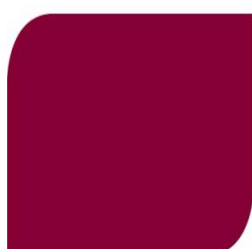
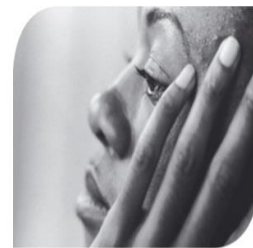


Drug-related deaths and deaths among drug users in Ireland



2011 figures from the
National Drug-Related Deaths Index

January 2014

Summary of 2011 results

This update presents figures from the National Drug-Related Deaths Index (NDRDI) on deaths due to poisoning by alcohol and/or other drugs, and deaths among drug users, in the period 2004–2011. The figures in this update supersede all previously published figures.^a

Overview

- In the eight-year period 2004–2011 a total of 4,606 deaths by drug poisoning and deaths among drug users met the criteria for inclusion in the NDRDI database. Of these deaths, 2,745 were due to poisoning and 1,861 were deaths among drug users (non-poisoning) (Table 1).
- The annual number of deaths in 2011 increased to 607, compared to 597 in 2010. The 2011 figure is likely to be revised when new data become available (Table 1).

Poisoning deaths in 2011

- The annual number of poisoning deaths increased from 338 in 2010 to 365 in 2011 (Table 1).
- Males accounted for the majority of deaths in each year since 2004; 72% of all poisoning deaths in 2011 were male (Figure 1).
- The median age of those who died in 2011 was 39 years, similar to previous years (Table 2).
- Over half (59%) of all poisoning deaths involved more than one substance (polysubstance use) (Tables 3 and 4). This represents a 28% increase from 2010 when 168 polysubstance poisonings were recorded compared to 215 in 2011.
- Alcohol was involved in 37% of poisoning deaths in 2011, more than any other substance (Table 5). Alcohol alone was responsible for 17% of all deaths (Table 4).
- In 2011 the number of poisoning deaths where methadone was implicated increased to 113, compared to 60 in 2010 (Table 5). The majority of deaths (86%) where methadone was implicated were polysubstance poisonings. A similar trend was observed in Scotland during the same time period.^b
- The number of poisoning deaths where benzodiazepines were implicated increased by 61%, to 166 in 2011 compared to 103 in 2010 (Table 6).
- The number of poisoning deaths in which heroin was implicated continues to decline, with a decrease by 17%, to 60 in 2011 compared to 72 in 2010 (Table 5). A similar trend was observed in Scotland during the same time period.^b
- Since 2007 there has been a 65% decrease in the number of poisoning deaths where cocaine was implicated, with 23 deaths in 2011 compared to 66 in 2007 (Table 5).

Non-poisoning deaths in 2011

- The number of non-poisoning deaths recorded among drug users dropped for a second year, to 242, compared to 259 in 2010 (Table 1). These deaths are categorised as being due either to trauma, or to medical causes.

Deaths due to trauma

- The number of deaths due to trauma decreased in 2011, to 117 deaths, down from 122 in 2010 (Figure 4).
- The majority (83, 71%) of those who died from traumatic causes in 2011 were aged under 39 years (Figure 5). The median age was 29 years. As in previous years, the majority (101, 86%) of those who died due to trauma were male.
- The most common causes of death due to trauma in 2011 were hanging (65, 56%) and road traffic collision (14, 12%) (Figure 6).

^a Please note that previously reported figures for the years 2004–2010 have been updated to include new data. Similarly, figures for 2011 will be revised in the future when new data become available.

^b <http://www.gro-scotland.gov.uk/files2/stats/drug-related-deaths/2012/drugs-related-deaths-2012.pdf>

Deaths due to medical causes

- The number of deaths due to medical causes continues to decrease since 2009 from 132 to 125 in 2011 (Figure 4).
- The majority (75, 60%) of those who died from medical causes in 2011 were aged between 30 and 49 years (Figure 7). The median age was 43 years. Males accounted for 76% (95) of those who died due to medical causes in 2011.
- The most common medical causes of death in 2011 were cardiac events (44, 35%) and liver diseases (27, 22%) (Figure 8).

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Glossary

Drug users: Individuals who have a history of drug dependency or of non-dependent abuse of drugs and/or other substances

Non-poisoning deaths: Deaths in individuals with a history of drug dependency or non-dependent abuse of drugs (ascertained from toxicology results and from Central Treatment List, medical or coronial records) whether or not the use of the drug was directly implicated in the death

Poisoning deaths: Deaths which are directly due to the toxic effect of the presence in the body of one or more drugs and/or other substance(s)

Introduction

The Irish National Drug-Related Deaths Index (NDRDI) is an epidemiological database which records cases of death by drug and/or alcohol poisoning, and deaths among drug users and those who are alcohol dependent. The NDRDI is maintained by the Health Research Board (HRB). It is jointly funded by the Department of Health and the Department of Justice and Equality.

The NDRDI was established in September 2005 to comply with Action 67 of the 2001–2008 National Drugs Strategy.¹ Prior to that, drug-related deaths and deaths among drug users had not been systematically documented in Ireland. Families of substance users in Dublin, through the National Family Support Network (which supports the development of family support groups and networks in Ireland in dealing with the problem of drug misuse; www.fsn.ie) had advocated for some years for the development of a mechanism to accurately measure the extent of premature death among drug users. In response to this, Action 67 called for the development of a system for recording drug-related deaths and deaths among drug users to enable the State and its agencies to respond in a timely manner, with accurate data. The objectives of the NDRDI also include identifying and prioritising areas for intervention and prevention, and measuring the effects of such interventions. The remit of the NDRDI was further expanded in January 2006 to include alcohol-related deaths and deaths of people who were alcohol dependent.

The number of drug-related deaths and deaths among drug users is one of the key indicators used to measure the consequences of problem drug use in Europe. The NDRDI enables accurate reporting of these key data to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).

The NDRDI records data from four sources: the Coroner Service, the Hospital In-Patient Enquiry scheme (HIPE), the Central Treatment List (CTL), the General Mortality Register (GMR) via the Central Statistics Office (CSO) in order to ensure that the database is complete and accurate. Cases from the different data sources are cross-matched on a selection of variables, including name, gender, county of residence, date of birth and date of death. This allows the NDRDI to eliminate duplicates and to maximise the amount of information available on each case recorded on the database. Named data were not available from the GMR for the years 2004 and 2005; to avoid duplication and over-estimation of the number of cases, GMR cases with no match in the other three data sources were not included in the NDRDI for those two years. More detailed information on the methodology can be found in the previously published HRB Trends Series papers.²⁻⁴

Background

Drug use can lead to premature death from a range of different causes.⁵ Many deaths are caused by poisoning (both intentional and unintentional), where the death is directly attributable to the consumption of drugs (alone or in combination with other substances). For the purposes of this paper, this type of directly drug-related death is referred to as a **poisoning**.

Deaths among drug users (whether the user is dependent or non-dependent) may be indirectly attributed to their drug use. For the purpose of this paper, this type of indirectly drug-related death is referred to as a **non-poisoning**. Causes of death in such cases include:

- infection with HIV as a result of sharing drug paraphernalia, and subsequent development of an AIDS-related illness;
- the harmful effects of drug use (both short and long term) on the health of the drug user, such as the cardio-toxic effect of cocaine or drug-related liver disease;⁶⁻⁹
- actions taken while under the influence of drugs, such as accidents caused by impaired judgement or exacerbation of risky behaviours;^{5, 6}
- psychiatric illness as a co-morbid condition, which places the individual at a greater risk of suicide.^{5, 10-12}

In line with international practice, deaths that are the result of the drug use of another individual, such as a road traffic collision or an assault, are not recorded by the NDRDI.

Alcohol consumption has been reported as the third most detrimental risk factor for ill health and premature death in Europe.¹³ The NDRDI has retrospectively recorded data from 2004 onwards on alcohol-related deaths and deaths among those who were alcohol dependent. Poisoning deaths due to alcohol-only (collected retrospectively from 2004) have been included in the web-updates of 2009 data onwards, therefore data reported since then differ to previous NDRDI reports on poisoning deaths. This update however does not include data on non-poisoning deaths in individuals who had a history of alcohol dependency *only*.

Most cases of drug misuse or dependence involve illicit drugs; however, licit drugs also may be misused and may lead to dependency. Deaths in which licit drugs are implicated are included in the NDRDI. A documented history of drug dependence or drug use is not available in all cases, leading to an under recording of the total number of non-poisoning deaths in the drug-using population. Calculation of mortality figures for both poisonings and non-poisonings provides an estimate of the total burden of mortality related to drug use in Ireland.

Results

Between 2004 and 2011, 4,606 deaths by drug and alcohol poisoning and deaths among drug users met the criteria for inclusion in the NDRDI. **Please note** that previously reported figures for the years 2004–2010 have been updated to include new data. Similarly, figures for 2011 will be revised in the future when new data become available.

Table 1 Number of deaths, by year, NDRDI 2004 to 2011 (N=4,606)

	2004	2005	2006	2007	2008	2009	2010	2011
All deaths	431	503	561	630	624	653	597	607
Poisonings (n=2,745)	267	300	326	389	386	374	338	365
Non-poisoning (n=1,861)	164	203	235	241	238	279	259	242

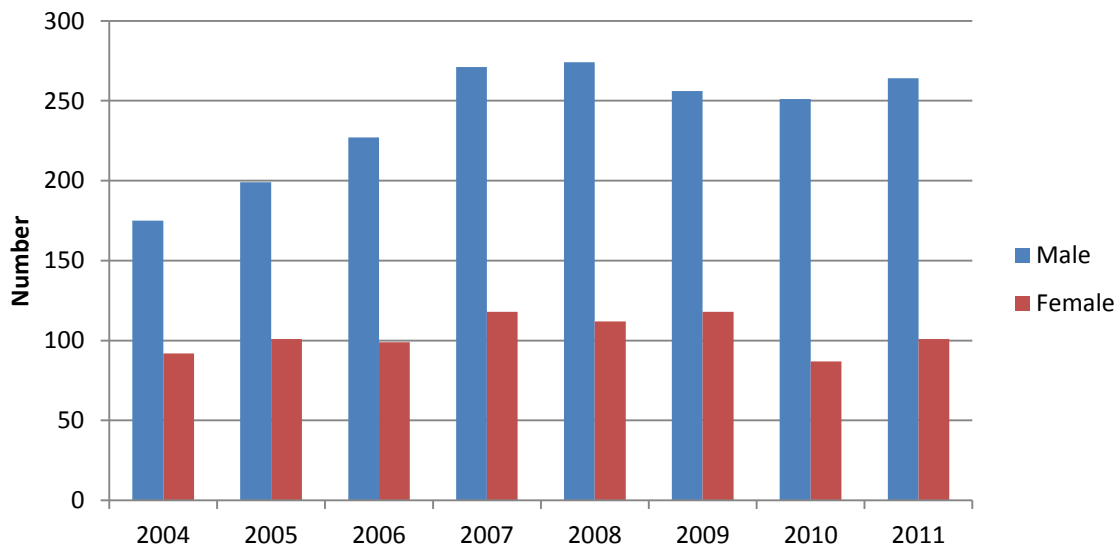


Figure 1 Number of poisoning deaths, by gender and by year of death, NDRDI 2004 to 2011 (N=2,745)

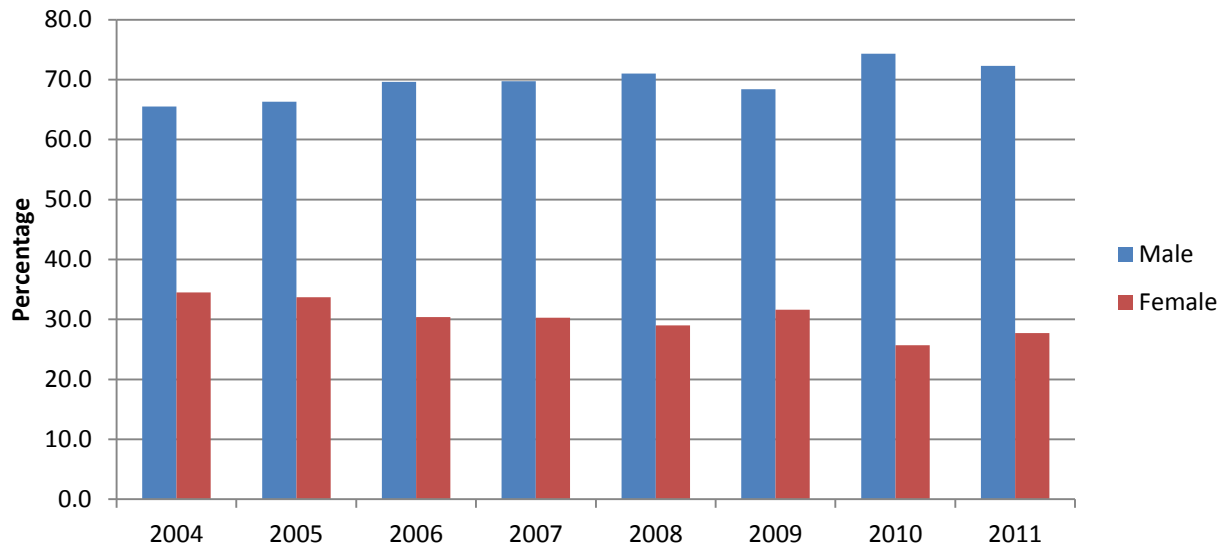


Figure 2 Percentage poisoning deaths, by gender and by year of death, NDRDI 2004 to 2011 (N=2,745)

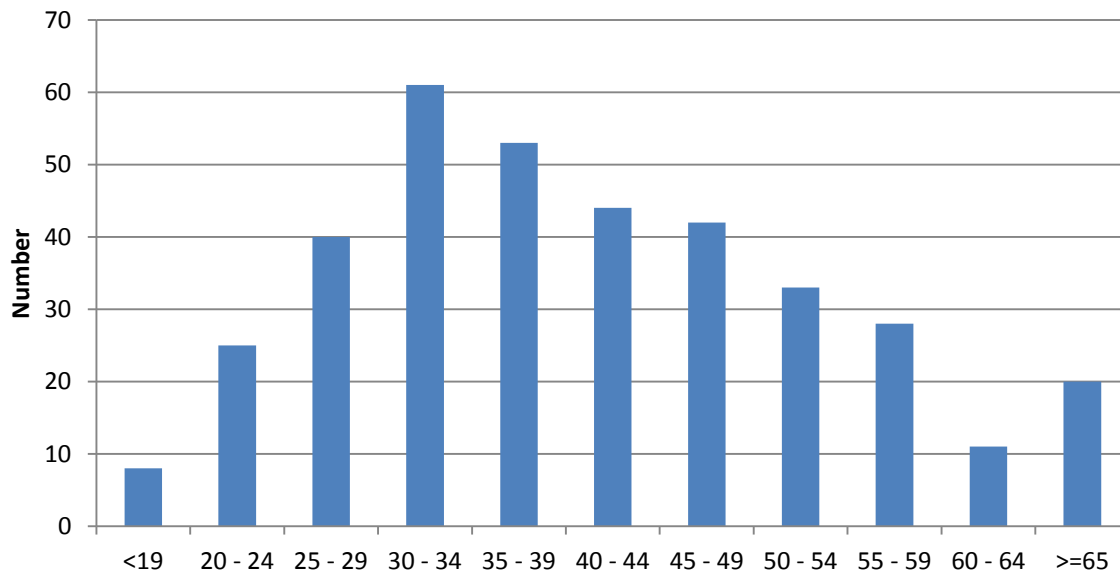


Figure 3 Poisoning deaths, by age group, NDRDI 2011 only (N=365)

Table 2 Poisoning deaths, by median age and by gender, NDRDI 2004 to 2011 (N=2,744)

	2004	2005	2006	2007	2008	2009	2010	2011
Median age in years	40	39	36	36	38	38	40	39
Age range*	20–68	18–65	20–64	19–67	21–65	22–67	21–67	22–65
Median age – Male	36	36	35	34	36	36	37	38
Median age – Female	47	46	43	43	46	47	49	45

*Age range presented is the 5th to the 95th percentile (90% of cases are included within this range)

Table 3 Single and polysubstance poisoning deaths, NDRDI 2004 to 2011 (N=2,745)

	2004	2005	2006	2007	2008	2009	2010	2011
Total poisonings	267	300	326	389	386	374	338	365
Single substance (n=1,425)	152 (56.9)	167 (55.7)	190 (58.3)	212 (54.5)	196 (50.8)	188 (50.3)	170 (50.3)	150 (41.1)
Polysubstance (n=1,320)	115 (43.1)	133 (44.3)	136 (41.7)	177 (45.5)	190 (49.2)	186 (49.7)	168 (49.7)	215 (58.9)

Table 4 Combinations of drugs involved in poisoning deaths, NDRDI 2004 to 2011 (N=2,745)

	2004	2005	2006	2007	2008	2009	2010	2011
All poisoning deaths	267	300	326	389	386	374	338	365
Single substances								
Alcohol alone	61	51	54	86	81	61	78	61
Opiates alone	33	34	53	54	54	60	48	37
Analgesic (including an analgesic containing an opiate compound)	22	24	16	6	10	10	7	14
All other specified single substances	36	58	67	66	51	57	37	38
Polysubstances								
Polysubstances (including opiates such as heroin, methadone)	41	64	80	91	120	121	96	128
Polysubstances (including analgesics containing an opiate compound)	28	31	15	16	11	14	25	32
Polysubstances (excluding opiates)	35	29	26	58	50	34	33	44
Psychoactive medication with alcohol	11	9	15	12	9	17	14	11

Table 5 All drugs involved in poisoning deaths, NDRDI 2004 to 2011 (N=2,745)

	2004	2005	2006	2007	2008	2009	2010	2011	% Total
All deaths*	267	300	326	389	386	374	338	365	100
Alcohol	125	116	111	173	155	142	152	136	40.4
Heroin	29	47	68	80	91	115	72	60	20.5
Methadone	40	43	61	55	80	69	60	113	19
Other opiate [†]	62	69	55	54	47	52	58	78	17.3
Cocaine	19	36	53	66	60	53	21	23	12.1
MDMA	13	10	7	19	7	~	~	11	~
Diazepam	31	41	64	61	66	80	67	129	19.6
Other benzodiazepine	28	25	29	42	38	30	34	69	10.7
Flurazepam	18	13	23	21	20	24	27	48	7.1
Other prescription medication [§]	42	37	39	61	62	59	74	85	16.7
Antidepressant	54	53	43	48	85	67	66	96	18.7
Non-opiate analgesic	13	23	12	19	18	16	15	19	4.9
Other [‡]	9	22	21	26	31	50	37	40	8.6

*This is a multi-response table taking account of illicit use of up to six drugs. Therefore numbers and percentages in columns may not add up to totals shown as individual cases may use more than one drug or substance.

[†] Includes morphine, codeine, unspecified opiate-type drug, other opiate analgesic.

[§] Includes non-benzodiazepine sedatives, anti-psychotics, cardiac and all other types of over-the-counter medication.

[‡] includes solvents, insecticides, herbicides, other amphetamines, hallucinogens, cannabis, barbiturates, novel psychoactive substances and other chemicals.

~ Less than five cases.

Of the 166 individual deaths in 2011 in which benzodiazepines were implicated, 69 cases involved two or more types of benzodiazepine (Table 6). However the total count for all benzodiazepines in the multi-response table is equal to 246 (Table 5).

Table 6 Total number of deaths where any benzodiazepine was implicated, NDRDI 2004 to 2011 (N=802)

	2004	2005	2006	2007	2008	2009	2010	2011
Total deaths; any benzodiazepine implicated	64	65	91	97	103	113	103	166
<i>Of these</i>								
One benzodiazepine implicated	51	54	70	74	84	92	79	97
Two or more benzodiazepines implicated	13	11	21	23	19	21	24	69

Table 7 Poisoning deaths by place of residence, by drugs task force area, NDRDI 2004 to 2011 (N=2,745)

	2004	2005	2006	2007	2008	2009	2010	2011
North Eastern RDTF	18	20	25	28	29	22	23	41
Southern RDTF	19	22	21	32	31	24	19	37
South East RDTF	26	23	22	40	40	33	37	32
North Inner City LDTF	14	18	13	14	24	19	21	29
South Western RDTF	11	14	17	19	23	19	24	24
Mid West RDTF	15	18	13	18	19	37	28	24
Midlands RDTF	12	15	17	17	21	26	19	21
North Dublin City and County RDTF	10	14	12	15	12	20	20	20
Dublin South Inner City LDTF	7	8	19	21	13	13	11	19
Western RDTF	17	19	18	33	23	23	21	16
East Coast RDTF	25	36	28	28	28	21	34	12
North West RDTF	14	13	10	8	13	17	7	10
Dublin North East LDTF	9	10	25	19	16	10	7	10
Cork LDTF	14	12	20	27	13	19	13	10
Tallaght LDTF	7	7	9	5	8	15	11	9
Finglas-Cabra LDTF	~	9	6	6	12	10	7	6
Ballymun LDTF	8	6	10	5	7	10	5	6
Blanchardstown LDTF	~	5	5	~	5	~	~	6
Clondalkin LDTF	9	10	6	~	9	6	6	5
Dun Laoghaire-Rathdown LDTF	16	13	16	17	14	13	19	5
Ballyfermot LDTF	5	~	7	6	7	~	~	~
Dublin 12 LDTF	11	6	~	9	11	~	~	~
Canal Communities LDTF	~	~	~	~	~	~	~	~
Bray LDTF	~	~	~	~	~	~	~	~
Other/unknown	8	11	18	29	19	18	12	17

~ Less than five cases.

Non-poisoning deaths

Of the 1,861 non-poisoning deaths in the period 2004–2011, the category of death was known for 1,779 (96%), of which 930 were due to traumatic causes and 849 were due to medical causes. These figures do not include deaths among alcohol-dependent people who were not drug users.

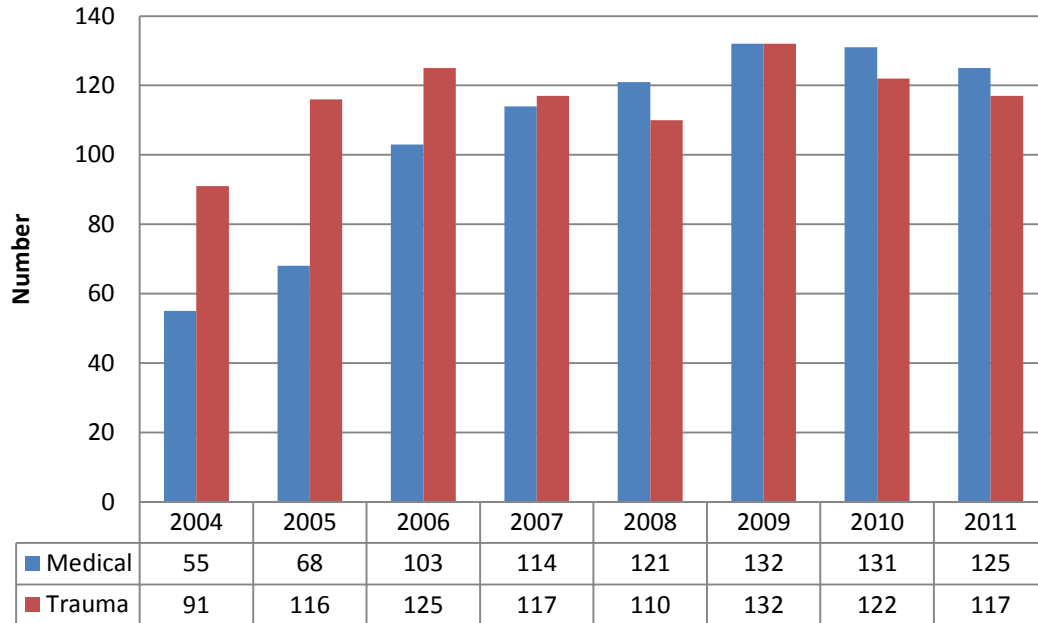


Figure 4 Non-poisoning deaths among drug users, NDRDI 2004 to 2011 (N=1,779)

Deaths due to trauma

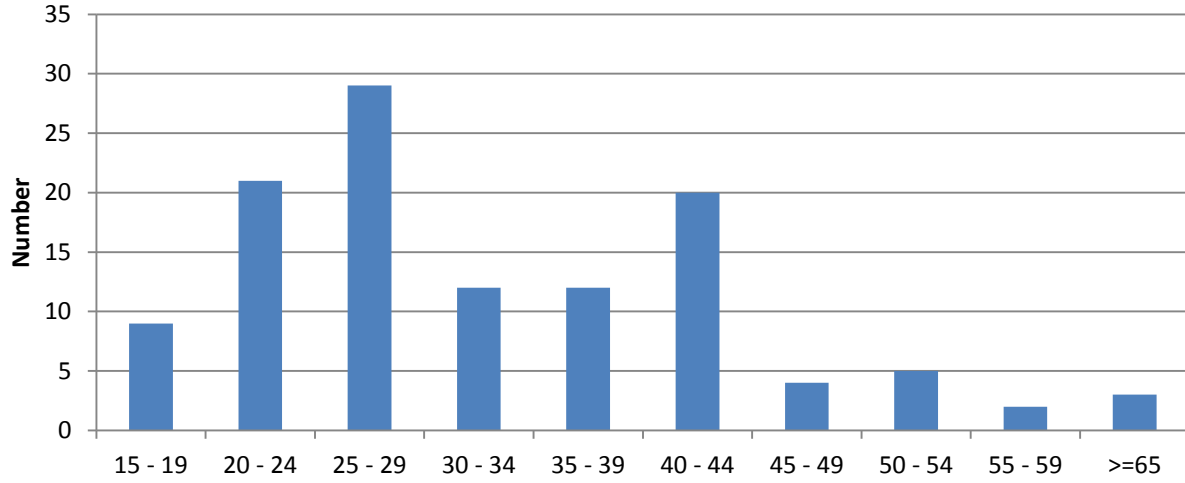


Figure 5 Deaths among drug users due to trauma, by age group, NDRDI 2011 only (N=117)

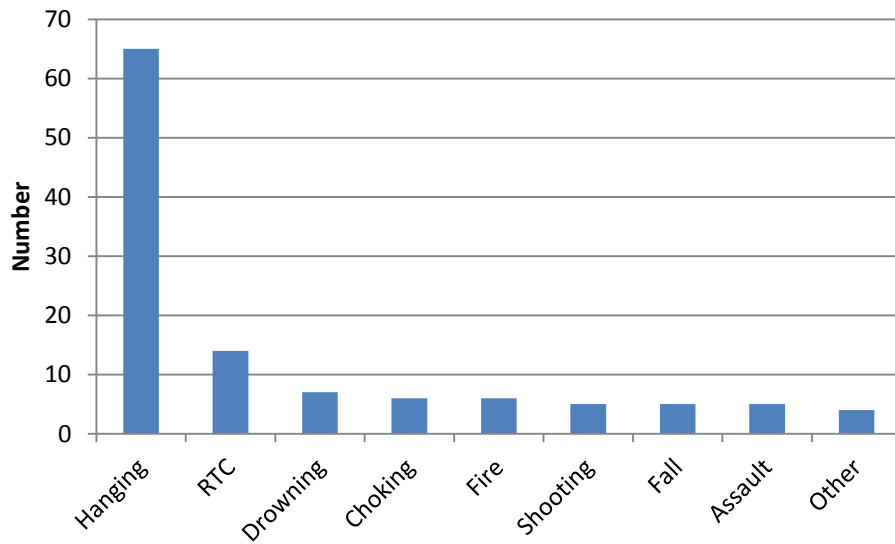


Figure 6 Deaths among drug users due to trauma, by type of death, NDRDI 2011 only (N=117)

Deaths due to medical causes

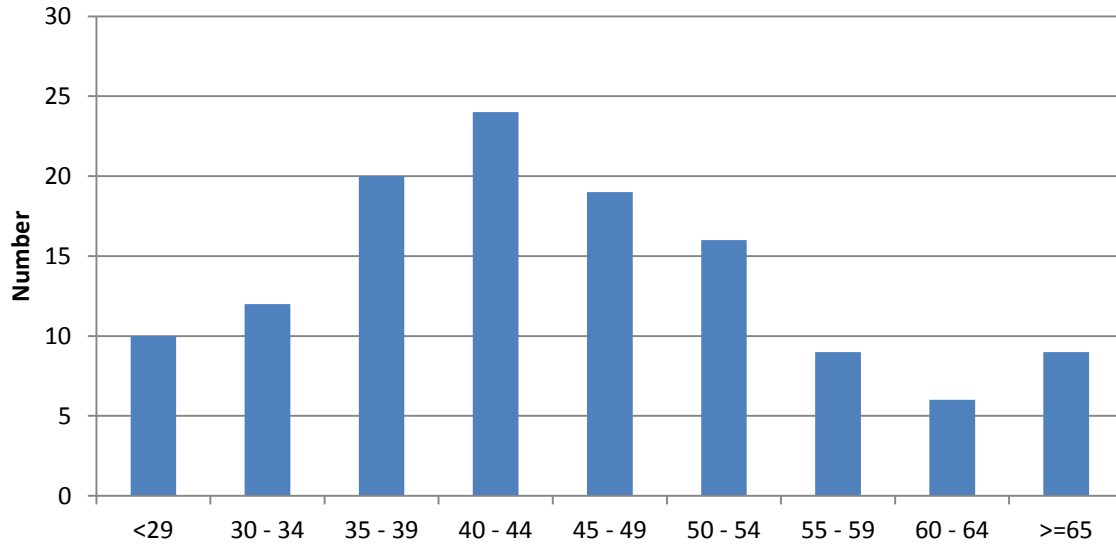


Figure 7 Deaths among drug users due to medical causes, by age group, NDRDI 2011 only (N=125)

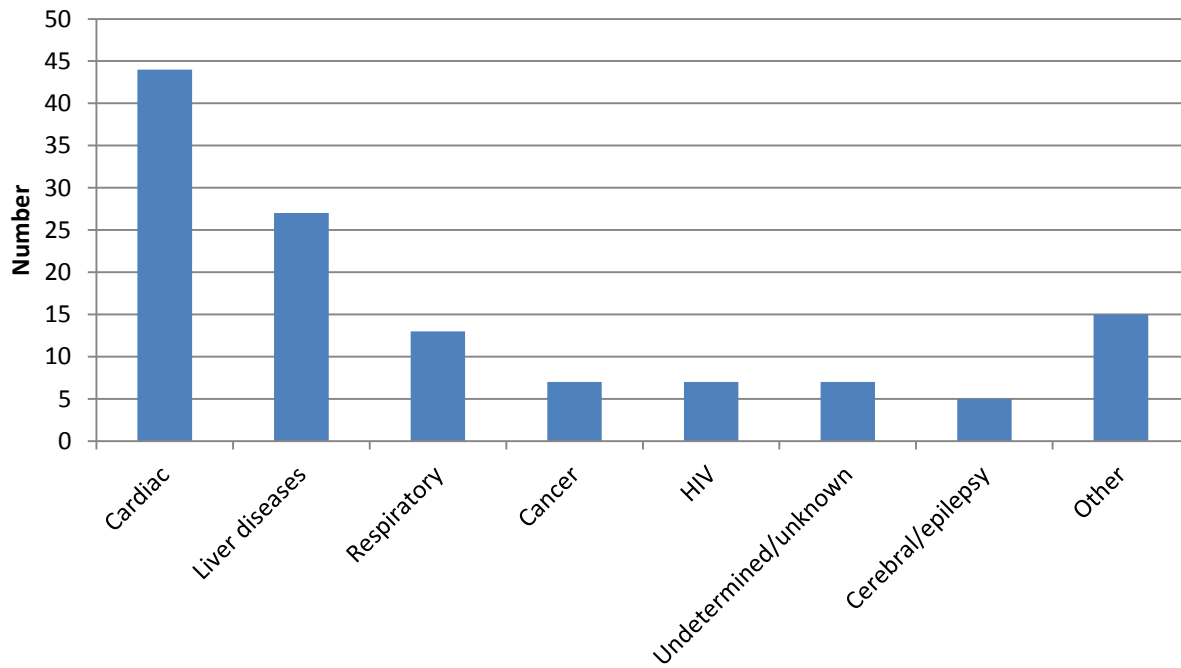


Figure 8 Deaths among drug users due to medical causes, by type, NDRDI 2011 only (N=125)

References

1. Department of Tourism Sport and Recreation (2001) *Building on experience: National Drugs Strategy 2001–2008*. Dublin: Stationery Office.
2. Lynn E, Lyons S, Walsh S and Long J (2009) *Trends in deaths among drug users in Ireland from traumatic and medical causes, 1998 to 2005*. HRB Trends Series 8. Dublin: Health Research Board.
3. Lyons S, Lynn E, Walsh S and Long J (2008) *Trends in drug-related deaths and deaths among drug users in Ireland, 1998 to 2005*. HRB Trends Series 4. Dublin: Health Research Board.
4. Bellerose D, Lyons S, Carew AM, Walsh S and Long J (2010) *Problem benzodiazepine use in Ireland: treatment (2003 to 2008) and deaths (1998 to 2007)*. HRB Trends Series 9. Dublin: Health Research Board.
5. Darke S, Degenhardt L and Mattick R (2007) *Mortality amongst illicit drug users: epidemiology, causes and intervention*. Cambridge: Cambridge University Press.
6. Webb L, Oyefeso A, Schifano F, Cheeta S, Pollard M and Ghodse HA (2003) Cause and manner of death in drug-related fatality: an analysis of drug-related deaths recorded by coroners in England and Wales in 2000. *Drug and Alcohol Dependence*, 72(1): 67–74.
7. Darke S, Kaye S and Duflou J (2004) Cocaine-related fatalities in New South Wales, Australia 1993–2002. *Drug and Alcohol Dependence*, 77(2): 107–114.
8. Quaglio G, Talamini G, Lechi A, Venturini L, Lugoboni F, Mezzelani P (2001) Study of 2708 heroin-related deaths in north-eastern Italy 1985–98 to establish the main causes of death. *Addiction*, 96(6): 1127–1137.
9. Karch S (2002) *Karch's pathology of drug abuse*. 3rd edition. Boca Raton, FL: CRC Press.
10. Baldacchino A and Corkery J (2006) *Comorbidity: perspectives across Europe*. London: European Collaborating Centres in Addiction Studies.
11. Darke S, Duflou J and Torok M (2009) Toxicology and circumstances of completed suicide by means other than overdose. *Journal of Forensic Sciences*, 54(2): 490–494.
12. Farrell M, Neeleman J, Griffiths P and Strang J (1996) Suicide and overdose among opiate addicts. *Addiction*, 91(3): 321–323.
13. WHO (2002) *The world health report 2002: reducing risks, promoting healthy life*. Geneva: World Health Organization.

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