ongoing transmission (ECDC, 2009; Wiessing et al., 2008a).

Trends in drug-induced deaths in Europe

Drug-induced deaths are the major cause of death among problem drug users⁽¹⁴⁾. Data collected with the drug-related deaths indicator show that, in the European Union, 35 % to 100 % of the reported drug-induced deaths in 2007 were related to opioids (mainly heroin). As the majority of heroin deaths are related to injection, this indicator may allow inferences about prevalence and trends in injecting drug use.

Between 2000 and 2003, the number of reported drug-induced deaths decreased in 21 of the 24 countries reporting data, and the total decreased by 23 % from 8 275 to 6 350. This trend was reversed in the following years, when 16 of the 24 countries reported an increase in drug-induced deaths between 2003 and 2005, with the total number of deaths rising from 6 350 to 6 887 (+ 8.5 %) (Vicente et al., 2009). Data for 2007 show that the trend in the number of drug-induced deaths is stable in five out of 18 EU Member States, but is rising in 13 of these countries.

In most countries, the mean age of drug-induced deaths is in the mid-thirties, and in many instances it has been increasing steadily for more than ten years. This reflects an ageing cohort of problem drug users in many countries, and suggests that the number of young heroin users is stabilising or even falling. The ageing cohort is consistent with a decrease in the number of deaths reported in drug users under the age of 25 in many countries. Nonetheless, in some countries, the sustained numbers of overdose deaths reported in drug users under the age of 25 suggest that there is still recruitment of young drug users, particularly heroin injectors.

Interventions targeting injecting drug use

European countries have targeted injecting drug use and its consequences with a variety of interventions. The most important of these has been drug treatment, in particular opioid substitution treatment which, besides helping users to stabilise or lessen their drug use, is the most effective intervention in reducing — if not stopping — injecting.

Both opioid substitution and drug-free, or abstinence-based, modalities are available in all EU Member States, Croatia and Norway. The availability of the various treatment modalities varies geographically in terms of accessibility and coverage. National experts, surveyed by the EMCDDA (2009a), estimated that substitution treatment is available to at least half of the opioid users in 16 countries. In the same countries, drug-free modalities are the preferred choice for 10–25 % of opioid users. In a further ten countries, substitution treatment is estimated to be available to a minority of opioid users, either because drug-free options are preferred, especially for younger or first-time clients, or due to difficulties in gaining access to substitution treatment.

For those injectors for whom treatment is not a viable option or only a partial solution, other interventions such as needle and syringe exchange programmes aim to reduce the risk of infectious diseases associated with sharing injecting equipment.

Becoming an injecting drug user

Seeking a greater effect of the drug by injecting was the reason most often cited by injectors when they were asked to identify why they started injecting. Other reasons mentioned included curiosity about the effect of injecting, pleasure-seeking, peer pressure, perceived cost savings of injection over other routes of administration, as well as coping with emotional problems, a positive effect on reputation by injecting or simply having the possibility to inject.

Social network and social environment characteristics, more specifically, the influence of sex partners, friends or family members were among the strongest and most consistent predictors for the initiation of injecting in formal analyses of the factors associated with initiation. However, the exact role of social network members is unclear. Few injecting drug users reported having been alone during their first injection episode, and the most frequent initiator was a friend or acquaintance. This underlines the act of initiation as a mostly social event.

Among the individual characteristics, younger age seems to be one of the strongest risk factors. An important predictive factor for injecting initiation was an increase of drug use prior to initiation, especially a higher frequency and amount of heroin use, which in the studies reviewed was most often reported to be the drug first injected. Higher amount and frequency of use are indicators of a higher degree of drug tolerance, which is a marker for dependence.

NB: This box is based on an unpublished systematic literature review (Stellmans, 2008) to assess factors related to transitioning to injecting drug use.

⁽¹⁴⁾ Drug-induced deaths are also called 'poisonings' or 'overdoses'. For more information on drug-related deaths and mortality, see the key indicator page.

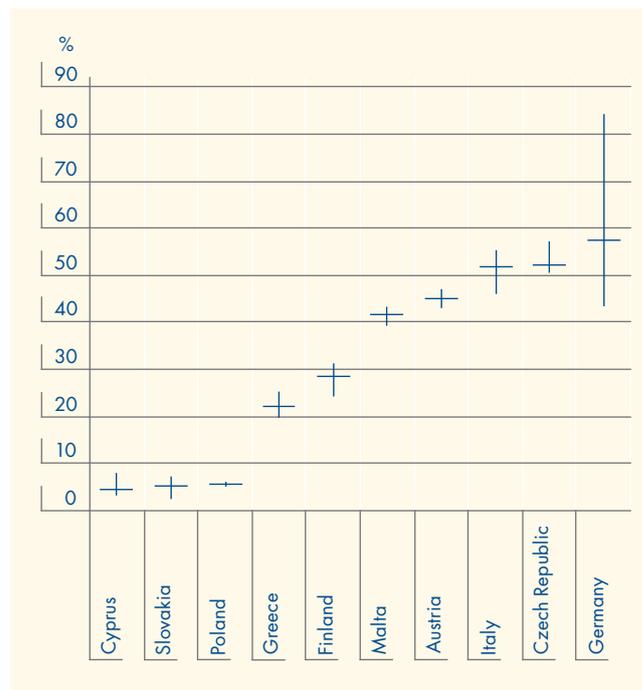
Interventions to reduce drug injecting: opioid substitution treatment

In the European Union, opioid substitution treatment, mostly with methadone or buprenorphine, is the most widely used treatment for opioid addiction (EMCDDA, 2009a). Having been studied over several decades in different parts of the world, methadone maintenance treatment constitutes the most thoroughly evaluated form of treatment for drug dependence. A relatively robust evidence base supported by data from treatment outcome studies and controlled trials exists for the effectiveness of methadone and other drug substitution treatments in treating dependence on heroin and other opioids (Committee on the Prevention of HIV Infection among Injecting Drug Users in High-Risk Countries, 2007; Gossop, 2006; Kimber et al., 2010).

In the context of the AIDS epidemic among heroin injectors, much of the research on the role of drug dependence treatment as an HIV-prevention strategy has focussed on the effectiveness of methadone maintenance treatment. Methadone maintenance treatment was found to reduce opioid use, increase rates of retention in treatment, reduce the proportion of drug users who inject and lead to reduced levels of HIV risk behaviours, such as reductions in frequency of injection or in sharing injecting equipment (Darke et al., 2005; Gossop et al., 2004; Gowing et al., 2008; Kelley and Chitwood, 2004). Outcomes were mediated by other variables of methadone treatment, e.g. lower rates of HIV infection were associated with higher methadone doses and longer duration of treatment (Farrell et al., 2006; Gossop, 2006). The extent of reductions in injecting-related risks was found to depend also on the level of co-use of other injectable drugs such as cocaine or other stimulants (Gowing et al., 2008).

In 2007, the total number of clients in substitution treatment in the European Union was estimated to be around 650 000, which is about 40 % of the estimated total number of problem opioid users. The level of provision, however, is not uniform across Europe. Estimates from ten countries where data are available show that between 5 % (Cyprus) and more than 50 % (Germany) of problem opioid users may have access to opioid substitution treatment (see Figure 6). Especially in countries where opioid use is more recent, substitution treatment may not be available in all treatment centres, and where it is available access may be more restricted. Furthermore, many injectors may not yet have progressed to a level of problematic use that requires them to seek treatment. Thus, differences in treatment coverage may partly reflect differences in the average time since onset and the need for treatment between different populations of drug users (Nordt and Stohler, 2008).

Figure 6: Opioid substitution treatment clients as a percentage of the estimated number of problem opioid users



NB: The graphic shows the estimated or reported number of opioid maintenance clients as a proportion of the number of problem opioid users, estimated by various methods, in each country with available data. A horizontal mark indicates a point estimate; a vertical mark indicates an estimation uncertainty interval. For further information, see Figure HSR-1 in the 2009 statistical bulletin.

Sources: Reitox national focal points.

The numbers receiving substitution treatment in 2007 represent a more than three-fold increase since 1995, when just over 200 000 opioid users received this form of treatment. Once substitution treatment is approved as a regular treatment modality, an ongoing increase in client numbers can be noted (¹⁵). In recent years, some Member States have shown a stable or even declining trend. In Spain, for example, the number of substitution treatment clients reached about 90 000 in 2002, decreasing to about 82 000 in 2007. This trend is possibly associated with a decrease in heroin use among drug users during the same period.

Interventions to reduce harms related to drug injecting: needle and syringe programmes

Providing drug users with access to sterile injecting equipment is an important measure in reducing the harms associated with drug injecting. The primary goal of needle and syringe programmes is to reduce the spread of blood-borne diseases, particularly HIV. In addition, these

⁽¹⁵⁾ See Table HSR-11 in the 2007 statistical bulletin for trends in methadone treatment in the EU countries and Norway from 1993 to 2005 and Table HSR-3 in the 2009 statistical bulletin for the estimated number of clients in methadone treatment and of clients receiving any opioid substitution in 2003 to 2007.

programmes aim to increase access to treatment and harm-reduction services, provide information and advice on safer injecting drug use and make contact with hard-to-reach populations. Overall, the available evidence supports the efficacy and cost-effectiveness of this intervention (Committee on the Prevention of HIV Infection among Injecting Drug Users in High-Risk Countries, 2007; Ritter and Cameron, 2006; Kimber et al., 2010).

Needle and syringe programmes exist in all EU Member States, Croatia and Norway, and have high availability in most countries. The main types of needle and syringe programmes are those linked to specialist drugs agencies (available in all countries, except in Northern Ireland and Sweden). Subsidised or free syringes are provided in pharmacies in eleven EU Member States and Croatia, and syringe machines are in use in seven countries. Because incarceration may be a significant risk factor in the continued spread of infectious diseases among injecting drug users, syringe exchanges have been established in prisons in five EU countries⁽¹⁶⁾.

The availability of syringe exchange programmes is considered good in 15 countries, where national experts estimate that needle and syringe programmes (all types, including pharmacy-based programmes) reach the majority of injecting drug users. In eleven countries⁽¹⁷⁾, however, experts estimate that national needle and syringe programmes do not reach the majority of injectors.

For countries that monitor clients of needle and syringe programmes at drug agencies, the coverage of these interventions can be calculated. The proportion of the estimated population of injecting drug users in contact with these needle exchange outlets varies from 10–15 % in Romania, to 45 % in France, with Lithuania reporting about 20 % and Slovenia 40 %⁽¹⁸⁾. In the Czech Republic, 70 % of the estimated population of problem drug users are in contact with the network of low-threshold agencies, although not all of those clients are injecting drug users or use the facilities to exchange syringes.

Distribution of syringes by street outreach workers and mobile units has been shown to access hard-to-reach populations (Coyle et al., 1998), especially in locations where drug injecting is highly stigmatised (Ritter and Cameron, 2006). Outreach, in general, appears to help expand service

Interventions to prevent, delay, and reverse transitions to drug injecting

Three studies evaluating interventions to prevent, delay and reverse transitions to injecting drug use⁽¹⁾ were identified by J. Kimber in an unpublished survey of the English-language scientific literature. Two of them, both without control groups, looked at interventions that targeted current injectors, aiming to discourage their social modelling to non-injectors and to encourage them to adopt other routes of administration. The brief motivational intervention ‘Break the cycle’ developed by Hunt and colleagues in England (Hunt et al., 1998) was delivered to injecting drug users in a single prevention session, during which the concept of social modelling was explained and their skills to resist requests to initiate new injectors were improved. The study reported that after the intervention, participants were less likely to inject in front of non-injectors and to initiate drug users into injecting. The second study, conducted by Dolan and colleagues in Australia (Dolan et al., 2004), evaluated a cognitive behavioural treatment intervention encouraging injectors to shift to other routes of administration. The study reported an increase of participants using non-injecting routes of administration at each follow-up. Despite such positive results, the evidence for the effectiveness of this type of intervention was considered insufficient by the researchers, who called for further research to better understand their impact.

The third study, a randomised controlled trial, was conducted in New York in 1986–88 (des Jarlais et al., 1992) and aimed to increase participants’ resilience to transitioning to injecting. It examined the effect of an HIV and drug injection prevention programme among current heroin sniffers and found a modest effect at follow-up after 9 months (15 % of the experimental group and 33 % of the control group had started to inject), but it was concluded that most persons at risk would need a more intensive intervention.

(1) A ‘transition’ is defined as the initiation or resumption of injecting drugs.

provision quickly in the early stages of a heroin epidemic. Such outreach services are an important part of syringe programmes in eight countries (Bulgaria, Croatia, Estonia, Hungary, Latvia, Slovakia, Poland, Portugal), most of which have experienced recent heroin epidemics. In these countries, the number of mobile syringe programmes is equal to or higher than the number of syringe exchange programmes operating at fixed locations.

⁽¹⁶⁾ Needle and syringe programmes have been reported in prisons in Germany, Spain, Luxembourg, Portugal and Romania; see Table HSR-4 in the 2009 statistical bulletin.

⁽¹⁷⁾ Bulgaria, Estonia, Ireland, Italy, Latvia, Hungary, Austria, Poland, Romania, Slovakia and Sweden. Needle and syringe programmes do not exist in Turkey, and the first and still unofficial programme in Cyprus was reported as having a very low level of use. Expert estimates of the availability of needle and syringe programmes in Malta and Croatia were not available.

⁽¹⁸⁾ For further information on numbers of clients and client contacts at needle and syringe programmes see Table HSR-5 (part ii) in the 2009 statistical bulletin.

In the Czech Republic, needle and syringe exchange programmes are complemented by the distribution of gelatine capsules intended mainly for perritin users ⁽¹⁹⁾.

Provision of syringes and estimated coverage of needle and syringe programmes

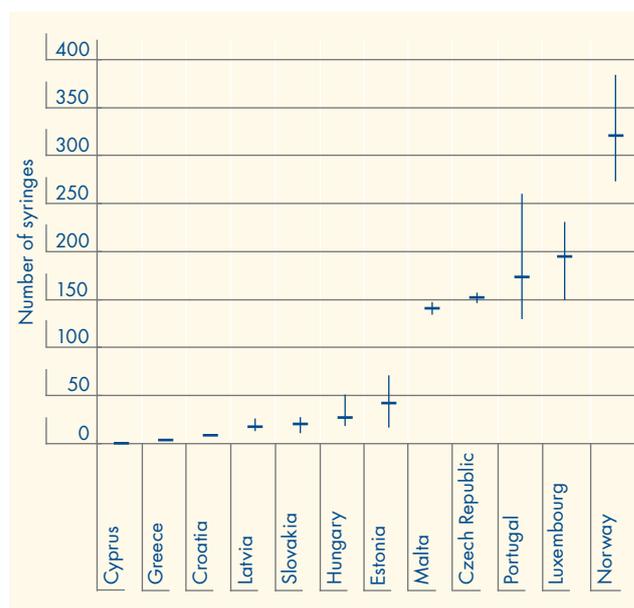
The number of syringes provided through needle and syringe programmes increased between 2005 and 2007 in most of the 20 countries for which data are available. Between 2003 and 2007, the total number of syringes distributed increased by 33 % in the 14 countries able to provide information ⁽²⁰⁾. Continuous increases during this period were reported from Belgium, Bulgaria, the Czech Republic, Estonia, Hungary, Austria, Portugal, Slovakia and Finland, while decreases were reported from Spain, Lithuania, Luxembourg and Poland. Syringe provision at Latvian needle and syringe programmes remained at low levels during this time.

By combining data on the number of syringes distributed with estimates of the number of injectors, it is possible to calculate the number of syringes distributed per estimated injecting drug user (Wiessing et al., 2001). Sufficient data exist for this calculation to be made for twelve countries. In five of the countries, specialised needle and syringe programmes provided more than 140 syringes per estimated injector per year, while they operated at much lower levels elsewhere (see Figure 7). On average, and not including pharmacy sales, specialised syringe provision outlets distribute about 50 syringes a year per estimated injecting drug user across the European Union (Wiessing et al., 2009). These data should be interpreted with caution, but they suggest that specialised needle and syringe programmes, even if currently available in almost all Member States, have varying levels of coverage.

To estimate the overall availability of sterile syringes, it is necessary to include those sold through pharmacies. For example, in the Czech Republic the number of syringes sold through pharmacies increased the national estimate of syringe availability by about one-third to 202 syringes per injecting drug user per year. Overall, the total need of syringes for an average injector depends on factors such as the average frequency of personal re-use and the average injecting frequency, which are linked with the severity of the dependence and the types of drugs used.

Due to their role within treatment and harm-reduction responses and their increasing coverage, opioid substitution treatment programmes and low-threshold agencies with needle and syringe programmes provide useful opportunities

Figure 7: Syringes distributed through specialised programmes, per estimated injecting drug user per year



NB: A horizontal mark indicates a point estimate; a vertical line indicates an estimation uncertainty interval. The estimates of injecting drug users and the number of syringes distributed are for the same year, which is 2007 except for Estonia and Latvia (2004), Hungary and Portugal (2005) and Malta, Slovakia and Norway (2006).

Sources: Reitox national focal points.

to gain access to drug injectors as well as to non-injectors. For example, staff at low-threshold facilities (including those without needle and syringes programmes) may promote non-injecting routes of administration, or discourage social modelling by injectors to those at risk ⁽²¹⁾. In addition, individual counselling on infectious disease risk and personalised assessment of risk behaviours also exist in all European countries.

Overall findings

The most recent data, notably those provided by drug treatment clients, point to injecting drug use remaining stable or declining in most European countries. Concomitant with the declines in injecting drug use that have been observed in some countries, non-injecting routes of administration (smoking, chasing) have become more popular among heroin users.

The data indicate also that there is still a large population of drug injectors in Europe and that, in some countries, new recruitment into injecting drug use may still have been high

⁽¹⁹⁾ This targeted harm-reduction method is reviewed in Hartnoll et al. (2010).

⁽²⁰⁾ See Table HSR-5 (part i) in the 2009 statistical bulletin.

⁽²¹⁾ See 'Interventions to prevent, delay, and reverse transitions to drug injecting', p. 17.

in recent years. Estimates available from the 14 EU Member States with recent data suggest an average prevalence of injecting drug use of about 2.5 cases per 1 000 population aged 15–64. Extrapolated to the whole European Union, this would result in an estimate of between three quarters of a million and one million active injecting drug users. In prisons, injecting drug users are generally more prevalent than in the community, and some continue to inject while in custody. Among the treated population, current or former injectors still make up the majority of clients entering drug treatment in Europe.

Another key observation is that the prevalence of injecting drug use varies widely between European countries. The differences observed between countries in the prevalence of drug injecting, and sometimes in the trends, cannot be easily explained. However, injecting levels are generally more pronounced in east European countries. Achieving a better understanding of prevalence and trends in injecting drug use in a national context may entail taking into account disparate influences. These may include: market factors, such as the type and price of drugs; cultural factors, such as norms and attitudes in population groups; socio-epidemiological factors, such as the period of onset of a heroin epidemic; and available treatment and intervention programmes.

Injecting drug users remain a population at high risk of fatal outcomes and other health and social problems. The prevalence of the health consequences of injecting, such as HIV and hepatitis C virus (HCV) infection, show also wide variations between countries. However, whereas HIV

prevalence is mostly concentrated in some countries, HCV prevalence is still generally high across the European Union. Overall, rates of reported newly diagnosed HIV infection are generally declining or low across the European Union, suggesting that recent transmission through injecting drug use is generally low. Both HIV prevalence and rates of reported newly diagnosed cases in injecting drug users are lower in the European Union than in many non-EU countries, especially those in eastern Europe. Drug overdose deaths, another serious public health consequence of injecting drug use, have recently started to increase in Europe after years of decline.

Measures such as opioid substitution treatment and needle and syringe programmes, which aim to reduce injecting-related harms, now reach many of those who need them. Estimates suggest that more than one in three problem opioid users in Europe are in substitution treatment. Of the different large-scale interventions in Europe, this type of treatment has probably had the most impact on reducing injecting prevalence. Opioid substitution treatment has been shown in several large and well-designed studies to strongly reduce injecting drug use (by between a factor of three and seven). Many studies have also consistently found that giving out sterile injecting equipment results in a reduced frequency of self-reported injecting risk behaviours such as sharing and re-use of needles and syringes. On average, and not including pharmacy sales, it is estimated that specialised syringe provision outlets distribute about 50 syringes a year for each injecting drug user across the European Union.



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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.

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