



European Monitoring Centre  
for Drugs and Drug Addiction

**EMCDDA Meeting on the Key Indicator  
Drug-related Deaths and Mortality among drug users**

**15 October 2014 - Lisbon**

**Compilation of National Abstracts**

**Recent developments concerning the Key Indicator in the Member States,  
Candidate Countries and Norway**

## Recent developments concerning the DRD Key Indicator in Belgium

### 1. Brief overall situation on DRD

- Overdoses

In Belgium, national data on drug-induced deaths are available from the General Mortality Register (GMR). Since 1991, the FPS Economy – Directorate-general Statistics and Economic Information, centralizes the data from the death certificates coded by the Flemish and French Communities according to the International Classification of Diseases, Injuries and Causes of Death (ICD). The 9<sup>th</sup> edition (ICD-9) was used until 1997. From 1998 onwards, the 10<sup>th</sup> edition (ICD-10) was used. The mortality information is registered on the basis of residency (de jure information) as opposed to the region where the death occurred (de facto information). The latest national data currently available are from 2003 and 2010. For 2010, 49, 24 and 14 drug-induced deaths (Selection B) were observed within the Flemish, Brussels Capital and Walloon region, respectively. For 2003, the respectively numbers were 43, 24 and 30.

### 2. 2014 analysis (what is new since the 2013 national report?)

- There are no methodological changes in the 2014 report compared to the 2013 report.
- The Selection B is a very strict selection, and we observe, since 2006, less F-codes in favour of the X and Y codes. However, in case of X and Y codes, an additional demand is the combination of the X and Y codes with the T400-409 codes. But on the field, the medical doctors rarely mention a T400-T409 code in case of X and Y codes. This raises the question to which extent the decrease in drug-related deaths in 2010 is a real decrease, or rather a reflection of the coding practices in the field in relation to the strict selection B.

### 3. Emerging concerns

New psychoactive substances are a growing concern with regard to drug related deaths. In 2012 and 2013, several deaths occurred in Belgium after the consumption of amphetamine, contaminated with a NPS, in this case 4-methylamphetamine. A death has also occurred after the consumption of an ecstasy tablet contaminated with PMA and PMMA. Also in 2013, a suspicious death occurred where the drug 25I-NBOMe was detected. Contrary to the well-known 'classical' drugs, the problems with these NPS is that no information is available with regard to toxicity, or treatment in case of overdose. This is a major concern, also in Belgium. On top of that, detection of these NPS is difficult, so the possibility exists that NPS were involved in additional deaths, but that these remained undetected; as a result, this could underestimate the number of deaths where NPS were involved.

### 4. Your 2014 presentations or sessions

Because the new expert recently started, we prefer not to contribute with any presentations or sessions.

## Recent developments concerning the DRD Key Indicator in Bulgaria

### 1. Brief overall situation on DRD

- Overdoses

In Bulgaria GMR is National Statistical Institute (NSI).

The total number of deaths from causes related to drug use in 2013 is 21, or 0.29 per 100 000 population. Significant difference in deaths by sex. In 2013, the dead men as a result of drug use are 18 or 85.7% of all deaths from these causes. The mortality rates by gender were respectively 0.51 per 100 000 males and 0.08 per 100 000 women. The largest number of deaths related to drug use in the age group 30-34 years - 8 people. The majority (90%) of all deaths in young ages - from 20 to 39 years. **In 2013 not a single case of death from intentional self-poisoning by and exposure to antiepileptic, sedative, hypnotics, antiparkinsonian and psychotropic drugs, not elsewhere classified (H61) Intentional self and influence of drugs and psychodysleptics [hallucinogens], not elsewhere classified (H62) and Accidental poisoning by and exposure to antiepileptic, sedative, hypnotics, antiparkinsonian and psychotropic drugs, not elsewhere classified (H41). The reason is the changed national definition and implementation of internationally comparable definition of the EMCDDA, selection B.**

Two more sources of information have been used as an alternative source of DRD data for 2013 – (1) the Forensic Medicine and Deontology Centers (FMDC) in Sofia (Aleksandrovska Hospital) and other cities and (2) the Ministry of Interior (MI). The FMDCs have provided data for deaths when autopsy has been done and any drug use has been detected. The data has been classified by gender, age, type and quantity of the detected substances as well as organs where they were detected. Date of death, the cause and the place of deaths have been indicated as well. 42 deaths caused by drug poisoning during 2013 are reported by the FMDCs, only for Sofia. The average age is around 33. The Ministry of Interior has provided annual DRD data about all the country for 2013 summarized by the administrative regions. Data is classified by gender and by age (in 3 groups – under 18; 18 – 30; above 30). However the data does not include the death causes.

Summarized data for drug related deaths will be available in the Annual Report 2014 of NFP and respective Standard Tables.

- Mortality among drug users (cohorts set up, findings, problems...)

Results of mortality data analysis based on a retrospective national mortality study of the treatment demand cohort for 10-year period are available. Mortality Rate and Standardized Mortality Ratio estimates are calculated and presented in the Standard Table 18 through the National Annual Report 2010.

### 2. 2014 analysis (what is new since the 2013 national report?)

- 2013 it's the first year of implementation of the EMCDDA definition in combination with T-codes and using a 4-digit code according to ICD-10 causes of death in the structure of deaths by causes changes occur. The trend with the largest share are deaths from accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified (H42), but in 2013 these reasons are due 81% of deaths due to drug use. Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undetermined intent (Y12) and two reasons in Class V of ICD-10, "Mental and behavioral disorders" are the cause of death in 9.5% of cases of deaths
- In 2013 are registered deaths in 15 treatment programs with agonists and agonist- antagonists, such (the total number is 31 people) According to the reasons, largest number of deaths due to health complications. The reports of the programs, reflect for 3 patients - died from an overdose.

### 3. Emerging concerns

The average age of deaths from causes related to drug use in 2013 was 32.4, down compared to 2012. It is higher for men - 33.1, and for women it is 28.3 years. Analyzing the data, however, the small number of cases, particularly in relation to the women should be notified and taken into account.

## Recent developments concerning the DRD Key Indicator in Croatia

### 1. Brief overall situation on DRD

- Overdoses
  - In Croatia there are two sources of data on the number of drug-related deaths (DRD). The first one being the General Mortality Registry (GMR) based on DCs, and the second one the Treated Drug Addicts Registry, which among other things monitors causes of death among drug addicts. Successful cooperation between these two registries has made it possible to upgrade data quality.
  - This report has used data from the GMR, applying the “Selection B” protocol for drafting standard ST5 and ST6 tables.
  - In 2013, 48 persons died as a direct result of drug abuse (DRD), which is the same number like previous year. 42 deceased persons were men (87,5%) and 6 women (12,5%). Average age of the deceased was 37.4, for men 38 and 34 for women. The decreasing trend in the number of DRDs continued in 2013. According to the results of autopsy reports for 2013, opiates are still the predominant type of drug (84%).
- Mortality among drug users
  - The Treated Drug Addicts Registry analyzes causes of death among drug addicts.

### 2. 2014 analysis (what is new since the 2013 national report?)

No changes since last year.

### 3. Emerging concerns

We do not have new concerns

### 4. Your 2014 presentations

- **Title:** Overview of DRD and deaths among drug addicts in Croatia

## Recent developments concerning the DRD Key Indicator in Cyprus

### 1. Brief overall situation on DRD

- Overdoses

Although the number of overdoses remains low (under 10), recently there have been deaths related to oxycodone. Fewer (although very small numbers) heroin overdoses.

- Mortality among drug users

There are no studies on mortality

### 2. 2014 analysis (what is new since the 2013 national report?)

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### 3. Emerging concerns

- Oxycodone overdoses

## Recent developments concerning the DRD Key Indicator in the Czech Republic

### 1. Brief overall situation on DRD

- Overdoses

Stable situation. Up to 50 cases annually - one third opiates, one third meth, one third volatile substances. One year delay in reporting from SMR. SMR and GMR: convergency of total cases of fatal overdoses.

- Mortality among drug users

No new study available.

### 2. 2014 analysis (what is new since the 2013 national report?)

See above

### 3. Emerging concerns

Potentially new synthetic opioids. But up to now just potentially.

### 4. Your 2014 presentations or sessions

#### Mortality of drug users in central Asia

An analysis of the mortality of drug users was performed in Central Asia in 2011-2012, the results for Kazakhstan and Uzbekistan are presented in detail due to problems with data validity. Indirect standardisation of crude mortality rates and construction of standardised mortality ratio (SMR) comparing observed number of deaths with expected number of deaths according to age and gender specific mortality rates in the general population of the same country was performed. A system of registration of all users of illegal drugs known to the health and/or law enforcement authorities ("narcological registers") was used. The results show excess mortality in registered drug users, particularly in registered females. The excess mortality was highest among young adults (18–34) in all the studies. Taking into account the limited quality and reliability of the data, the crude mortality rate among registered drug users was quite high when compared to EU countries. The SMR in total was comparably lower as a result of the high background mortality in the general population. High mortality of females desires targeted programmes.

#### Mortality of problem gamblers in th Czech Republic

Retrospective database-linkage mortality study of hospitalised problem gamblers in the Czech republic in 1994-2011 was performed. Indirect standardisation and SMR was computed comparing age and gender specific mortality with that of general population in the Czech Republic. Excess mortality in problem gamblers wa found - SMR was approx. 2 over the years, with the structure similar to that in general population except higher proportion of external causes of deaths, particularly intentional self-harm (suicides).

## Recent developments concerning the DRD Key Indicator in Estonia

### 1. Brief overall situation on DRD

- Overdoses

The total number of drug-related death declined in 2013 to 111 from 170 in 2012. Toxicology pattern has not changed, 96 cases involved fentanyl. Other substances causing overdose were methadone, morphine, cocaine.

### 2. 2014 analysis (what is new since the 2013 national report?)

Decline in absolute number of overdoses may be due to decline of IDU population suggested by recent studies or harm reduction measures, including distribution of naloxone started in september 2013.

### 3. Emerging concerns

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### 4. Your 2014 presentations or sessions

Drug Overdose Mortality in Estonia, Gleb Denissov.

Estonian DRD rate per population used to be the highest in Europe. This is due to widespread use of fentanyl and 3-methyl-fentanyl. These substances are not new, however only in Estonia drug users swithed to them from other opiates. Recent decline in DRD numbers may be due to decline in IDU population or efficient harm reduction policies, toxicology pattern has not changed.

## Recent developments concerning the DRD Key Indicator in Finland

### 1. Brief overall situation on DRD

- Overdoses

Opioids continue to be the most important group in fatal poisonings, especially buprenorphine and tramadol.

- Mortality among drug users

Number of drug findings related to drug abuse in medico-legal autopsy cases in Finland. The cause of death can be also other than poisoning.

	2006	2007	2008	2009	2010	2011	2012
Heroin	2	1	3	3	2	1	3
Buprenorphine	88	97	104	111	156	150	129
Cannabis	99	94	93	119	116	124	141
Amphetamines	64	94	73	94	113	93	114
Methadone	21	26	33	34	34	27	21
Cocaine	1	3	3	4	4	2	5
GHB	6	2	1	11	3	11	20
Total	191	234	248	256	304	288	309

### 2. 2014 analysis (what is new since the 2013 national report?)

- Prescription opioids are even more important in DRDs
- New abused substances: pregabalin, gabapentin, bupropion
- Off-label prescription (insomnia, anxiety) of quetiapine for drug addicts is increasing

### 3. Emerging concerns

New psychoactive substances in DRD cases, especially alpha-PVP

### 4. Your 2014 presentations or sessions

Role of pregabalin and gabapentin in opioid overdose deaths



## Recent developments concerning the DRD Key Indicator in France

### New information

#### 1. Brief overall situation on DRD

According to the available official data, DRDs peaked in 1994 and experienced a sharp drop connected with the spread of opioid substitution treatment. However, a new upward trend was detected *in 2003 and continued until 2008. Between 2008 and 2010, DRDs plateaued. In 2011, the number of overdose deaths decreased significantly (GMR). The interpretation of these data must remain cautious. Indeed, changes in the rules of coding intervened in 2011: the codes F10.0 to F19.0 (only .0 corresponding in acute poisoning) cannot be any more used in initial cause and are replaced by X41, X42, X61 according to the product and the context. Accordingly, the deaths by overdose of methadone or buprenorphin (coded F11.0 until now) are coded from now on X42.*

- Overdoses

The lack of adequate detailed information on substances stipulated in the death certificates remains a major barrier to a better understanding of this on-going process, supporting the use of special registry (forensic laboratories). *This special registry showed that methadone was involved for 45% of death from overdose in 2012, BHD for 15% whereas heroin was involved for 15% and cocaine 12%. It should however be kept in mind that this registry does not include all forensic laboratories and that in France toxicological analysis are not carried for all cases of overdose death.*

- Mortality among drug users

*Following the EMCDDA's recommendations, a prospective cohort study, based on treatment centres and a few harm reduction facilities, was launched in December 2009. Inclusion was very difficult due to the non anonymous inclusion collection. We faced the reluctance of professionals and drug users mainly in the low threshold centres. Over 550 centres (135 low threshold centres, 420 treatment centres), 53 voluntarily participated. 1000 individuals were included during the first draft which ended in June 2010. A second draft included 186 individuals in 2011. Subjects will be followed-up to up to 5 years. The first point to find the vital status and cause of death, as applicable was held in July 2013, the second will take place in 2015. Between 09/2009 and 12/2011, 1134 individuals included.*

*970 vital status found (ie 86 %) : 77 % are male – 23 % are female.*

*37 deaths had occurred in 07/2013*

*Causes of death were indicated for 17 individuals (8 deaths in 2010, 11 deaths in 2011) : underlying causes of death are : 2 drug intoxications (X44.9), 1 addiction F19-2, 1 road accident (V89), 2 lung cancers (C34), 2 gastrointestinal bleeding, 1 liver cancer, 1 asthma, 1 alcoholic coma, 2 sudden deaths and 4 unknown causes (R99). If the share of deaths mentioning an unknown cause is confirmed when we will recover all the data, there will be difficulties in interpreting causes of death. However, we could made hypothesis that the unknown causes are suicide or overdose.*

*Person years follow-up are 2 949. Crude mortality rate among females is 16.7 person years, CMR among males is 11.3. Total CMR is 12.5. SMR among females is 20.82 with wide 95% CI between 10.4 and 37.3. SMR among males is 5.2 with 95% CI between 3.4 and 7.7. In a cohort of individuals arrested for drug use between 1992-2001 in France, SMR among males was similar (SMR was 5.2 with 95% CI between 4.9 and 5.5). SMR among females was lower (SMR is 9.5 with 95% CI between 8.0 and 11.3), but the CIs overlapped and it can not be concluded that there is a statistically significant difference.*

*One limitation is the lack of knowledge of the substances consumed at death*

#### 2. 2014 analysis (what is new since the 2013 national report?)

*In 2011 the figure of overall DRDs provided by the general mortality registry showed a fall – primarily connected with the decrease in the coded F19 cases (Mental and behavioural disorders due to multiple drug use and use of other psychoactive substances). In a more detailed analysis, with restricted drug-users' age ranges (i.e. 15-49 year old), this decrease is still apparent.*

Opioid substitution treatment, in particular methadone is responsible for a greater share of death from overdose compared to the previous years (data from SR).

#### 3. Emerging concerns

*Consideration of deaths due to cardiovascular and cerebrovascular accidents after cannabis use (data from SR).*

## Recent developments concerning the DRD Key Indicator in Germany

### 1. Brief overall situation on DRD

- Overdoses
  - Basing on national definition (special register), the number of direct DRD has increased in 2013 as compared with the previous year (+6%) for the first time since 2009. (2012: n= 944; 2013: n=1002)
  - 83% are male, slight decrease of proportion of males since some years but no accelerating new gender trend apparent.
  - No relevant change in mean age, since during the last 15 years the mean age increased on average by 6 months per year
  - - Slight increase of metamphetamine- related deaths from N= 7/9 (monovalent/ polyvalent without opioid use) in 2012 to N= 10/8 in 2013; single cases of deaths due to new synthetic drugs (monovalent n=3, polyvalent without opioid use n=2)
  - Stability in monovalent opioid overdose (+0,4%) and cocaine- associated poisonings, apparent rise in polyvalent overdose (+12,3%)
  - Decrease in monovalent methadone overdose (-46% from n=37 to n=20); increase in polyvalent methadone overdose (+7,5% from n=146 to n=157)
  - Fentanyl- related overdose decreased significantly.
- Mortality among drug users

No new data since PREMOS study published in 2011

### 2. 2014 analysis (what is new since the 2013 national report?)

For 2014 there is no apparent new DRD trend so far detectable from some regional data.

### 3. Emerging concerns

Potential undetected number of DRD due to synthetic substances.  
Crystal meth abuse in Germany

### 4. Your 2014 presentations or sessions

Intravenous methadone application as a serious risk factor for an overdose death: methadone-related fatalities in Hamburg from 2007 to 2012

Methadone plays a continuous role in drug-related deaths in Hamburg. To find out whether intravenous application of methadone plays a relevant role in methadone-related deaths, body fluids of all methadone-positive cases (n=130) and three buprenorphine-positive cases where a urine sample was available (n=58+3) were investigated for disaccharides (sucrose and lactose as markers for intravenous methadone abuse). Sixty-four percent of the urine samples of the methadone cases showed positive results for disaccharides. The three buprenorphine cases showed positive results for lactose in urine. In blood, it was not possible to detect any disaccharides. Of the 116 fatal methadone intoxications, 49 % were under opiate maintenance treatment (OMT) at the point of death (A-OMT), 30 % were never in OMT (N-OMT) and 21 % were formerly in an OMT, but not at the point of death (F-OMT). Of the deceased in the OMT group, 12 % (n=7) died within the first 2 weeks of treatment, six of them within the first week. Overall, intravenous abuse of methadone plays a relevant role in methadone-related fatal cases of substituted patients and of drug consumers not in therapy.

## Recent developments concerning the DRD Key Indicator in Hungary

### 1. Brief overall situation on DRD

- Overdoses

Heroin overdoses disappeared since 2010 as heroin is not available, paralelly there is a minor increase in the number of overdoses where methadone is included. Mostly polidrug pattern can be seen including rivotril and alcohol.

As NPS injecting is on the rise, fatal overdoses where NPSs (eg. 5-IT, 4'4-DMAR,) are included are of high concern.

- Mortality among drug users

No data available.

### 2. 2014 analysis (what is new since the 2013 national report?)

Several fatal intoxications happened in 2013 and in 2014 due to NPS use.

### 3. Emerging concerns

NPS toxicological data and pathological data are still limited. Laboratories face difficulties when analysing these substances in biological samples. Synthetic cannabinoids led to numerous non-fatal intoxications and were involved in death cases as well, however, little is known about their role.

## Recent developments concerning the DRD Key Indicator in Ireland

### 1. Brief overall situation on DRD

- Overdoses

The National Drug-Related Deaths Index (NDRDI) in Ireland provides all data on drug-induced deaths (DRD) and mortality among drug-users in Ireland.

Data shows a decrease of 22% on DRD reported in 2012 compared to 2011, however the main drugs involved remain the same. The percentage of these deaths that involved polysubstances has increased slightly.

### 2. 2014 analysis (what is new since the 2013 national report?)

- Heroin related deaths continue to decrease since 2009
- Methadone related deaths are the main cause of DRD in Ireland
- Cocaine related deaths remain stable however the increase in MDMA related deaths seen in 2011 data is maintained

### 3. Emerging concerns

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### 4. Your 2014 presentations or sessions

- **Presentation 1**

Title: Benzodiazepine related deaths in Ireland.

Between 2002 and 2012, there were 1051 poisoning deaths recorded in the National Drug-Related Deaths Index (NDRDI) where a benzodiazepine was implicated either alone or with another drug or substance. This represents 30% of individual poisoning deaths during that period. The vast majority (98.5%) involved polysubstances. Of those deaths where benzodiazepines were implicated, 75% (n = 790) had only one benzodiazepine type implicated, 22% had two types implicated and the remainder three or four. Diazepam was the benzodiazepine most frequently implicated in poisoning deaths, followed by flurazepam. The main drugs involved along with benzodiazepines in polysubstances poisonings included; Alcohol 40% (n = 414), methadone 38% (n = 397), antidepressants 30.5% (n = 316) and heroin 26% (n = 271). The majority were male 69.4% (n = 729). Over one third 34.8% (n = 366) were aged between 25 and 34 years of age. There were higher proportions of females in the older age groups and higher proportions of males in the younger age groups.

- **Presentation 2**

Title: Methadone related deaths in Ireland.

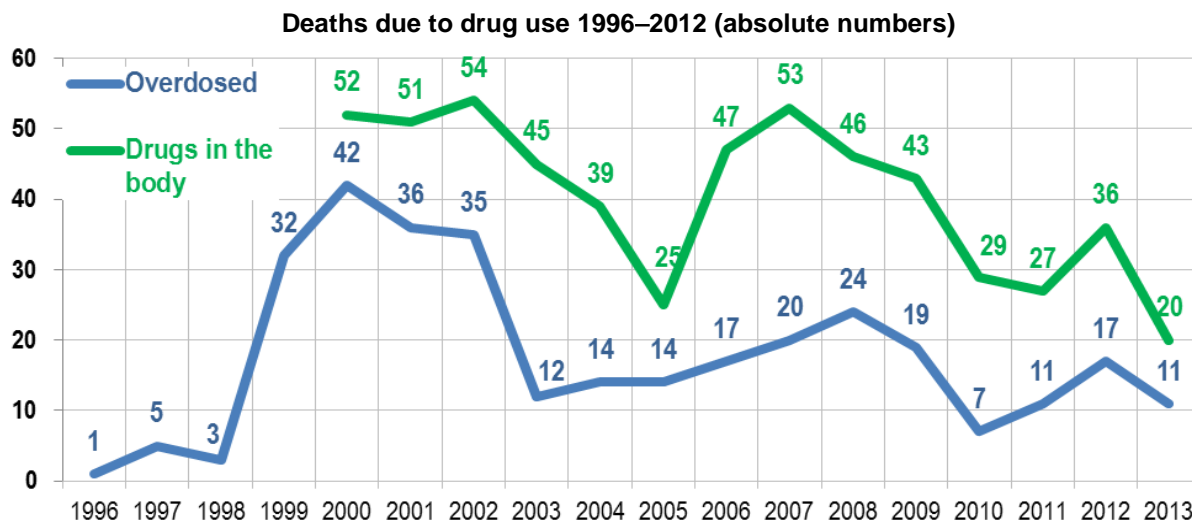
The percentage of methadone related deaths has risen sharply from 15% of all NDRDI poisoning deaths in 2004 to 30.4% in 2011 with a decrease to 24.6% in 2012. The majority 80.3% (n = 552) involve polysubstance poisonings. Benzodiazepines are the most common drug group implicated with methadone in methadone polysubstance deaths. Of all methadone related deaths in the period 2004 to 2012, 62% were with someone at the time of death.

## Recent developments concerning the DRD Key Indicator in Latvia

### 1. Brief overall situation on DRD

- Overdoses

According to the EMCDDA Selection B 11 deaths were recorded in 2013 (17 in 2012, 11 in 2011, 7 in 2010, 19 in 2009). Out of all deaths in 2013, one was woman and ten were men. According to the State Centre for Forensic Medical Examination there were cases when the cause of death was not related to overdose, however, drugs were discovered in the biological environments of the deceased. In 2012 in addition to overdose cases there were 17 cases when narcotic substances were found in the biological environments of the deceased; in 2013 there were 12 such cases.



Source: The Centre for Disease Prevention and Control of Latvia, 2013; State Centre for Forensic Medical Examination, 2013

The average age of deceased females was 34 years while the average age of deceased males — 31 year (Selection B). The overall mean age of persons deceased due drug overdose was 31 year. The youngest recorded deceased was aged 23, while the oldest was aged 40. Out of all cases accidental poisoning (X41 and X42) was recorded in nine cases, while in two cases the intention of the person is unknown (Y11 and Y12). Substances related with poisonings are following - [T40.6](#) Poisoning by, adverse effect of and underdosing of other and unspecified narcotics (in six cases), [T40.1](#) Poisoning by and adverse effect of heroin (in two cases), [T40.2](#) Poisoning by, adverse effect of and underdosing of other opioids (in one case), [T40.9](#) Poisoning by, adverse effect of and underdosing of other and unspecified psychodysleptics [hallucinogens] (in one case) and [T43.6](#) Poisoning by, adverse effect of and underdosing of psychostimulants (in one case).

As stated in National reports there are two major sources for DRD data collection in Latvia: 1) General Mortality Register (GMR) held at the Centre for Disease Prevention and Control of Latvia, 2) Special Register held at the State Centre for Forensic Medical Examination. On annual basis the two institutions compare their database and check for inconsistencies.

- Mortality among drug users

There has been conducted a study in 2013, where 1 709 (8,085.1 person-years) registered primary amphetamine users (users registered from 2000 to 2012) were analyzed. Data suggests that amphetamine users have a higher mortality rate than observed in the general population. There were observed 61 deaths among 1 709 amphetamine users (or 3.6%). Observed mortality rate (CMR - crude Mortality rate) was 7.6 per 1,000 person-years (8.2 per 1000 PY among men and 5.4 per 1,000 women). In comparison with general population mortality rate among women and men was 8.1 times and 2.9 times higher accordingly.

## **2. 2014 analysis (what is new since the 2013 national report?)**

Routine data about DRD in the mortality register suggests drug-related deaths are much lower than for neighbouring Baltic countries. On the other hand the number of performed autopsies is on decrease (e.g. in 2007 autopsies were performed in 19.7% of total number of deaths as compared with 15.3% in 2012) thus suggesting there might be many cases, for which underlying cause of deaths is not reported correctly. The latter is further supported also by the data from the mortality cohort study, which suggests mortality rates among treated and untreated drug users is not that different from those obtained in other countries/cities. Moreover there are many patients for whom diseases from circulatory, respiratory or other somatic problems are registered as the underlying cause of death.

## **3. Emerging concerns**

In the beginning of 2014 was the first time that head shop drugs (presumably synthetic cannabinoids, Spice) were suggested to be linked with case of death (according to information from media). However it must be noted that we don't have an official approve for this due to unable to detect these drugs by toxicological analyses. The number of performed autopsies is continuously decreasing from 19.7% of total number of deaths in 2007 to 15.3% in 2012 which may be one of the reasons for DRD underestimation.

## **4. Your 2014 presentations or sessions**

Recent DRD trends in Latvia

## Recent developments concerning the DRD Key Indicator in Lithuania

### 1. Brief overall situation on DRD

- Overdoses

The national “drug related death“ definition used in this chapter for data presentation are almost the same as the EMCDDA standard definition for the General Mortality Registries ICD-10 Selection B. The national drug-related death definition aims death cases, where the main death cause was marked in the death certificate with one of these ICD-10 codes: F11; F12; F14; F15; F16; F18, F19 ; X42; X62; Y12, the national definition does not include cases with ICD codes X41, X61, Y11 with T40 codes.

During reported year was registered 54 deaths cases (45 males and 9 females) due to drugs and psychotropic substance use. Compared to 2012 was noticed decrease on Drug-related deaths in Lithuania and this level accounts for 0,13 percent of all deaths registered in Lithuania (in 2012 – 0,17 percent).

- Mortality among drug users

Lithuania collects data regarding persons registered in the health care institutions due to mental and behavior disorders using drugs and psychotropic substances (ICD codes: F11-14, F15, F18, F19).

In 2013, 65 individuals registered as patients dependent on drugs and psychotropic substances died, i.e. 61 men and 4 women

### 2. 2014 analysis (what is new since the 2013 national report?)

After some increase in death cases due to drug and psychotropic substance use noticed in 2012, an decrease of drug-related death cases was registered in 2013 in Lithuania (Table 3-1).

**Table 3-1. Number of deaths caused by drug and psychotropic substance use, by age 2009-2013**

Age group	2008	2009	2010	2011	2012	2013
Under 15	-	-	1	0	0	0
15–19 years	1	-	0	1	1	3
20–24 years	10	6	12	6	9	3
25–29 years	22	24	9	14	21	13
30–34 years	6	16	10	10	16	16
35-39 years	11	10	11	6	8	14
39 years and more	10	12	8	8	15	5
Total	60	68	51	45	70	54

Information Source: the Department of Statistics under the Government of the Republic of Lithuania (data until 2010) and the Institute of Hygiene (data from 2010)

### 3. Emerging concerns

In 2013, the number of deaths of individuals registered as patients dependent on drugs and psychotropic substances increased (2012 - 42, 2013 - 65). As before, in 2013, among the deaths the biggest number was opioid dependent persons - 50.

### 4. Your 2014 presentations or sessions

No presentation

## Recent developments concerning the DRD Key Indicator in Luxembourg

### 1. Brief overall situation on DRD

In Luxembourg there is a legal obligation to contact the Judicial Police in cases of suspicious death, death under suspicious circumstances or death in public spaces. The Drug Unit of the Judicial Police runs a special register indexing overdose cases at the national level. So far, this special register is the most accurate information source available. The National Toxicological Laboratory (LNS - Laboratoire national de santé) is contacted by the Specialized Drug Unit of the Judicial Police to provide forensic analyses. After a cross-check of information, we know that in 2013, 12 cases were reported by Police and a total of 11 overdose cases were verified after autopsy in Luxembourg.

- Overdoses

Most cases (with one exception) involve a mixture of multiple substances. Opioids have been detected in all drd (8 involve heroin, the other 3 methadone or mephenon). Other substances such as alcohol and prescription drugs were also reported in all toxicological analyses.

- Mortality among drug users

Mean age of victims is 36.9, the youngest victims were 30 (one female and one male) and the oldest 53 years old (male). Female average age is slightly lower than male average age (33.2 vs 39). Figures suggest that females' "drug carrer" is shorter than males' career.

### 2. 2014 analysis (what is new since the 2013 national report?)

No "new" or striking change regarding previous years. The number of victims is slightly higher than the 2 previous years but is still stable (11 in 2013, 8 in 2012, 6 in 2011 and 14 in 2010).<sup>3 bullet points</sup>

### 3. Emerging concerns

"New/novel substances" have not been identified in relation to drd. Main concern remains the mixture (cocktails) of different (illegal but also legal such as alcohol and prescription for instance neuroleptic, anxiolitic) drugs.



## Recent developments concerning the DRD Key Indicator in Malta

### 1. Brief overall situation on DRD

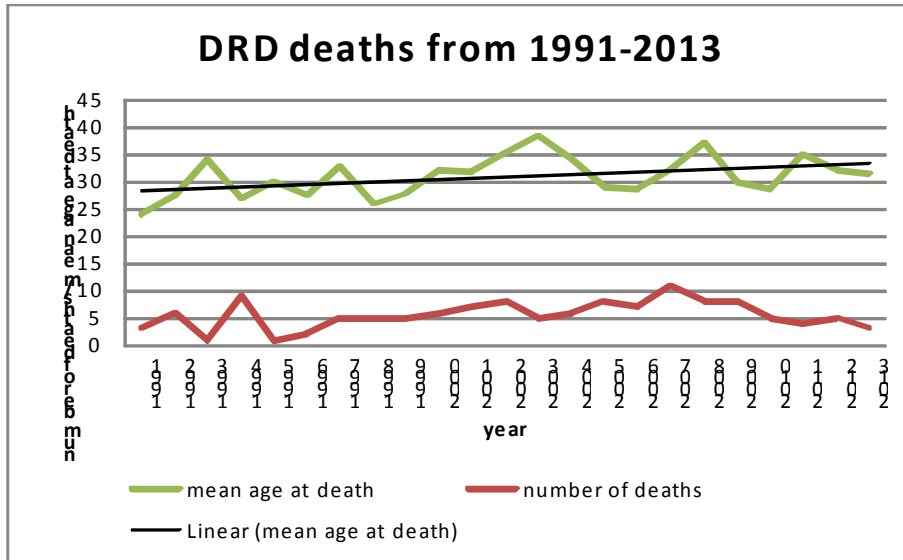
- Overdoses

During the year 2013 there were 3 drug related deaths, a decrease from the previous year of 2. There were 2 male and 1 female deaths and mean age of death was 31.5 years. They were coded as intentional poisoning and the drug of abuse was mainly heroin.

- Mortality among drug users

Malta is currently participating in a mortality cohort study which is being coordinated by EMCDDA. The study was based on a treatment centre mainly for heroin users followed up from 1994 to 2008. There were 1805 subjects followed up with mean age at enrolment of 24 years. Results of this study are being analysed.

### 2. 2014 analysis (what is new since the 2013 national report?)



The above graph shows the trend in the number of DRDs since the year 1991. The trends must be interpreted with caution given the small numbers. There was no significant yearly difference in the number of drug related deaths over the period 1991-2013 ( $p= 0.16$ ). The mean age of death for the period 1991-2013 is also shown in the graph above. There was a significant increase in the mean age of death ( $p= 0.04$ ) as also visualised through the above trend line.

### 3. Emerging concerns

- No new problems.

## Recent developments concerning the DRD Key Indicator in Norway

### 1. Brief overall situation on DRD

- Overdoses

Since the peak in DRDs in 2000/2001 there has been a decrease, and the 2012 number of 246 deaths in Norway seems to be a continuation of the trend in recent years. The decrease in DRDs has coincided with higher availability of opioid maintenance treatment (OMT) during recent years. Although a decrease since the 2000 peak, the number of DRDs is still high in Norway. Reasons for the high frequency may be several; In Norway injecting of drugs is prevalent and typically drugs are taken in a poly-drug fashion. Additionally a relatively high post mortem frequency of the DRDs including toxicological investigations in Norway allows high rates of detection of DRDs.

OMT is increasingly available and currently more than 7055 patients are in treatment (likely 50-60% of target population) as the treatment system has become less restrictive and more harm reduction oriented in recent years.

Opioids and particularly heroin dominate the overdose situation.

- Mortality among drug users

A cohort study is currently including at treatment intake, target is 500 included by mid 2015, and follow-ups will be performed with interview at one year and further follow-ups by registry linkages is planned.

### 2. 2014 analysis (what is new since the 2013 national report?)

- Methadone related deaths on a steady increase since 2009, now nearly as common as heroin-deaths
- Opioid maintenance treatment institutions should focus on a safety regarding take-home medication particularly with methadone patients
- A nasal naloxone project has been initiated in 2 cities; Oslo and Bergen
- The Minister of health and social affairs has launched a national overdose prevention campaign

### 3. Emerging concerns

Increasing numbers of methadone related deaths. Less overdose-reduction than anticipated during recent years although rapid expansion of OMT. Povidone related deaths have been reported associated with injection of Martindale methadone (oral liquid) in Norway. Martindale methadone has therefore been withdrawn from the Norwegian market during spring of 2014.

## Recent developments concerning the DRD Key Indicator in Portugal

### 1. Brief overall situation on DRD

In 2013, the mode of data collection has not changed.

Following a strategic recommendation of the Action Plan on Drugs 2009-2012, as well as the implementation of procedures to improve the quality of general mortality registries - new circuits for data transmission and the transition to ICD-10 from 2002 -, Portugal began to privilege the general registries in the context of this indicator. Simultaneously we intensified the work on optimizing the information of specific registries (complementing the information of toxicology and pathology reports in order to determine the cause of death in cases with toxicological positive results).

As a result of the work undertaken in 2008 and 2009 concerning specific registries records it was possible to provide information from specific registries on overdose cases. Portugal filled in 2010 the Questionnaire on Special Registries on drug related death in Europe, providing detailed information on national specific registries.

In a near future this information will contribute to improve the national mortality statistics in this area and will now overcome some constraints related to statistical secrecy in the provision of toxicological information and social demographic in the context of national mortality registries of INE (National Statistics Institute).

In the General Mortality Registry we couldn't give the break down by ICD Codes (Numbers), but we could determine the codes and combination of codes.

In 2013, started the implementation of the medical certificate online.

- Overdoses

Data from general mortality register 2013 still not available.

In special mortality register 2013:

In 2013, in the context of autopsies, from the 184 deaths with information on the cause of death (75% of the cases with positive toxicological results), 22 (12%) were considered overdoses (29 overdoses (16%) in 2012 and 19 overdoses (12%) in 2011).

Concerning the substances detected in these cases of overdoses once more opiates were predominant (46%). Cocaine was detected in 36% of the cases. As occurred in previous years the majority (91%) of these overdose cases was detected more than one substance (76% in 2012, 79% in 2011 and 87% in 2010), considering the associations with illicit and/or licit substances. In 2013, the majority (82%) of overdose cases are from the male gender (97% in 2012, 84% in 2011 and 88% in 2010) being the mean age 42 years old (37 in 2012, 38 in 2011 and 39 in 2010).

### 2. 2014 analysis (what is new since the 2013 national report?)

Nothing to report.

### 3. Emerging concerns

In 2013 were registered three cases of overdose involving synthetic drugs in combination with other drugs. Two cases involving Ecstasy and one case involving methcathinone in combination with ephedrine. In 2012 and 2011 only one case involving synthetic drugs was registered in each year.

### 4. Your 2014 presentations or sessions

#### Prevalence of benzodiazepines in postmortem cases in 2013

In Portugal in 2012 psychotropic drugs represented 49% of the sale of drugs with action on the central nervous system. In 2012 anxiolytics / sedatives and hypnotics presented a DDDs/1000 inhabitants/day > 80, a trend that keeps over the past 10 years. Different trend shows the use of antipsychotics drugs that in same period reveals in 2012 a value of DDDs/1000 inhabitant/day four times higher than in 2002.

This high consumption of drugs is also reflected in cases of intoxication. According to data from the Portuguese Anti Poison Center 65% of intoxication in adults are associated with medicines and among these drugs 66% were psychodrugs.

In last year 80% of cases received in the Department of Forensic Toxicology of the INMLCF, were requested for screening of medicines. The analytical protocol included approximately 100 active substance distributed by various pharmacotherapeutic subgroups. Among the positive cases, the benzodiazepines are the more prevalent, alone or in combination with ethanol and others drugs. Distribution by gender, age and type of combinations drugs are presented.

## Recent developments concerning the DRD Key Indicator in Romania

### 1. Brief overall situation on DRD

The data collected under DRD are taken over from the body of forensic cases, the forensic medicine institutions being the only ones empowered to manage such cases. Once defined as such, for all the forensic cases toxicological investigations are carried out. The forensic autopsy files -18942 cases this year-form the selection basis for Special Mortality Register where drug related deaths are recorded. In 2013, the indicator DRD shows a slight decrease in the total number of drug related deaths registered compared to the previous year. The number of deaths directly attributable to drug use returns to values close to the numbers reported in 2007-2010, years of stabilisation in drug use and patterns. The number of indirect deaths has decreased to almost half of the value registered in 2012, comparable to the period 2007-2010.

- Overdoses

In 2013 there were 30 cases of direct drug related deaths recorded, from which:

- 28 cases from Bucharest, one case from Arad and another one from Ilfov;
- 25 men and 5 women;
- average age for direct DRD - 31,3 years (13 cases from the 30-34 years old group);
- administration route: most of the direct DRD cases were intravenous opioids injectors(24), 4 cases were cannabis smokers and 2 cases of cocaine oral users.
- substances used: - 23 from all 30 direct DRD were methadone users (76,7%) - 25 methadone overdoses from all drd cases.
  - o 2 cases of cocaine users;
  - o 1 case of ephedrine associated with some other medicines;
  - o 1 case of NPS combined with opiates,
  - o 3 cases of intoxication with psycholeptics (barbiturates & benzodiazepines).

As a conclusion, in 2013 statistics show that direct DRD in Romania are obvious consequences of methadone use (76,7%). In almost all cases (21 of the 23 cases) methadone was combined with sedatives (zolpidem, citalopram, topiramate) and benzodiazepines and also with alcohol and cannabinoids (4 cases).

There is also an increasing trend of drug use combined with alcohol (8 cases in 2013 compared to 2 cases in the previous year). Methadone was identified in 3-4 times over the toxic-lethal range concentration in most of the cases. In 2 cases the concentration was 10 times over this limit.

- Mortality among drug users

The number of drug related deaths remains stable, comparable to values registered in 2007-2010.

It is quite probable a significant underreporting due to the fact that some INDIRECT death associated to drug use cases were not registered in the Special Mortality Register database because of their definition which exceeds the criteria for the mandatory forensic analysis.

Injecting use remains the main route of administration for drug related deaths and the opiates are the most frequent substances used, with an alarming increase of methadone use (medicine under strict control in Romania).

Incidence peaks of drug related deaths are registered during the summer time of 2013.

No mortality cohort studies were conducted this year.

### 2. 2014 analysis (what is new since the 2013 national report?)

- Decreasing trend of NPS use -the main cause for indirect deaths in the former 2 years and also an important factor for infectious pathology (HVB, HVC) increase among IDUs.
- "old" substances responsible for direct drug related deaths reappeared (tramadol, cocaine).
- 9 drug related deaths were reported from the medical emergencies database (6 in 2012).

### 3. Emerging concerns

- alarming increase of methadone use incidence (25 of the 30 cases of direct deaths reported)
- alarming increase of hiv incidence among IDUs
- the urgent need to improve the data collection system ( legal definitions of drug related deaths in Romania, expanding the laboratories and testing facilities network, implementing a specific software application for data collection for DRD, international exchange of good practices in DRD case management and so on)

## Recent developments concerning the DRD Key Indicator in Slovakia

### 1. Brief overall situation on DRD

- Overdoses

52 deaths caused by the direct effects of psychoactive substances were reported in 2013. The important proportion of these were caused by opioides only - 14 cases and by opioides in combination with various substances – 9 cases, which represents together 85% of all direct deaths caused by illicit drugs and solvents. Another 25 deaths (48%) of all direct deaths were caused by medicines. Other substances excluding opioides were identified in 4 cases (14%).

- Mortality among drug users

No data available

### 2. 2014 analysis (what is new since the 2013 national report?)

Reported numbers of DRD in 2013 in Slovakia are very similar to the year 2012; 52 and 50 DRD respectively. Tramadol was detected in 18 cases of direct deaths i.e. in 78% of deaths connected with opiates/opioides and in 4 cases of indirect deaths.

### 3. Emerging concerns

There were not realized recent specific analyses or studies on drug-related mortality except of routine data collection and evaluation in the year 2013.

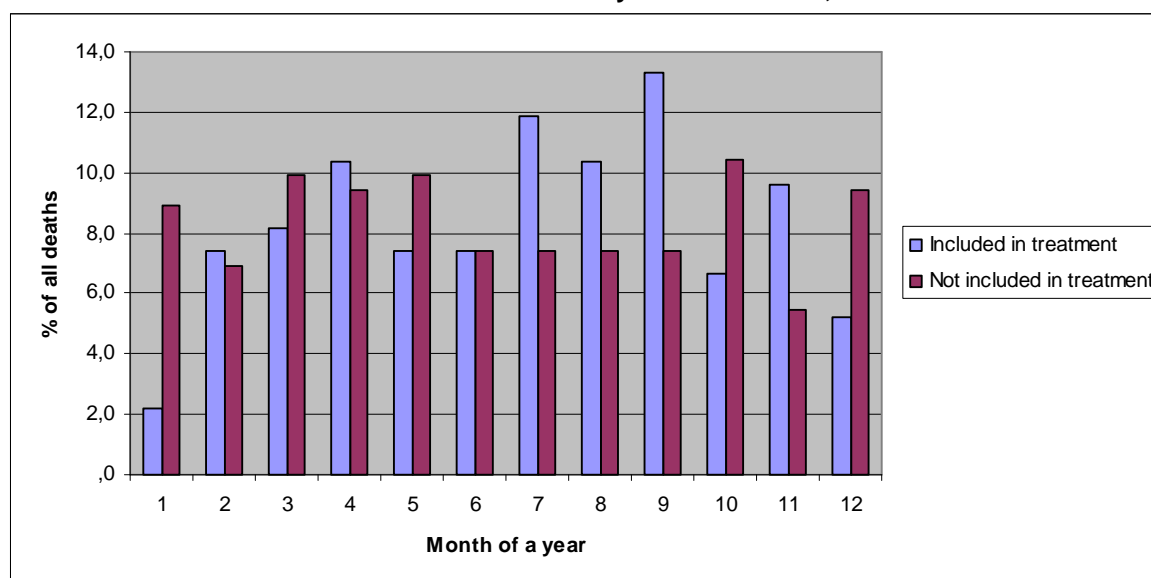
## Recent developments concerning the DRD Key Indicator in Slovenia

### 1. Brief overall situation on DRD

In 2013 there was no significant difference in the number of deaths in comparison to the number of deaths during the last few years. Splitted by five years age groups the highest number of deaths by groups was moving towards the older ages, but in 2013 returned back to the 30-34 age group as was in 2010 and 2011.

Heroin and methadone were drugs responsible for the majority of deaths as a consequence of unintentional-accidental poisonings. Deaths of undetermined ( hether accidental or suicidal) intend were on the second place of which the highest share could be unintentional poisonings, as was the case in a cohort study. No suicides by drugs occurred in 2013. On average during the last ten years the number of men wictimes of illicit drugs were five and a half time higher than women. There were different mortality rates of direct drug poisonnings with different share within three intention cathegories in different regions. No specific indices that drug situation is getting better, except median age at death which is increasing from year to year, were observed.

**Figure 1 Percent share of death among illicit drug users included ( cohort data) or not ( GMR data) in the methadone maintenance treatment by month of death, Slovenia 2004-2013.**



Source: IPH (Medical dath certificate - IPH 46)

It is evident that during the colder months of a year people not included in the methadone maintenance treatment die frequently than in the period from June to September.

### 2. 2014 analysis (what is new since the 2013 national report?)

“Causes of death among young drug users in Slovenia during the period 2004-2012”, a presentation on Slovene scientific conference about caring with and treatment of persons using new drugs, Ljubljana February 2014. Drug related mortality in Slovenia. Differences between deceased treated and untreated illicit drug users. Heroin Addict Clin Probl 2013; 15(1):29-38.

Two scientific papers dealing with suicides among drug users on methadone maintenance therapy and drug users not in treatment were sent for publishing. The answers have not been received yet.

Ph D thesis on “Suicides among drug users on treatment” is in finalization.

### 3. Emerging concerns

In the year 2013 there were no deaths due to new psychoactive substances, but intoxications with some of them: MDMA, 3MMC (drug spread the most among drug users) GHB, and GBL were admitted to hospitals, (intoxications by GHB, GBL were life-threatening). Due to the increasing threats encountered, the activities of Early Warning System (EWS) were intensified, trying to make a network of EWS local points reporting to the EWS central with the aim to react properly and in time according to the recommendations accepted. Assessing the drug situation on the base of direct deaths and cohort data we assume it is relatively stable. In spite of cohort data there is a gap on the number and causes of indirect deaths among drug users not in treatment. We hope special register will be established again in the next years.

The most important conclusions we made after ten years follow up of the cohort data, were:

- after 10 years of follow up the incidence of mortality or mortality rate of treated drug users was 5,7 deceased /1000 person years
- mortality rate of drug users being in treatment was in men two times higher than that of Slovene men of the same age group but in women even 2,5 times higher that meant that women drug users in treatment were doing worse than men in comparison to corresponding population,
- after eight years decreasing of mortality rates and years of potential life lost YPLL, both were increasing in the last two years.
- mortality risk of clients in the first year of treatment was 1,55 higher than that of those being in treatment longer,
- also in drug users in treatment living alone or being unemployed or not included in school system carry a higher risk of death than living with someone or being student or earn some money.
- The most direct cause of death was unintentional poisoning with heroine and/or methadone, but among indirect deaths alcohol liver cirrhosis and cardiovascular diseases prevailed.

Higher risk of death, lower age at death, and higher number of potential years of life lost per deceased in the cohort together with causes of death point to a need of treatment as early as possible after the drug career starts.

## Recent developments concerning the DRD Key Indicator in Spain

### 1. Brief overall situation on DRD

- More info available
  - <http://www.pnsd.msssi.gob.es/Categoria2/observa/home.htm>
  - <http://www.emcdda.europa.eu/html.cfm/index214091EN.html>.
- Sources of information  
Two sources of information are currently being used in Spain:
  - Specific Death Registry due to acute reactions to drugs.
  - General Death Registry (National Institute of Statistics)

### 2. 2014 analysis (what is new since the 2013 national report?)

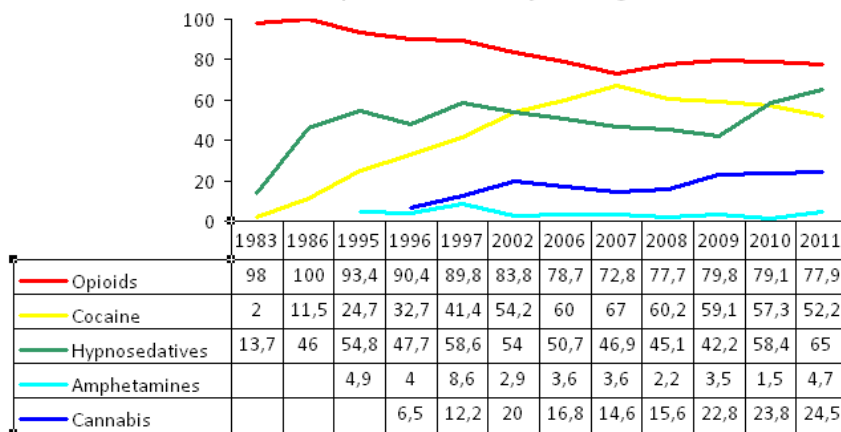
#### Spanish trends and situation

- Looking at data from the estimated number of deaths from illegal drug use at a National level from 1983 to 2011, it is observed that, after the peak at in the early 1990s, a downward trend has occurred and it looks it is become stable. In 2011, a total of 387911 deaths occurred in Spain, of which it has been calculated that 736 were caused by the non-medical use of illegal substances.
- In 2011, opioids were the substance identified in most deaths (77.9%), hyponosedatives remained as the second most prevalent substance (65%), changing the downward trend that began in 2005 Hypnosedatives are showing a sudden increase and outnumber figures for cocaine, which occupied second place during the 2002-2009 period. Cocaine has retained the downward trend that began in 2007 (67%), and was present in 52.2% of deaths in 2011.
- The figure below shows the evolution of deaths due to severe reactions after the use of psychoactive substances in Spain, from 1983 to 2011. The data presented correspond to the percentage of deaths in which each of the substances or metabolites referred to were identified in toxicological analyses.

### 3. Emerging concerns

- Polydrug use is the most frequent pattern for these deaths due to a severe reaction to psychoactive substances.
- Increase of the presence (it is not possible to attribute causality) of cannabis in the death related with drugs.

Evolution of the proportion of deaths after psychoactive substance use according to the substance detected in toxicological analyses. Spain 1983-2011 (%).  
Source: DRD indicator. Spanish Observatory on Drugs.



### 4. Your 2014 presentations or sessions

Spain can make a short presentation showing the trends of mortality due to illegal drugs and some basic characteristics of the deaths (sex, age, civil state, previous pathology, suicide, HIV serology)



## Recent developments concerning the DRD Key Indicator in Sweden

### 1. Brief overall situation on DRD

- Overdoses

Continued increase in DRD for the seventh consecutive year. Data from Toxreg show increase from heroin, buprenorphine, amphetamine and THC, whereas methadone decrease.

### 2. 2014 analysis (what is new since the 2013 national report?)

- Many of the deaths reported in the CDR turn out not to be drug induced, but may be an outcome from the high number of autopsies and analysis performed.
- More analyses are needed to find out how the CDR and toxicity register can show the same amount of deaths as the when the Toxreg list ALL cases tested positive for drugs.

### 3. Emerging concerns

- Is heroin use increasing?
- Officials show increased interest in the DRD increase that hopefully can lead to increased efforts.

## Recent developments concerning the DRD Key Indicator in The Netherlands

### 4. Brief overall situation on DRD

- Overdoses

Due to technical coding issues, data for 2013 from the Causes of Death Statistics from Statistics Netherlands (CBS) will not be available until October/November 2014.

### 5. 2014 analysis (what is new since the 2013 national report?)

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### 6. Emerging concerns

We trust that Statistics Netherlands will succeed in progressing to automatic coding.

### 7. Your 2014 presentations or sessions

-

## Recent developments concerning the DRD Key Indicator in Turkey

### 1. Brief overall situation on DRD

In 2013 compared to the previous year, a 43.2% increase was observed in the number of direct DRDs. In 2013 compared to the previous year, a 155% increase was observed in the number of direct DRDs (n:416). Cases of intoxication with opium derivatives decreased 5.8% compared to the previous year. Compared to the previous year, the cases of non opioid drug related deaths increased significantly. The rate of using cocaine increased 166.7% in indirect drug related deaths and 52.6% in direct related deaths compared to 2012. Both in cases of direct (n:58) and indirect DRDs (n:94), a very significant increase is being observed in ecstasy use compared to the previous years. The rate of using cannabis increased 162.2% in indirect drug related deaths and 67.6% in direct related deaths compared to previous year. There has been a slight increase in the average age of men among the direct DRD cases compared to previous year. The rate of men below 19 years of age among the direct DRD cases of men in 2012 was (n:15) 9.3% whereas this rate increased to (n:25) 11.1% in 2013. Among the indirect DRD cases; however, there has been a dramatic decrease in the average age of men compared to previous year (2012: 35,5; 2013: 32,8). While the age groups in 2013 direct DRD cases in order of frequency are 25-29, 20-24, 35-39, 30-34, 15-19, 40-44 (in 2012 20-24, 25-29, 30-34, 35-39, 15-19); indirect DRD cases in order of frequency are 20-24, 25-29, 30-34, 35-39, 15-19, 40-44 (in 2012 25-29, 20-24, 35-39, 30-34, 15-19).

- Overdoses

162 cases of direct DRDs were observed in Turkey in 2013. %70.7 (n:164) of deaths caused by intoxication with opium derivatives (heroin in 46 cases, heroin and alcohol in 6 cases, heroin ve methadon in 1 case, heroin ve tramadol in 1 case, heroin ve fentanyl in 1 case, methadon in 2 cases, heroin and other drugs in 107 cases), and 29.3% (n:68) of deaths caused by intoxication with other drugs (ecstasy in 12 cases, ecstasy and alcohol in 1 case, cocaine in 2 cases, cocaine and alcohol in 2 cases, amphetamine in 1 case, JWH-018 in 1 case, JWH-018 and alcohol in 2 cases, volatile substance in 8 cases, volatile substance and alcohol in 1 case, poly drug use in 38 cases).

### 2. 2014 analysis (what is new since the 2013 national report?)

The use of synthetic cannabinoid was detected 15,1% (n:35) of the direct DRD cases, 14,7% of the indirect DRD cases. However, synthetic cannabinoid can be analyzed only 4 out of 10 labs. Therefore, this data cannot reflect the real number. 2- The use of opium derivatives except heroin has increased. In the direct DRD cases methadone in 3 cases, tramadol in 1 case and fentanyl in 1 case were detected; whereas, in the indirect DRD cases methadone in 1 case was found. 3- The number of cities where the indirect DRD cases take place has shown an increase of 35,1% and rose to 50 (the total number of cities: 81).

### 3. Emerging concerns

There has been a considerable decrease in the average age of the indirect DRD cases compared to previous year. The age of drug use has been decreasing. 2- There has been an increase in the number of deaths related to the use of non opioid drugs. 3- Poly drug use has increased. Most of the direct DRD cases are related to poly drug use.

## Recent developments concerning the DRD Key Indicator in United Kingdom

### New information

#### 1. Brief overall situation on DRD

Using the DRD Standard, there were **1,946 deaths registered in the UK in 2013 (1,666 in 2012, up 16.8%); males 76.0%, females 24.0%**. Males are generally about 5 years younger than females. Most deaths occurred in the **40-44** age-group. The number of deaths per 100,000 population (all ages) shows that differences exist between the different countries within the UK. Thus, in **2013** the rate using the DRD Standard was **9.62** in Scotland compared to **2.40** in England & Wales and **3.55** in Northern Ireland. The UK average was **3.04** in **2013** (1.98 in 1996). Overall, the largest proportion of deaths in England & Wales using the wider ONS definition was described in **2013** as accidental poisoning (**1862/2955 - 63.0%**), followed by intentional/undetermined poisonings (**970 or 32.8%**), and then mental & behavioural disorders (**121 or 4.1%**). Males are more likely to die at a younger age of drug dependence/non-dependent abuse of drugs and females at an older age by means of intentional/undetermined poisoning.

In England & Wales in the period 1993-2013, more than one drug was involved in **32.9% [18949/57583]** and alcohol in **26.1% [15029/57583]** of all DRDs (using the wide definition employed by ONS). Deaths in **2013** where heroin/morphine was mentioned numbered **765** (up from **579** in **2012**, but up from 155 in 1993). The number of cases in which methadone was implicated rose steadily from 206 in 1993 to peak at 437 in 1997, falling to 199 in 2002, before rising to a new peak of 408 in 2009; but fell back to 355 in 2010 before reaching an all-time high of 486 in 2011 and then **declining to 429 in 2013**. Mentions of cocaine, although still comparatively few compared to heroin/morphine, rose more than 20-fold over the period 1993-2008 as a whole (from 11 to 235) but fell to 202 in 2009 and 112 in 2011 before increasing again in **2013 to 169**. Deaths involving ecstasy accounted for only 1% of drug-related deaths; they rose from 12 in 1993 to 56 in 2002, fell to 43 in 2004, rose again to 58 in 2005, but fell to 27 in 2009 and to only 8 in 2010 (the lowest since monitoring started) but recovered to **43 in 2013**. GHB/GBL were mentioned in 76 deaths recorded by the ONS between 1996 and 2009, and had followed a rising trajectory in the last few years, but fell in 2009-2010 before rising in 2011 only to fall back in 2012 **but rising again in 2013 to 18**. Mentions of piperazines started to appear on death certificates in 2009 (n=9) and 2010 (n=5) but fell in 2010 (n=6) and 2011 (n=2), but rose to 9 in 2012 **before falling to 1 in 2013**. Cathinones such as mephedrone made their first appearance in 2010 (n=6), remaining at that level in 2011 before **quadrupling to 26 in 2013**.

#### 2. 2014 analysis (what is new since the 2013 national report?)

Over the period 1996-2001, the total number of deaths rose by 73.2% from 1,152 to 1,995; fell by 20.1% to 1,595 in 2003, and then increased by 39.9% to 2,231 in 2008, before falling by **25.3% to 1,666 in 2012, followed by a rise to 1946 in 2013**. There were rises of **52.8%** and **153.8%** for males and females respectively over the period 1996 to **2013**. There was a male: female ratio of **3.2:1** in **2013**. Using the broad ONS definition, the overall number of deaths fell by 3.5% between 2010 and 2011 and by 2.1% between 2011 and 2012, **before rising by 9.3% in 2013 to a new peak**. Table 1 shows, during the last year, **an increase in the number of deaths involving mephedrone (+57.1%), ecstasy-type (+40.9%), amphetamine (+26.9%), cocaine (+23.6%), heroin/morphine (+22.6%), paracetamol (+22.0%), tramadol (+19.7%)**. There were falls in the number of mentions of cannabis (-27.8%), temazepam (-22.2%), diazepam (-9.0%), methadone (-1.5%), anti-depressants (-1.1%), and anti-psychotics (-0.7%) recorded.

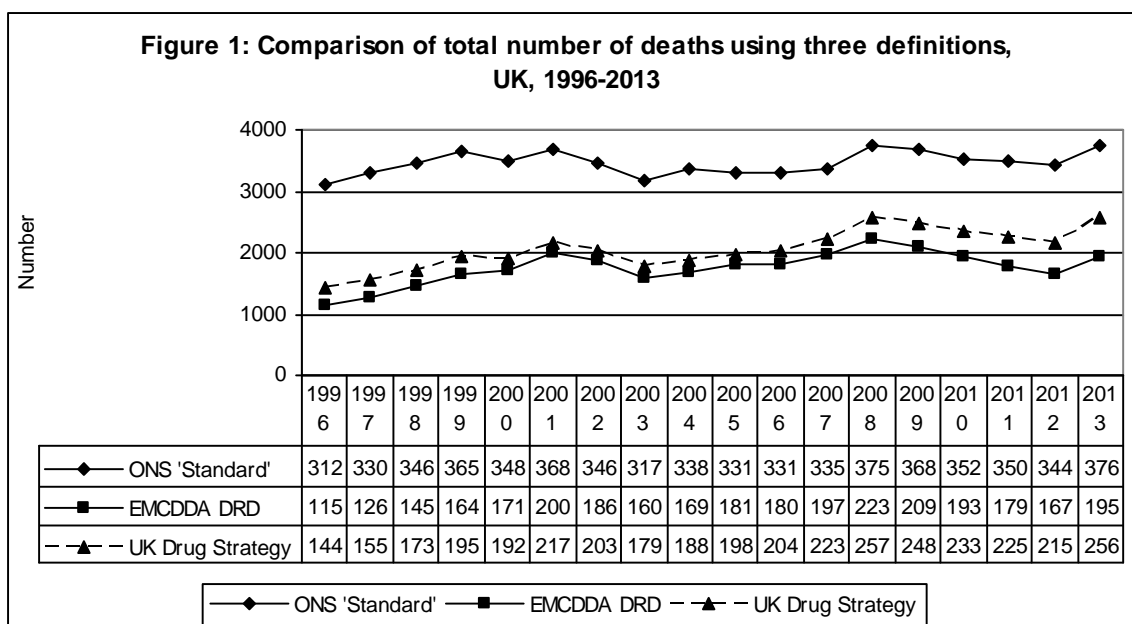
Published data show there were 46 deaths associated with Volatile Substance Abuse in 2009 (38 in 2008). This is the second lowest figure since data collection methods became stable in 1983 and compares with the all-time peak of 152 in 1990 (*Ghodse et al, 2012b*). In addition, there were 46 deaths resulting from the inhalation of helium, compared to 26 in 2008. **No updates have been possible due to a lack of resources at the UK SMR (NPSAD)**.

Deaths of IDU (including sex between men and IDU) AIDS victims accounted for 7.9% (**1,512/19,186**) of the total number of AIDS deaths in England & Wales up to the end of December **2012**. The levelling off in the number of deaths of IDU AIDS victims seen in recent years gave way to a slight increase in 2009. The UK figure of 63 for 2011 (66 in 2010) is about 30% of the peak level in 1995 (212). By the end of December **2012, 46** deaths had been reported for that year (Personal communication to John Corkery from Health Protection Agency, **30 May 2014**).

**Table 1: Mentions of selected drugs on death certificates, United Kingdom, 2003-13**

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Heroin/morphine	883	977	1,045	985	1,130	1,230	1,215	1,063	820	825	1011
Methadone	292	300	292	339	441	550	586	535	765	660	650
Cocaine	161	192	221	224	246	282	239	181	152	174	215
Amphetamine	43	53	62	60	62	72	57	52	72	67	85
Ecstasy-type	66	61	75	62	64	52	32	9	24	44	62
Mephedrone	0	0	0	0	0	0	1	14	9	14	22
Cannabis	32	24	25	22	20	20	22	11	7	18	13
All benzos, of which	427	385	321	297	345	414	442	469	514	527	535
Diazepam	282	216	210	187	223	277	302	315	336	410	373
Temazepam	114	88	55	56	57	50	48	38	45	45	35
Antidepressants	524	565	484	454	436	512	528	528	529	618	611
Antipsychotics	77	94	96	104	114	117	110	116	143	148	147
Paracetamol	547	632	490	376	306	319	302	251	257	223	272
Tramadol	51	56	75	109	116	126	135	185	205	254	304
All ONS definition deaths	3,168	3,378	3,305	3,306	3,352	3,754	3,677	3,517	3,499	3,436	3,755

Notes: A revised data collection form was introduced in Scotland in 2008 which has resulted in more specific drugs being identified than in previous years; ONS revised how they deal with paracetamol in compounds in 2010, and revised their figures retrospectively. ONS have made revisions to their historic data; data for Northern Ireland have been extracted for us by NISRA and are slightly different in some years to what had been previously extracted. Year of registration of death, not year when death occurred.



### 3. Emerging concerns

In an attempt to assist in a better understanding of the extent of NPS use and the fatalities that have been linked to these compounds Elliott and Evans (2014) collated their findings in post-mortem and criminal casework where these have been detected and/or implicated. Between January 2010 and December 2012 NPS were detected in 203 cases, with 120 cases in 2012 alone. The drugs detected in 'in vivo' or post-mortem blood and urine were, in order of decreasing frequency: mephedrone, 4-methylethcathinone, BZP, MDPV, TFMPP, methoxetamine, 4-fluoromethcathinone, 4-methylamphetamine, PMA, methylone, PMMA, naphyrone, alpha-methyltryptamine, butylone, MDAI, desoxypipradrol, D2PM, MPA, synthetic cannabinoids, 2-AI, 5-IAI, 5-MeODALT, MDPBP, 5/6-APB, pentedrone and pentylone. Other drugs or alcohol were detected in 84% of the cases including other NPS.

In respect of fatalities it should be noted that alternative causes of death (including mechanical suicide, accidental death and non-psychoactive drug overdose) accounted for the majority. Related to this was that of all fatalities involving cathinones, 41% of these were hangings or other mechanical suicides, this was a higher proportion than seen with other drugs found in such cases. The presence of multiple NPS and/or other stimulants was a particular feature in various cases, however, of the drug deaths only 7% solely involved NPS. Across all case types and including some cases investigated in 2013, NPS concentrations showed a wide range but these and selected cases are presented to assist toxicological interpretation in future cases.

A cluster of deaths in Northern Ireland occurred during 2013 and several of these were associated with the police seizure of tablet items ("Speckled Cherry" and "Speckled Cross" motifs). Analysis of both tablet types revealed the presence of a new designer drug which was characterized as para-methyl-4-methylaminorex (4,4'-DMAR) or "Serotoni". Although 4-methylaminorex and aminorex are controlled Drugs in the UK, the para-methyl derivative is not subject to control at this time. The presence of 4,4'-DMAR was detected in toxicology samples submitted in a number of drug abuse deaths; some of which were directly associated with the tablet seizures. By May 2014, the drug had been detected (in blood/urine/gastric contents) in a total of 18 fatal cases in Northern Ireland. (Cosbey et al. (2014). In all of these cases at least one other drug was also detected. Excluding two of the cases, where the drug concentrations were very low (0.02 mg/L), post mortem concentrations of 4,4'-DMAR, ranged from 0.20 to 3.75 mg/L (median 1.18 mg/L). There are indications that this drug may have also been involved in 8 fatalities in another European country.

Handley and Flanagan (2014) used published statistics from the Office for National Statistics (Mortality Statistics – Injury and poisoning, Series DH4 (2000 – 2005), Mortality Statistics – Deaths registered in England and Wales, Series DR (2006 – 2011), and the Office for National Statistics drug poisoning database for information on fatal poisoning during 2000 – 2011); and 7 papers that gave relevant information on deaths reported during 2000 – 2011 that were not superseded by later publications (identified from Pubmed for 'fatal' and 'poisoning' and 'England' and 'Wales'), found the annual number of deaths from poisoning fell from 2000 (3092) to 2010 (2749), before increasing to 3341 in 2011. This increase was due in part to a change in the ICD coding relating to alcohol poisoning, suggesting that such deaths had been under-recorded previously. Although fatalities from dextropropoxyphene declined (287 in 2004 and 18 in 2011) following the withdrawal of co-proxamol (paracetamol [acetaminophen] and dextropropoxyphene [propoxyphene] mixture) during 2005 – 2007, deaths involving codeine and most notably tramadol (836 deaths during 2000 – 2011) increased. Deaths from paracetamol poisoning either alone, or with alcohol reached 89 in 2011, the lowest annual figure since 1974. However, in reality there has been no marked downward trend since 1999 despite reductions in pack size, continued publicity as to the dangers of paracetamol overdose, and improved liver failure treatment, including transplantation. The annual number of deaths from antidepressants remained relatively stable (median: 397, range: 335 – 469). Although the number of deaths from dosulepin [dothiepin] decreased (186 in 2000 and 49 in 2011), the number of deaths involving selective serotonin reuptake inhibitors increased (50 in 2000 and 127 in 2011). Although annual numbers of deaths involving diamorphine/morphine (88% unintentional) declined, deaths involving methadone (89% unintentional) increased and the total annual number of deaths from these drugs showed little change (2000: 1061, 2011: 995). Deaths involving amphetamine/methylamphetamine remained relatively constant at about 50 annually, and whilst cocaine-related deaths fell by 48% during 2008 – 2011, and deaths involving MDMA and related compounds fell by 69% over this same period, deaths involving 'legal highs', notably Gamma-hydroxybutyrate/ Gamma-butyrolactone and ketamine, increased. The authors conclude that alterations in the availability of paracetamol and of prescription drugs such as dextropropoxyphene and dosulepin have not been accompanied by decreases in the number of deaths from poisoning. Despite intense media and other interest, the annual number of deaths (250 – 300) involving 'recreational' drugs remains small in relation to the 1000 or so deaths a year from heroin/morphine and/or methadone.

In the UK tramadol is a frequently prescribed opioid analgesic which is becoming increasingly popular as a drug of misuse. A review of all deaths associated with tramadol highlighted 127 cases from 1996-2012 (Randall and Crane, 2014). A 10% increase in such deaths was noted. In 2001 tramadol deaths represented nine per cent of all drug misuse deaths rising to 40% in 2011. The majority of deaths occurred in males (62%), with a median age of 41 years, living in the Belfast city area (36%). Tramadol deaths were observed in combination with other drugs/medicines (49%), alcohol (36%) or alone (23%). Most of those who died did not reach hospital, with only 2% presenting with multi-organ or acute liver failure. In just over half of the deaths, tramadol had not been prescribed by a medical practitioner (53%). Depression, anxiety and seizures were recognised as risk factors. The authors noted that an increase in awareness of tramadol toxicity is needed amongst the public and doctors.

Weich et al. (2014) used a retrospective cohort study of 273 UK primary care practices contributing data to the General Practice Research Database, covering 34,727 patients aged 16 years and older first prescribed anxiolytic or hypnotic drugs, or both, between 1998 and 2001, and 69,418 patients with no prescriptions for such drugs (controls) matched by age, sex, and practice. Patients were followed-up for a mean of 7.6 years (range 0.1-13.4 years). After excluding deaths in the first year, there were approximately four excess deaths linked to

drug use per 100 people followed for an average of 7.6 years after their first prescription. The authors conclude that in this large cohort of patients attending UK primary care, anxiolytic and hypnotic drugs were associated with significantly increased risk of mortality over a seven year period, after adjusting for a range of potential confounders.

#### 4. Emerging problems: new substances, characteristics of victims...

##### Legal highs/Novel psychoactive substances (NPS)

Whilst opiates and opioids continue to dominate in the UK, towards the end of 2009 there was a noticeable decline in the number and proportion of cases involving stimulants. To some extent these changes appear to have been reversed slightly for amphetamines and ecstasy-type drugs. Substances such as piperazines, ketamine and GBL which at the time of the 2009 report were 'legal highs' but became controlled drugs, continue to be present in post-mortem toxicology reports - although possibly declining in the case of piperazines. Towards the end of 2009 new substances, chiefly methcathinones such as mephedrone started to appear in reports to np-SAD. These increased during 2010 and into 2014. As these became controlled, new substances emerge; of particular concern at present are phenazepam and other 'designer' benzodiazepines, PMA/PMAA, 4,4'-DMAR, benzofurans, indoles, synthetic cannabinoids, synthetic opioids.

##### ICD coding

Towards the end of 2009 new substances, chiefly methcathinones (such as mephedrone, methylone and MDPV), and naphyrone started to appear in reports to np-SAD and are still occurring. In addition new classes of substances, such as aminoindanes, benzofurans, indoles, methoxetamine and synthetic cannabinoids have caused fatalities. The past few years have seen some important changes in the types of drugs being used recreationally and consequently beginning to contribute to drug-related morbidity and mortality. The UK expert has discussed with the GMRs difficulties in respect of ICD-10 coding for novel psychoactive substances/'legal highs' for which there are no specific codes or guidance. These points have been relayed in these last few years to the EMCDDA in Lisbon, and fed into the discussions of the WHO body drawing up ICD-11.

##### **Selected new reports:**

- Bogdanowicz, K.M., Stewart, R., Broadbent, M., Hatch, S.L., Hotopf, M., Strang, J., Hayes, R. (2014). Or03-4psychiatric comorbidity and excess all-cause and cause-specific mortality in opioid addicts. *Alcohol Alcohol*. Sep, 49 Suppl 1:i41. doi: 10.1093/alcalc/agu053.14. PMID: 25221166
- Corkery, J., Claridge, H., Loi, B., Goodair, C., Schifano, F. (2014). *Drug-related deaths in the UK: Annual Report 2013*. Drug-related deaths reported by Coroners in England, Wales, Northern Ireland, Guernsey, Jersey and the Isle of Man; Police forces in Scotland; & the Northern Ireland Statistics and Research Agency – Annual Report January-December 2012. 12 February. London: International Centre for Drug Policy, St George's University of London. Available at:  
<http://www.sgul.ac.uk/research/projects/icdp/our-work-programmes/pdfs/National%20Programme%20on%20Substance%20Abuse%20Deaths%20-%20Annual%20Report%202013%20on%20Drug-related%20Deaths%20in%20the%20UK%20January-December%202012%20PDF.pdf>
- Cosbey, S., Kirk, S., McNaul, M., Peters, L., Prentice, B., Quinn, A., Elliott, S.P., Brandt, S.D., Archer, R.P. (2014). Multiple fatalities involving a new designer drug: para-methyl-4-methylaminorex. *J Anal Toxicol*. Jul-Aug, 38(6):383-4. doi: 10.1093/jat/bku031. PubMed PMID: 24830294.
- Edinburgh and Lothians Drug-related Deaths Case Review Group. (2013). *Drug-related Deaths 2012, Edinburgh and Lothians*. 4 December. Edinburgh: NHS Lothian. Available at:  
[www.drldlothian.org.uk/about/SiteAssets/Pages/Publications/annualreport2012.pdf](http://www.drldlothian.org.uk/about/SiteAssets/Pages/Publications/annualreport2012.pdf)
- Elliott, S., Evans, J. (2014). A 3-year review of new psychoactive substances in casework. *Forensic Sci Int*. Apr, 243C:55-60. doi: 10.1016/j.forsciint.2014.04.017. [Epub ahead of print] PMID: 24810679.
- Handley, S.A., Flanagan, R.J. (2014). Drugs and other chemicals involved in fatal poisoning in England and Wales during 2000 – 2011. *Clin Toxicol (Phila)*. Jan, 52(1):1-12. doi: 10.3109/15563650.2013.872791. PMID: 24397714.
- Hecht, G., Barnsdale, L., McAuley, A. (2014). *The National Drug-Related Deaths Database (Scotland) Report: Analysis of Deaths occurring in 2012*. Edinburgh: ISD Scotland. 25 March 2014. Available at:  
<https://isdscotland.scot.nhs.uk/Health-Topics/Drugs-and-Alcohol-Misuse/Publications/2014-03-25/2014-03-25-NDRDD-Report.pdf?87762087584>
- NFDRD. (2014). *National Forum on Drug-Related Deaths Annual Report 2013*. 31 March. Edinburgh: National Forum on Drug-Related Deaths. Available at: [http://cdn.basw.co.uk/upload/basw\\_83937-5.pdf](http://cdn.basw.co.uk/upload/basw_83937-5.pdf)

NISRA. (2014). *Drug-Related Deaths and Deaths due to Drug Misuse registered in Northern Ireland (2003-2013)*. 30 June 2014. Belfast: Northern Ireland Statistics & Research Agency. Available at: [http://www.nisra.gov.uk/archive/demography/publications/drug\\_deaths/Drug\\_Tables\\_13.xls](http://www.nisra.gov.uk/archive/demography/publications/drug_deaths/Drug_Tables_13.xls)

NRS. (2014). *Drug-Related Deaths in Scotland in 2013*. Edinburgh: National Records of Scotland. 14 August 2014. Available at: <http://www.gro-scotland.gov.uk/files2/stats/drug-related-deaths/2013/drugs-related-deaths-2013.pdf>  
<http://www.gro-scotland.gov.uk/statistics/theme/vital-events/deaths/drug-related/2013/list-of-tables-and-figures.html>

ONS. (2014). *Deaths related to drug poisoning in England and Wales, 2013*. Statistical Bulletin. 3 September 2014. Newport, Gwent: Office for National Statistics. Available with accompanying spreadsheets at: [http://www.ons.gov.uk/ons/dcp171778\\_375498.pdf](http://www.ons.gov.uk/ons/dcp171778_375498.pdf)  
<http://www.ons.gov.uk/ons/rel/subnational-health3/deaths-related-to-drug-poisoning/england-and-wales---2013/rft--table-1.xls>

PHE. (2014). *Turning evidence into practice: Preventing drug-related death*. April. London: Public Health England. Available at: <http://www.nta.nhs.uk/uploads/teip-drd-2014.pdf>

Randall, C., Crane, J. (2014). Tramadol deaths in Northern Ireland: A review of cases from 1996 to 2012. *J Forensic Leg Med*. Mar, 23:32-6. doi: 10.1016/j.jflm.2014.01.006. PubMed PMID: 24661703.

Thomas, K.H., Martin, R.M., Potokar, J., Pirmohamed, M., Gunnell, D. (2014). Reporting of drug induced depression and fatal and non-fatal suicidal behaviour in the UK from 1998 to 2011. *BMC Pharmacol Toxicol*. Sep, 15(1):54. PMID: 25266008.

Weich, S., Pearce, H.L., Croft, P., Singh, S., Crome, I., Bashford, J., Frisher, M. (2014). Effect of anxiolytic and hypnotic drug prescriptions on mortality hazards: retrospective cohort study. *BMJ*. Mar, 348:g1996. doi: 10.1136/bmj.g1996. PMCID: PMC3959619, PMID: 24647164.

Welsh Government. (2014). *Guidance for undertaking fatal and non-fatal drug poisoning reviews in Wales*. June. Cardiff: Welsh Government. Available at: <http://wales.gov.uk/docs/dhss/publications/140701substanceen.pdf>

John Corkery, UK FP DRD expert  
Research Co-ordinator, Department of Pharmacy, University of Hertfordshire, Hatfield, UK  
Advisor to & former Programme Manager of National Programme on Substance Abuse Deaths (NPSAD) & Volatile Substance Abuse mortality register, St George's University of London [j.corkery@herts.ac.uk](mailto:j.corkery@herts.ac.uk)  
October 2014

## Your 2014 presentations or sessions

Additional abstracts received by Martin White, external participating expert from United Kingdom

### **A record-linkage study of opioid-related deaths and treatment for opioid misuse in England 2008-2011**

The high mortality rate of opioid users has received wide research attention, in particular the levels of drug-related death in those who engage in structured treatment. In the present study, information concerning 220,665 adults who received structured treatment for opioid misuse in England between April 2008 and March 2011 is matched to England's drug-related mortality database. Using national estimates of opioid prevalence to provide a base population of opioid users, rates of opioid-related poisoning are calculated outside (or prior to) treatment, during treatment and after treatment. Estimated additional numbers of opioid-related poisonings in the absence of treatment are calculated by applying rates outside treatment to all opioid users. We suggest that triangulating prevalence, treatment and mortality data provides an effective method that could be used to evaluate the efficacy of treatment systems in reducing opioid-related poisoning.

### **A record-linkage study of drug-related deaths and drug misuse treatment in England 2007-2011**

The high mortality rate of drug users has received wide research attention, in particular the levels of drug-related death in those who engage in structured treatment. In the present study, information concerning 350,039 adults who received structured treatment for drug misuse in England between 2007 and 2011 is matched to England's drug-related mortality database. The primary aims of this study are to identify any periods of increased risk during or following treatment and to explore which key factors may increase or mitigate risk of drug-related death, analysing information collected throughout treatment on levels of drug use and other individual risk covariates such as homelessness or regular employment. These findings could enable the application of mortality prevention measures within treatment services and this could ultimately facilitate a reduction in drug-related death among individuals in contact with drug treatment.