

# 13. Drug use and related consequences among prison populations in European countries

Linda Montanari, Luis Royuela, Manuela Pasinetti, Isabelle Giraudon, Lucas Wiessing, Julian Vicente

## Key points

- A history of drug use is common among European prisoners, with levels disproportionately high compared to the general population.
- Health problems, especially communicable diseases and psychiatric co-morbidity, are especially prevalent among prisoners using drugs.
- The mortality risk in the first weeks after release from prison is extremely high.
- Relevant differences are reported between European countries in drug use and drug-related problems among prisoners.
- In European countries, valid and comparable data on drug use and related consequences among prisoners are still scarce and harmonization work is needed

## Introduction

Prisons are places with difficult living conditions, where populations from poor communities and marginal social groups are overrepresented (1).

According to data from the Council of Europe, about 635 000 people were estimated to be in penal institutions in the 28 EU member states and Norway on 1 September 2010, an average of 135 prisoners per 100 000 population in European countries (ranging from 60–70 per 100 000 population in Denmark, the Netherlands, Norway, Slovenia and Sweden to over 200 in the Czech Republic, Estonia, Latvia, Lithuania and Poland). This figure is lower than in some large countries, for example 620 in the Russian Federation and 740 in the United States (2).

Drug users, including problematic drug users,<sup>10</sup> often represent a large part of the prison population. Drug users may be reported among prisoners who are sentenced for a drug offence such as supply or use (although many of them are only drug traffickers), among prisoners sentenced for a crime committed to support their drug use and among people imprisoned for offences not related to drugs. The available data on drug use among prisoners usually reflect the whole prison population, without a breakdown by type of sentence.

Even though many drug users stop or reduce their use of drugs when they enter prison, some continue to use and some may even start to use drugs there (4–6).

At present, data on illicit drug use and its consequences among prisoners in Europe are limited, and there are significant national differences in data collection methods. This should be borne in mind when data are interpreted. Nevertheless, a general profile of drug users in European prisons can be drawn from the latest data reported in 2011 (referring to 2010) by European countries to the European Monitoring Centre for Drug and Drug Addiction (EMCDDA) (5,6).

## Drug use among the prison population

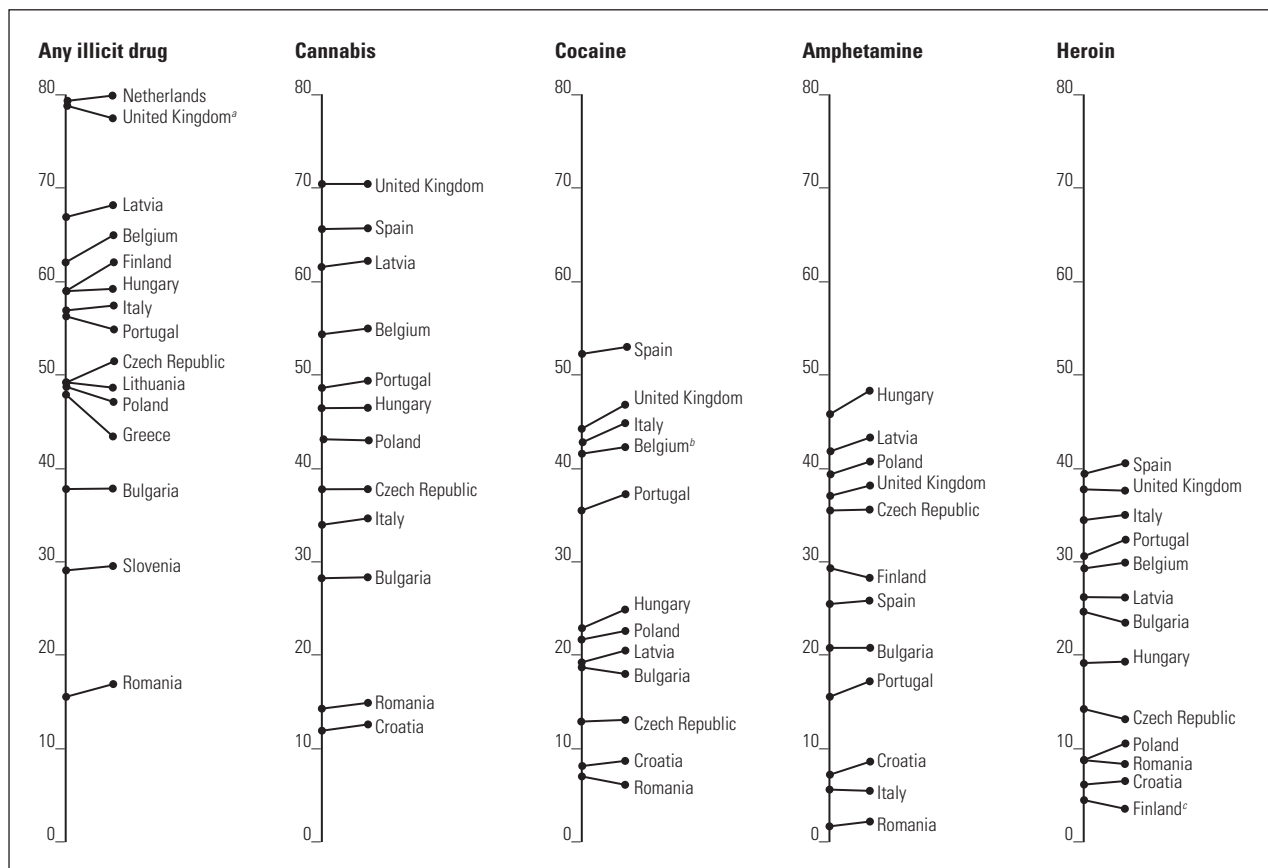
In Europe, data on past or current drug use among prisoners are scarce and mainly based on research studies and/or routine assessment at prison entry. The availability, methods of collection and quality of data vary greatly among countries. Data on drug use among prisoners are reported by the EU countries to the EMCDDA once a year. They refer to prisoners who have ever used illicit drugs in their lifetimes and to those who are currently using drugs while in prison, but not to the recent history of drug use (in the last year or last month). Furthermore, not all countries are able to provide these data, and the number of reporting countries varies according to the type of data and the year of reporting.

## Drug use and drug use patterns before imprisonment

The most recent available data from EU countries (mainly from 2010) show that a high percentage of prisoners have used illicit drugs at some point in their lives (Fig. 5) (7). Variations between countries appear to be important, but they may also reflect differences in data collection methods. Among 17 EU countries reporting data on drugs and prison since 2000, the proportion of prisoners who have ever used any drug ranges from 16% in Romania to 79% in the United Kingdom (England and Wales) and the Netherlands, with 9 countries reporting percentages higher than 50%.<sup>11</sup>

<sup>10</sup> The EMCDDA defines problem drug use as “injecting drug use or long-duration/regular use of opioids, cocaine and/or amphetamines” (3).

<sup>11</sup> These percentages mainly correspond to the prevalence levels of people who have ever used cannabis (the illicit substance most frequently used).

**Fig. 5. Lifetime prevalence of drug use among prisoners in European countries**

<sup>a</sup> Any of amphetamines, cannabis, crack, cocaine or heroin.

<sup>b</sup> Includes crack cocaine.

<sup>c</sup> Opioids.

Data refer to lifetime prevalence of use prior to imprisonment, with the exception of data for Belgium and Bulgaria, which refer to lifetime prevalence inside and outside prison. The prisoner sample in Finland was made up of convicts presenting for voluntary HIV testing. In the United Kingdom, the sample consisted of adults receiving sentences of between one month and four years. The studies were carried out in 2000 (Greece), 2001 (Finland), 2003 (Italy, Lithuania, Netherlands), 2005/6 (United Kingdom), 2006 (Romania, Spain), 2007 (Poland, Portugal), 2008 (Slovenia), 2009 (Hungary) and 2010 (Belgium, Bulgaria, Croatia, Czech Republic, Latvia).

Source: EMCDDA (7), based on data supplied by REITOX focal points.

The most common drugs ever used by prisoners are, in descending order, cannabis, cocaine, heroin and amphetamines, the same as in the general population even if the latter present a substantially lower prevalence for all those substances.

Cannabis has the highest prevalence of lifetime use among prisoners who have ever used any illicit drug (ranging from 12% to 70% of prisoners who have ever tried it). Cannabis is also the most ever-used substance in the general population, although the levels there are substantially lower (1.6% to 33% among the group aged 15–64 years). The prevalence of lifetime use of cocaine among prisoners who have ever used any illicit drug ranges from 6% in Romania to 53% in Spain (in the general population, the prevalence rates range from 0.3% in Malta to 10% in Spain); 7 out of 15 European countries where data were available report a lifetime prevalence of cocaine use of 20–50% of prisoners. Amphetamine experience among prisoners ranges from 1% to 45%, whereas among the

general population the range is from almost 0% to 12%. Lifetime prevalence of heroin use among the prisoners who have ever used any illicit drugs ranges from 8 to 39%, with 8 out of 13 countries that were able to provide information reporting levels in the range 15 to 39%. In the general population, lifetime prevalence of heroin use is below 1% in all countries. Equivalent data on lifetime use of other substances (such as volatile substances, hypnotics and sedatives) are hardly available in prison, or are only reported by a few countries. For many of those substances, prevalence rates among prisoners and among the general population are usually low.

Data on more problematic patterns of drug use among prisoners are limited. One international review of studies on prisoners found that 25–50% of people received into custody were clinically assessed as having serious drug problems (8), often including opioid dependence. Furthermore, a systematic review of 13 studies measuring the prevalence of drug and alcohol abuse and dependence

in male and female prisoners on reception into prison (n=7563) noted that 10–48% of men and 30–60% of women were abusing or dependent on illicit drugs on entry to prison (9,10). Although these data are mainly based on American research, European prisoners also often have histories of harmful patterns of drug use, including heroin injection and polydrug use.

Drug injection (mainly of heroin) is a particularly harmful way to use drugs, being associated with the spread of communicable diseases, especially when drug injectors share needles and/or other paraphernalia. Injecting use is also associated with a higher risk of overdose, resulting in significant mortality. Rates of ever-injecting drugs are substantially higher among prisoners than among the general population (on average, current injectors among the general population are estimated to be 0.3% of all adults). Based on available data, countries report that between 5% and 38% of prisoners admit that they have ever injected drugs prior to imprisonment (7).

### **Drug use and patterns of drug use in prison**

Even if most users reduce or stop consuming drugs when entering prison, it is recognized that illicit drugs find their way into prisons. Furthermore, prison may be a setting for initiation into drug use, initiation of the use of additional drugs or for switching from one substance to another, sometimes to more harmful patterns of drug use (11). The reasons for switching to a different drug may be related to a lack of the preferred substance inside prison, the choice of substances for which it is easier to avoid control, or other factors which are still unclear (9,12).

A Belgian study carried out in 2008 found that more than one third of drug-using prisoners had started to use a new additional drug during detention that they were not using before prison, with heroin most frequently mentioned (13).

Studies carried out in 15 EU countries since 2000 estimate that 2–56% of prisoners have ever used any type of drug while incarcerated, with 9 countries reporting levels in the range 20–40%. The drug most frequently used by prisoners is cannabis, followed by cocaine and heroin. The rates of prisoners who have ever used heroin while in prison vary between 1% and 21% of prisoners. The wide variation in prevalence rates between countries mainly reflects methodological limitations, which are particularly relevant when drug use prevalence is surveyed within prisons.

Some prisoners may have been drug injectors in the community and either continue to inject or start to inject drugs while in prison. In the EU (according to data reported since 2000), between 2% and 31% of

prisoners, depending on the country, are reported to have ever injected any drug while in prison, although data are limited to a few countries and methods for collecting data vary greatly between them (for example, through surveys or clinical assessments, self-reports or interviews). The findings of qualitative studies suggest that in prison settings the likelihood of injecting in order to maximize the effect of the substance could increase, owing to the scarcity of drugs. The scarcity of sterile equipment may lead to prisoners sharing syringes and other injecting paraphernalia (14).

### **The social characteristics of drug treatment clients in prison**

Information on the social characteristics of prisoners using drugs is scarce and come mainly from qualitative studies (15). In Europe, information on the characteristics of drug users in prison is reported through the national reports on the drug situation and the treatment demand indicator (16), which refers to people who enter drug treatment in specialized drug treatment centres, including treatment units in prison (4,5).

Eight European countries (France, Germany, Ireland, Luxembourg, Hungary, Romania, Slovakia, Sweden) reported data on people who entered drug treatment in prison in 2010 (n=5146 persons). In these countries, the social profile of drug clients entering treatment in prison, while generally similar to that of those entering treatment in the community, had some distinct characteristics.

In prison, about 90% were males compared to 80% in the community; they were slightly younger (29 years) than those in the community (30 years), and reported starting their drug use at an earlier age (18 years in prison compared to 21 years in the community).

The social conditions of drug clients before entering prison were generally poor. Many individuals had a low educational level, were unemployed before entering prison and/or were living in unstable accommodation. Despite differences in definitions of what constitutes an immigrant, the presence of immigrants among imprisoned drug users is high and seems to have increased in the last decade, although it is important to note that there is no scientific evidence to suggest that drug use is higher or lower among immigrants than in the general population. Finally, many prisoners who have used or are using drugs have a past history of violence, abuse and poverty (17–19).

### **Health problems**

#### **Communicable diseases**

Prisoners, including drug users, suffer from high levels of physical and psychiatric disorders, ranging from

communicable diseases (HIV, hepatitis B and C, TB) to psychiatric co-morbidity (antisocial and borderline personality disorder, depression, post-traumatic stress disorder, psychosis and alcohol dependence) (10,20,21).

European data on HIV infection among injecting drug users in prison are limited. The prevalence of infection does, however, vary and in some countries can be high among prisoners who have ever injected. In the eight countries providing communicable disease data to the EMCDDA (Bulgaria, Croatia, the Czech Republic, Finland, Hungary, Malta, Spain, Sweden), HIV prevalence among injecting drug users in prisons was mostly low to moderate (0–7.7%) in four countries, although Spain reported a prevalence of 39.7%. According to EMCDDA national reports, in countries with a high prevalence of HIV among injectors outside prison, HIV prevalence is also high among lifetime injectors in prison. Although no large differences can be observed in HIV prevalence between injecting drug users in prison and those in other settings, it should be noted that prisons may concentrate a high proportion of injectors and, therefore, the prevalence of HIV in the overall prison population can be much higher than in the general population (5,6,22).

Seven countries in Europe reported data on HCV antibody prevalence among injecting drug users in prison, with a range of 11.5% (Hungary) to 90.7% (Luxembourg). In the Czech Republic, Luxembourg and Malta, HCV appears to be somewhat more prevalent among injectors tested in prison compared to those tested in other settings.

### **Psychiatric co-morbidity**

Prisoners with a history of drug use often have multiple and complex mental illnesses. Differences in psychiatric morbidity between the prison population and the general population are demonstrated by several studies, with prisoners more often presenting a problematic mental health profile. This involves both severe pathologies, such as psychosis and personality disorders (especially antisocial and borderline disorders), and other problems such as anxiety and depression. A systematic review of 62 surveys covering about 23 000 prisoners from 12 countries worldwide showed that up to 65% of prisoners have a mental health disorder, ranging from personality disorder (42–65%, mostly antisocial disorder) to major depression (10–12%) to psychotic illnesses (4%, including schizophrenia, schizophreniform disorder, manic episodes and delusional disorder) (23). Those disorders represent a serious risk factor for suicide, which is the leading cause of death among prisoners (23). Studies from European countries, including France, Spain and the United Kingdom, support those results (24). Particular attention has been drawn to personality

disorders, which are often associated with problem drug use (25). In a French study, the most common problems among prisoners with a diagnosis of psychiatric co-morbidity were depressive syndromes (40%), generalized anxiety (33%), traumatic neuroses (20%), agoraphobia (17%), schizophrenia (7%), and paranoia or chronic hallucinatory psychoses (7%) (26).

### **Mortality among prisoners using drugs**

Mortality among prisoners in general (both drug users and non-drug users) is high, with suicide accounting for about half of all prison deaths. Recent cohort studies in Europe report that suicide accounts for 10–20% of deaths among problem drug users in the community (10).

Increased mortality from all causes, and particularly from drug overdoses on release, has been documented in many countries (27). Prisoners should receive particular attention during the period following release because of their extreme vulnerability on return to the community. This is when there is a very high risk of overdose, frequently due to their relapse into heroin use and reduced tolerance to opioids (28). A review of drug-related deaths soon after release from prison in Australia, Europe and the United States showed that 6 out of 10 deaths in the first 12 weeks after release were drug-related. The authors concluded that there is an increased risk of drug-related death during the first two weeks after release from prison and that the risk remains elevated up to at least the fourth week (29). A study in the United Kingdom (England and Wales) also showed that 6 out of 10 deaths were drug-related and that the risk of death was strikingly acute in the first and second weeks following release from prison (30). Male prisoners were 29 times more likely to die and female prisoners were 69 times more likely to die compared to the general population during the week following their release (30). In Ireland, an investigation of deaths among drug users following release from prison between 1998 and 2005 showed a considerable risk of death at the time of release: of 105 deaths observed after release from prison, 28% occurred within the first week of release and a further 18% in the first month (31).

### **Methodological limitations**

The data presented in this chapter have several methodological limitations, partly related to the subject (drug use) and the setting (prison) of the analysis, and partly to the lack of European harmonization. Clustering, self-selection and self-reporting biases particularly affect data collection and research in prison settings. Validity biases are particularly evident due to the sensitivity of the topic studied (drug use) (32).

Methodological differences between European countries and between individual prisons are wide. Data may be collected through ad hoc studies or routine monitoring systems or both. Coverage and sampling may vary considerably between studies. Representativeness of the sample is an issue, since studies may refer to different types of prison population (for example, only convicted prisoners or also prisoners on remand) or to different types of prison (for example, prisons for young people, or for women or for all adults). Variables and time windows included in the studies (such as type of drug or reference time for using the drug) may also vary between countries. Finally, the routine reporting and the studies may be conducted between different time periods and dates.

This lack of common standards and of a consensus on data collection methods on drug use at European level limits the comparability and harmonization of data. If health consequences are to be monitored to provide support and evidence for policy, there is a need to develop a rationalized and more standardized approach at European level to the collection of data on drugs and prison (33).

## References

- Møller L et al., eds. *Health in prisons: a WHO guide to the essentials of prison health*. Copenhagen, WHO Regional Office for Europe, 2007 ([http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0009/99018/E90174.pdf](http://www.euro.who.int/__data/assets/pdf_file/0009/99018/E90174.pdf), accessed 6 November 2013).
- Aebi M, Del Grande N. *Council of Europe annual penal statistics. SPACE I. Survey 2009*. Strasbourg, Council of Europe, 2009 ([http://www.coe.int/t/dghl/standardsetting/cdpc/bureau%20documents/PC-CP\(2011\)3%20E%20-%20SPACE%20I%202009.pdf](http://www.coe.int/t/dghl/standardsetting/cdpc/bureau%20documents/PC-CP(2011)3%20E%20-%20SPACE%20I%202009.pdf), accessed 28 November 2013).
- Problem drug use (PDU) [web site]. Lisbon, European Monitoring Centre for Drugs and Drug Addiction, 2013 (<http://www.emcdda.europa.eu/themes/key-indicators/pdu>, accessed 29 November 2013).
- Lukasiewicz M et al. Prevalence and factors associated with alcohol and drug-related disorders in prison: a French national study. *Substance Abuse Treatment, Prevention, and Policy*, 2007, 2:1 (<http://www.substanceabusepolicy.com/content/2/1/1>, accessed 28 November 2013).
- REITOX network [web site]. Lisbon, European Monitoring Centre for Drugs and Drug Addiction, 2013 (<http://www.emcdda.europa.eu/about/partners/reitox-network>, accessed 29 November 2013).
- Data: statistical bulletin 2011 [web site]. Lisbon, European Monitoring Centre for Drugs and Drug Addiction, 2012 (<http://www.emcdda.europa.eu/stats11>, accessed 29 November 2013).
- European Monitoring Centre for Drugs and Drug Addiction. *Prisons and drugs in Europe: the problem and responses*. Luxembourg, Publications Office of the European Union, 2012 (<http://www.emcdda.europa.eu/publications/selected-issues/prison>, accessed 29 November 2013).
- Oliemeulen L et al. *Problematische alcoholgebruikers, druggebruikers, en gokkers in het gevangeniswezen [Problematic alcohol users, drug users and gamblers in prison]*. Rotterdam, Ministry of Justice, Research and Documentation Centre, 2007.
- Fazel S, Bains P, Doll H. Substance misuse and dependence in prisoners: a systematic review. *Addiction*, 2006, 101(2):181–191.
- Fazel S, Baillargeon J. The health of prisoners. *The Lancet*, 2011, 377:956–965.
- Niveau G, Ritter C. Route of administration of illicit drugs among remand prison entrants. *European Addiction Research*, 2008, 14(2):92–98.
- Stover H, Weilandt C. Drug use and drug services in prison. In: Møller L et al., eds. *Health in prisons: a WHO guide to the essentials of prison health*. Copenhagen, WHO Regional Office for Europe, 2007:85–111 ([http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0009/99018/E90174.pdf](http://www.euro.who.int/__data/assets/pdf_file/0009/99018/E90174.pdf), accessed 6 November 2013).
- Todts S et al. *Usage de drogue dans les prisons belges. Monitoring des risques sanitaires*. Brussels, Service Public Fédéral Justice, 2008.
- Pēna-Orellana M et al. Prevalence of HCV risk behaviors among prison inmates: tattooing and injection drug use. *Journal of Health Care for the Poor and Underserved*, 2011, 22:962–982.
- Vandam L. Patterns of drug use before, during and after detention: a review of epidemiological literature. In: Cools M et al., eds. *Contemporary issues in the empirical study of crime*. Antwerp, Maklu, 2009.
- European Monitoring Centre for Drugs and Drug Addiction. *Treatment demand indicator (TDI) standard protocol 3.0: guidelines for reporting data in people entering drug treatment in European countries*. Luxembourg, Publications Office of the European Union, 2012 ([http://www.emcdda.europa.eu/attachements.cfm/att\\_188852\\_EN EMCDDA-TDI-Protocol-3.0.pdf](http://www.emcdda.europa.eu/attachements.cfm/att_188852_EN EMCDDA-TDI-Protocol-3.0.pdf), accessed 29 November 2013).
- Ronco D, Scandurra A, Torrente G. *Le prigionieri malate. Ottavo rapporto di Antigone sulle condizioni di detenzione in Italia [The prisons are ill. Antigone's eighth report on the conditions of detention in Italy]*. Rome, Edizioni dell'Asino, 2011.
- Sheikh A. Why are ethnic minorities underrepresented in US research studies? *Plos Medicine*, 2006, 3(2):166–167.
- Wendler D et al. Are racial and ethnic minorities less willing to participate in health research? *Plos Medicine*, 2006, 3(9):201–210.

20. Friestad C, Kjelsberg E. Drug use and mental health problems among prison inmates – results from a nation-wide prison population study. *Nordic Journal of Psychiatry*, 2009, 63(3):237–245.
21. *Implementing the Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia: 2010 progress report*. Stockholm, European Centre for Disease Prevention and Control, 2010 ([http://www.ecdc.europa.eu/en/publications/publications/1009\\_spr\\_dublin\\_declaration\\_progress\\_report.pdf](http://www.ecdc.europa.eu/en/publications/publications/1009_spr_dublin_declaration_progress_report.pdf), accessed 29 November 2013).
22. European Monitoring Centre for Drugs and Drug Addiction. *Trends in injecting drug use in Europe*. Luxembourg, Publications Office of the European Union, 2010 ([http://www.emcdda.europa.eu/attachements.cfm/att\\_108590\\_EN EMCDDA\\_SI10\\_injecting.pdf](http://www.emcdda.europa.eu/attachements.cfm/att_108590_EN EMCDDA_SI10_injecting.pdf), accessed 29 November 2013).
23. Fazel S, Danesh J. Serious mental disorder in 23 000 prisoners: a systematic review of 62 surveys. *The Lancet*, 2002, 359:545–550.
24. Birchard K. Europe-wide survey finds widespread drug abuse in prisons. *The Lancet*, 2001, 358(9284):821.
25. Arroyo JM, Ortega E. Personality disorders among inmates as a distorting factor in the prison social climate. *Revista española de sanidad penitenciaria [Spanish Journal of Prison Health]*, 2009, 11:11–15.
26. Rouillon F et al. *Etude épidémiologique sur la santé mentale des personnes détenues en prison*. Paris, Institut national de la santé et de la recherche médicale, 2007.
27. Zlodre J, Fazel S. All-cause and external mortality in released prisoners: systematic review and meta-analysis. *American Journal of Public Health*, 2012, 102(12):e67–e75.
28. European Monitoring Centre for Drugs and Drug Addiction. *Mortality related to drug use in Europe: public health implications*. Luxembourg, Publications Office of the European Union, 2011 ([http://www.emcdda.europa.eu/attachements.cfm/att\\_143663\\_EN\\_TDS111003ENC\\_web.pdf](http://www.emcdda.europa.eu/attachements.cfm/att_143663_EN_TDS111003ENC_web.pdf), accessed 29 November 2013).
29. Merrall EL et al. Meta-analysis of drug-related deaths soon after release from prison. *Addiction*, 2010, 105(9):1545–1554.
30. Farrel M, Marsden J. Acute risk of drug-related death among newly released prisoners in England and Wales. *Addiction*, 2007, 103:251–255.
31. Lyons S et al. Drug-related deaths among recently released prisoners in Ireland, 1998 to 2005. *International Journal of Prisoner Health*, 2010, 6(1):26–32.
32. Carpentier C, Royuela LNA, Hedrich D. Ten years of monitoring illicit drug use in prison populations in Europe – issues and challenges. *The Howard Journal of Criminal Justice*, 2011, 51(1):37–66.
33. *EMCDDA contribution towards a methodological framework for monitoring drugs and prison in Europe. Developing indicators to monitor drug use, drug-related health problems and drug services in European prisons*. Brussels, Council of the European Union, 2013 (5420/1/13 REV 1) ([http://www.emcdda.europa.eu/attachements.cfm/att\\_194698\\_EN\\_ST05420-RE01.EN13.PDF](http://www.emcdda.europa.eu/attachements.cfm/att_194698_EN_ST05420-RE01.EN13.PDF), accessed 29 November 2013).