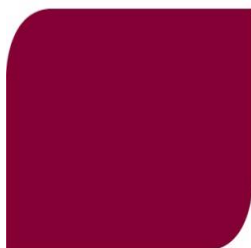
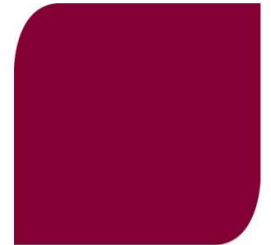


Drug-related deaths and deaths among drug users in Ireland



2012 figures from the
National Drug-Related Deaths Index

December 2014

Summary of 2012 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 2004–2012. The figures in this update supersede all previously published figures.^a

Overview

- In the nine-year period 2004–2012 a total of 5,289 deaths by drug poisoning and deaths among drug users met the criteria for inclusion in the NDRDI database. Of these deaths, 3,112 were due to poisoning and 2,177 were deaths among drug users (non-poisoning) (Table 1).
- There were 633 deaths in 2012, compared to 645 in 2011. Despite this decrease the overall trend for the reporting period is upwards (Table 1). The 2012 figure is likely to be revised upwards when new data become available.
- Deaths due to polydrug use have increased by 60% over the reporting period from 118 in 2004 to 189 in 2012 (Figure 3).

Poisoning deaths in 2012

- The annual number of poisoning deaths decreased from 387 in 2011 to 350 in 2012 (Table 1).
- Males accounted for the majority of deaths in each year since 2004; 74% of all poisoning deaths in 2012 were male (Figure 1).
- The median age of those who died in 2012 was 40 years, similar to previous years (Table 2).
- Over half (54%) of all poisoning deaths in 2012 involved more than one drug (polydrug use) (Figure 3 and Table 3).
- Alcohol was involved in 36% of poisoning deaths in 2012, more than any other single drug (Table 5). Alcohol alone was responsible for 22% of poisoning deaths in 2012, this is an increase from 17% in 2011 (Table 3).
- Methadone was implicated in a quarter of poisonings in 2012 (Table 5). The majority of these deaths (87%) where methadone was implicated were polydrug poisonings.
- Over a third (35%) of poisonings in 2012 involved benzodiazepines (Table 6).
- The number of poisoning deaths in which heroin was implicated continues to decline with 61 deaths in 2012 compared to 65 in 2011, a decrease of 6% (Table 5).
- In 2012, three quarters (75%) of poisoning deaths involved alcohol and/or prescription drugs only.
- There has been a slight decrease in the number of deaths involving antidepressants from 88 in 2011 to 77 in 2012 (Table 7), however over the reporting period the trend is upwards. Thirteen per cent of the deaths involving antidepressants in 2012 had more than one antidepressant implicated. Females accounted for almost half (46%) of these deaths in 2012 involving antidepressants.
- One in five (21%) poisoning deaths in 2012 involving 'other prescription drugs'. The majority of 'other prescription drugs' were implicated in polydrug poisonings (Table 8).
- Over a third (37%) of those who died of a poisoning death in 2012 had a history of mental illness.

Non-poisoning deaths in 2012

- The number of non-poisoning deaths recorded among drug users increased to 283, compared to 258 in 2011 (Table 1). These deaths are categorised as being due either to trauma, or to medical causes.
- Over a third (38%) had a history of mental illness.

Deaths due to trauma

- The number of deaths due to trauma increased in 2012 to 138 deaths from 124 in 2011, an increase of 11% (Figure 4).
- The majority (100, 72%) of those who died from traumatic causes in 2012 were aged under 39 years (Figure 6). The median age was 29 years. As in previous years, the majority (113, 82%) of those who died due to trauma were male.

^a Please note that previously reported figures for the years 2004–2011 have been updated to include new data. Similarly, figures for 2012 will be revised in the future when new data become available.

- The most common causes of death due to trauma in 2012 were hanging (72, 52%) and drowning (20, 14%) (Figure 7).
- Over half (72, 52%) of those who died from traumatic causes in 2012 had a history of mental illness.

Deaths due to medical causes

- The number of deaths due to medical causes increased by 8% in 2012 to 143 deaths from 132 in 2011 (Figure 4).
- The majority (96, 67%) of those who died from medical causes in 2012 were aged between 35 and 59 years (Figure 8). The median age was 46 years. Males accounted for 70% (100) of those who died due to medical causes in 2012.
- The most common medical causes of death in 2012 were cardiac events (44, 31%) and liver diseases (23, 16%) (Figure 9).

This document may be cited as: Health Research Board (2014) Drug-related deaths and deaths among drug users in Ireland: 2012 figures from the National Drug-Related Deaths Index. Available at: www.drugsandalcohol.ie/23003 and at www.hrb.ie/publications.

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)

Other prescription drugs: include non-benzodiazepine sedatives such as Z drugs (esp. Zopiclone), antipsychotics, antiepileptic's, anxiety drugs and other prescription drugs.

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 2012, 5,289 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 2004–2011 have been updated to include new data. Similarly, figures for 2012 will be revised in the future when new data become available. The NDRDI submits an annual report to the EMCDDA on a subset of the data on poisoning deaths which differ to the data in this report. For further details see the national report; http://www.drugsandalcohol.ie/php/annual_report.php

Table 1 Number of deaths, by year, NDRDI 2004 to 2012 (N=5,289)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
All deaths	432	505	561	626	626	656	605	645	633
Poisonings (3,112)	267	300	325	382	386	374	341	387	350
Non-poisoning (2,177)	165	205	236	244	240	282	264	258	283

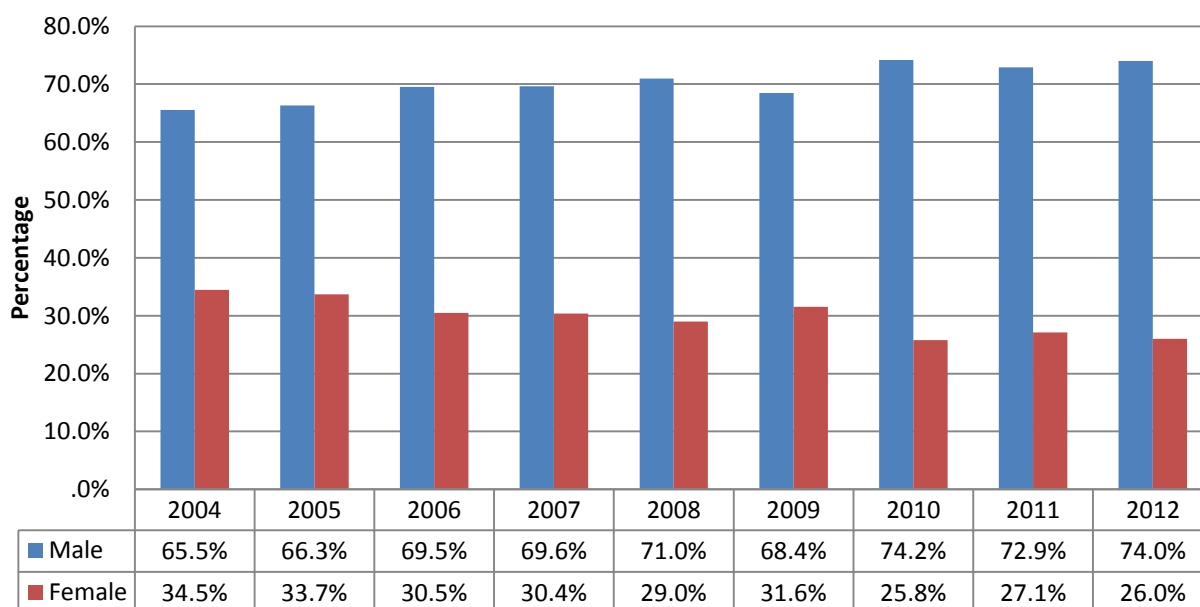


Figure 1 Percentage poisoning deaths, by gender and by year of death, NDRDI 2004 to 2012 (N=3,112)

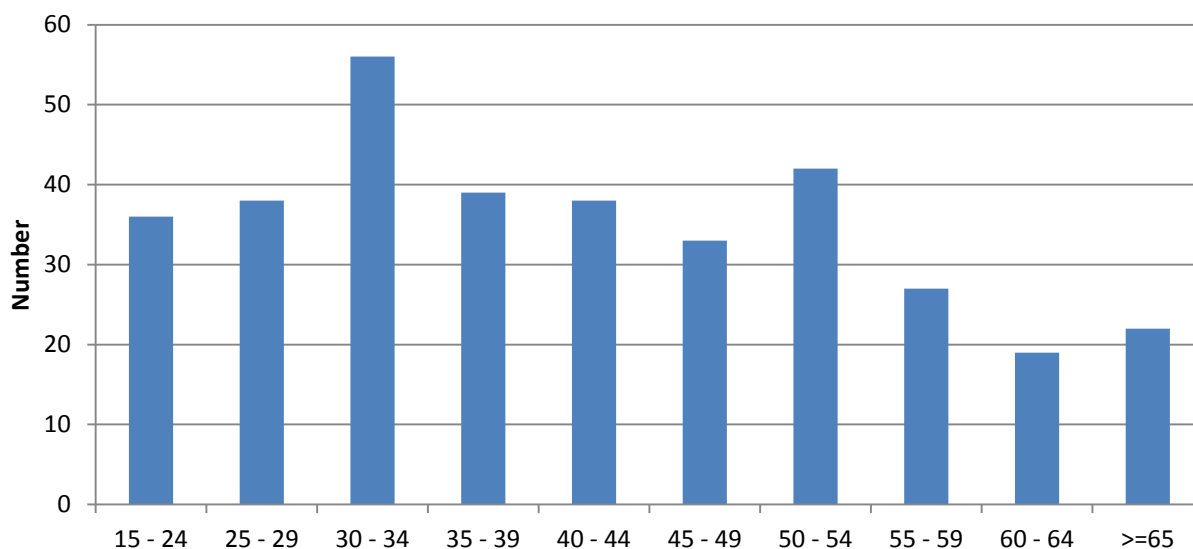


Figure 2 Poisoning deaths, by age group, NDRDI 2012 only (N=350)

Table 2 Poisoning deaths, by median age and by gender, NDRDI 2004 to 2012 (N=3,112)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Median age in years	40	39	36	35	38	38	40	39	40
Age range*	20-68	18-65	20-64	19-67	21-65	22-67	21-67	22-65	22-67
Median age-male	36	36	35	33	36	36	37	38	38
Median age-female	47	46	43	43	46	47	49	45	49

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

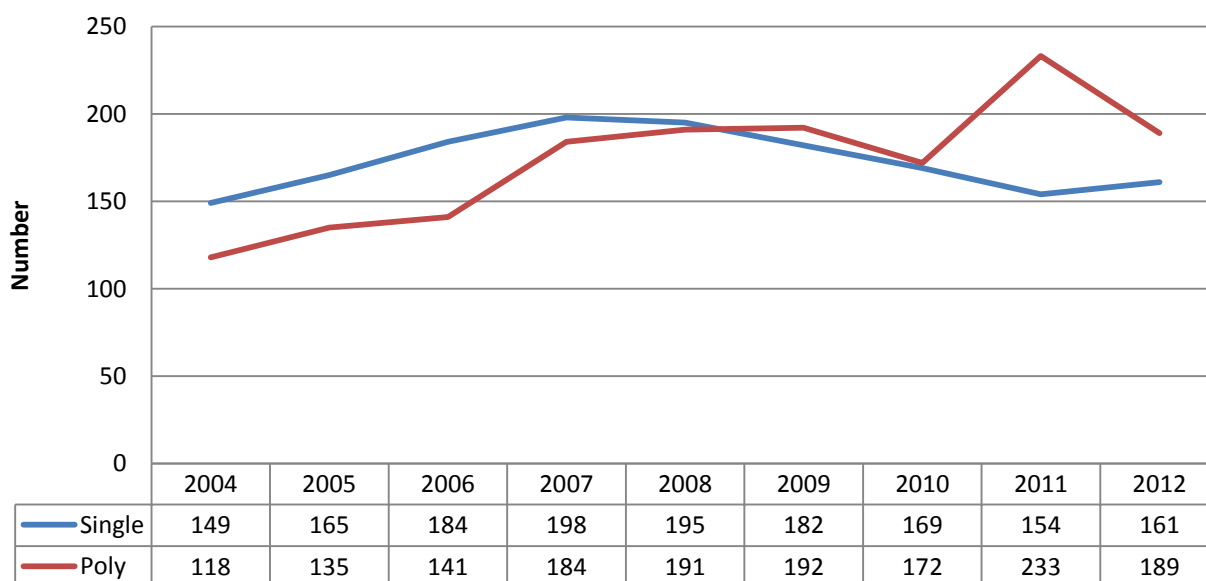


Figure 3 Single and polydrug poisoning deaths, NDRDI 2004 to 2012 (N=3,112)

Table 3 Combinations of drugs involved in poisoning deaths, NDRDI 2004 to 2012 (N=3,112)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
All poisoning deaths	267	300	325	382	386	374	341	387	350
Single substance									
Alcohol alone	61	51	55	79	81	61	78	65	76
Opiate alone	33	34	47	51	53	56	46	34	24
Analgesic (inc an analgesic containing an opiate compound)	22	24	15	6	10	10	7	15	19
All other specified single substances	33	56	67	62	51	55	38	40	42
Polysubstances									
Polysubstances including opiates (such as heroin, methadone)	41	64	84	94	121	125	99	140	115
Polysubstances including analgesics containing an opiate compound	28	31	16	16	11	14	25	33	25
Polysubstances excluding opiates	38	31	26	62	50	36	34	48	39
Psychoactive medication with alcohol	11	9	15	12	9	17	14	12	10

In 2009, when laboratory standards became available, we first started to see novel psychoactive substance (NPS) drugs being implicated in drug-related deaths. The number of deaths decreased from seven deaths involving NPS in 2011 to 5 deaths involving NPS in 2012. The majority of these deaths involved polydrugs. NPS drugs are included in the stimulants drug group (Table 4).

Table 4 Multi response drug groups, NDRDI 2004 to 2012 (N=3,111^a)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	% Total
All poisoning deaths	267	300	325	382	386	374	341	387	350	100
Opiates [†]	131	159	182	189	218	236	191	263	220	57.5
Alcohol	125	116	111	166	155	142	153	147	126	39.9
Benzodiazepines	77	79	116	124	124	134	132	254	168	38.8
Antidepressants	54	53	43	48	87	67	67	100	87	19.5
Other prescription drugs [§]	42	41	39	61	62	59	74	86	97	18.0
Stimulants [‡]	32	46	61	85	67	60	28	42	40	14.8
Others [†]	22	46	33	45	49	66	53	64	57	13.9

^aThis 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.

[†] The cause of death in one case was multi-drug toxicity with no information on what drugs were involved thus excluded from multianalysis.

[‡] Includes heroin, methadone, morphine, codeine, unspecified opiate-type drug, other opiate analgesic.

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

[‡] Includes cocaine, MDMA and Novel Psychoactive Substances.

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

Table 5 Main specific drugs involved in poisoning deaths, NDRDI 2004 to 2012 (N=3,112)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	% Total
All deaths*	267	300	325	382	386	374	341	387	350	100
Alcohol	125	116	111	166	155	142	153	147	126	39.9
Heroin	29	47	67	80	91	115	73	65	61	20.2
Methadone	40	43	60	55	80	69	60	118	86	19.6
Diazepam	31	41	64	61	66	80	68	135	87	20.3
Flurazepam	18	13	23	21	20	24	28	50	29	7.3
Cocaine	19	36	54	66	60	53	21	24	24	11.5
MDMA	13	10	7	19	7	~	~	11	11	2.6
Citalopram	13	12	7	13	19	20	19	31	21	4.9
Zopiclone	5	~	7	6	10	12	18	22	22	3.3
Olanzapine	~	~	~	9	9	8	14	10	22	2.6

*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.

~ Less than five cases.

Of the 123 individual deaths in 2012 in which benzodiazepines were implicated, 40 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 168 (Table 4).

Table 6 Total number of deaths where any benzodiazepine was implicated, NDRDI 2004 to 2012 (N=934)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
All NDRDI poisonings	267	300	325	382	386	374	341	387	350
Individual deaths where BZD implicated (% of all poisonings)	64 (24)	65 (21.7)	91 (28)	97 (25.4)	103 (26.7)	113 (30.2)	105 (30.8)	173 (44.7)	123 (35.1)
Poly drugs involved	61	64	88	96	103	112	105	170	121
More than one BZD implicated	13	11	21	23	19	21	25	70	40

Of the 77 individual deaths in 2012 in which antidepressants were implicated, 10 deaths involved more than one type of antidepressants (Table 7). The total count for all antidepressants in the multi-response table is equal to 87 (Table 4). Citalopram is the most common antidepressant implicated in these deaths and was implicated in over a quarter (21, 27.3%) of individual deaths involving antidepressants in 2012 (Table 5).

Table 7 Total number of deaths where any antidepressant was implicated, NDRDI 2004 to 2012 (N=539)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
All NDRDI poisonings	267	300	325	382	386	374	341	387	350
Individual deaths where antidepressants implicated (% of all poisonings)	46 (17.2)	46 (15.3)	40 (12.3)	46 (12)	76 (19.7)	59 (15.8)	61 (17.9)	88 (22.7)	77 (22)
Poly drugs involved	42	35	32	40	63	48	52	81	66
<i>More than one antidepressant implicated</i>	8	7	~	~	10	5	5	11	10

'Other prescription drugs' were implicated in 21% of poisoning deaths in 2012, the majority (60, 81%) involved polydrug poisonings (Table 8). Antipsychotic drugs contributed to 29 (39.2%) of these deaths and the main drug implicated in these deaths involving antipsychotic drugs was Olanzapine (22, 75.9) (Table 5).

Z-drugs were implicated in 27 (36.5%) of individual deaths involving other prescription drugs, Zopiclone being the main Z-drug, implicated in 22 (81.5%) of deaths involving Z-drugs in 2012 (Table 5).

Table 8 Individual deaths involving 'other prescription drugs', NDRDI 2004 to 2012 (N=459)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
All NDRDI poisonings	267	300	325	382	386	374	341	387	350
Individual deaths where 'other prescription drugs' implicated (% of all poisonings)	35 (13.1)	33 (11)	37 (11.4)	47 (12.3)	56 (14.5)	46 (12.3)	60 (17.6)	71 (18.3)	74 (21.1)
<i>of which involved:</i>									
- Antipsychotic drugs	6	~	~	14	11	11	17	22	29
- Z - drugs	10	6	13	7	14	14	24	31	27
Poly drugs involved	27	23	23	39	50	41	52	68	60
More than one 'other prescription drugs' involved	5	5	~	8	6	8	12	13	21

Table 9 Poisoning deaths by place of residence, by drugs task force area, NDRDI 2004 to 2012 (N=3,112)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
South East RDTF	26	23	22	39	40	33	37	34	42
North Eastern RDTF	18	20	25	27	29	22	23	44	30
Southern RDTF	19	22	21	30	31	24	19	37	27
Cork LDTF	14	12	20	27	13	19	14	10	23
North Inner City LDTF	14	18	13	14	24	19	21	30	20
Mid-West RDTF	15	18	13	18	19	37	29	25	19
South Western RDTF	11	14	17	19	23	19	24	25	18
North West RDTF	14	13	10	8	13	17	7	11	18
Western RDTF	17	19	17	33	23	23	21	19	17
Midlands RDTF	12	15	17	17	21	26	19	26	14
Dublin North East LDTF	9	10	25	19	16	10	7	10	14
Tallaght LDTF	7	7	9	5	8	15	11	9	14
North Dublin City and County RDTF	10	14	12	15	12	20	20	20	13
Dublin South Inner City LDTF	7	8	19	21	13	13	11	20	13
Dun Laoghaire-Rathdown LDTF	16	13	16	17	14	13	19	6	11
Finglas-Cabra LDTF	~	9	6	6	12	10	7	6	10
Clondalkin LDTF	9	10	6	~	9	6	6	5	6
East Coast RDTF	6	19	11	10	11	~	12	8	~
Ballyfermot LDTF	5	~	7	6	7	~	~	~	~
Blanchardstown LDTF	~	5	5	~	5	~	~	6	~
Canal Communities LDTF	~	~	~	~	~	~	~	~	~
Bray LDTF	~	~	~	~	~	~	~	~	~
Ballymun LDTF	8	6	10	5	7	10	5	6	~
Dublin 12 LDTF	11	6	~	9	11	~	~	~	~
Other/unknown	8	11	18	26	19	18	13	18	16

~ Less than five cases.

Non-poisoning deaths

Of the 2,177 non-poisoning deaths in the period 2004–2012, the category of death was known for 2,092 (96%), of which 1,089 were due to traumatic causes and 1,003 were due to medical causes. These figures do not include deaths among alcohol-dependent people who were not drug users.

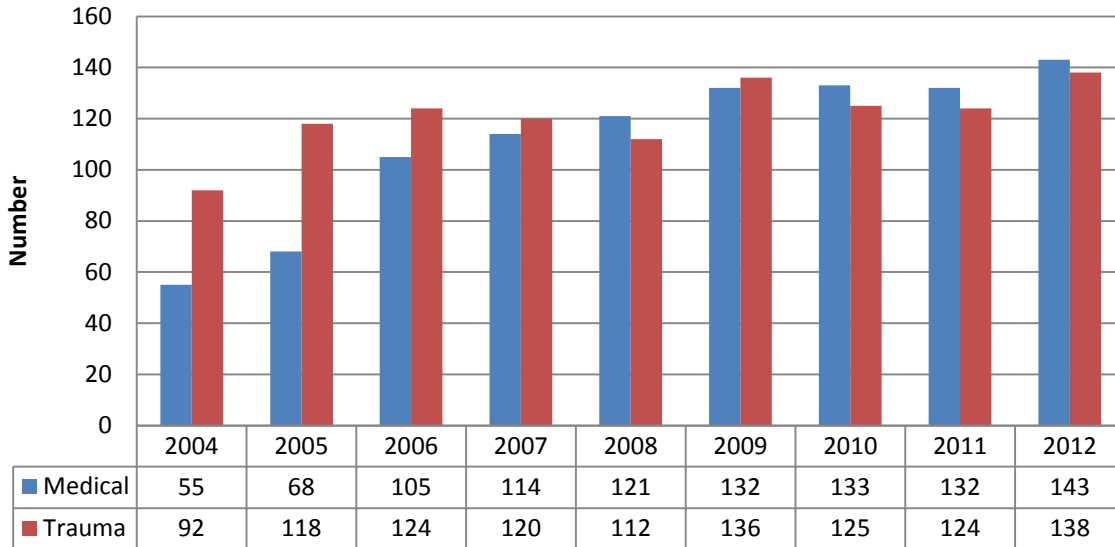


Figure 4 Non-poisoning deaths among drug users, NDRDI 2004 to 2012 (N=2,092)

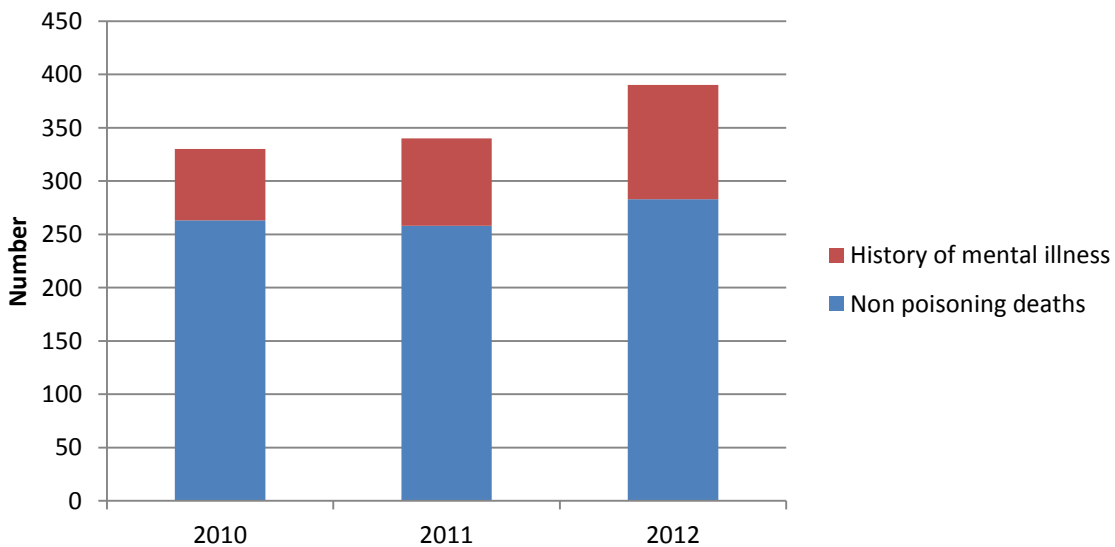


Figure 5 Non-Poisoning deaths among drug users, by history of mental illness, NDRDI 2010 to 2012 (N=804)

Deaths due to trauma

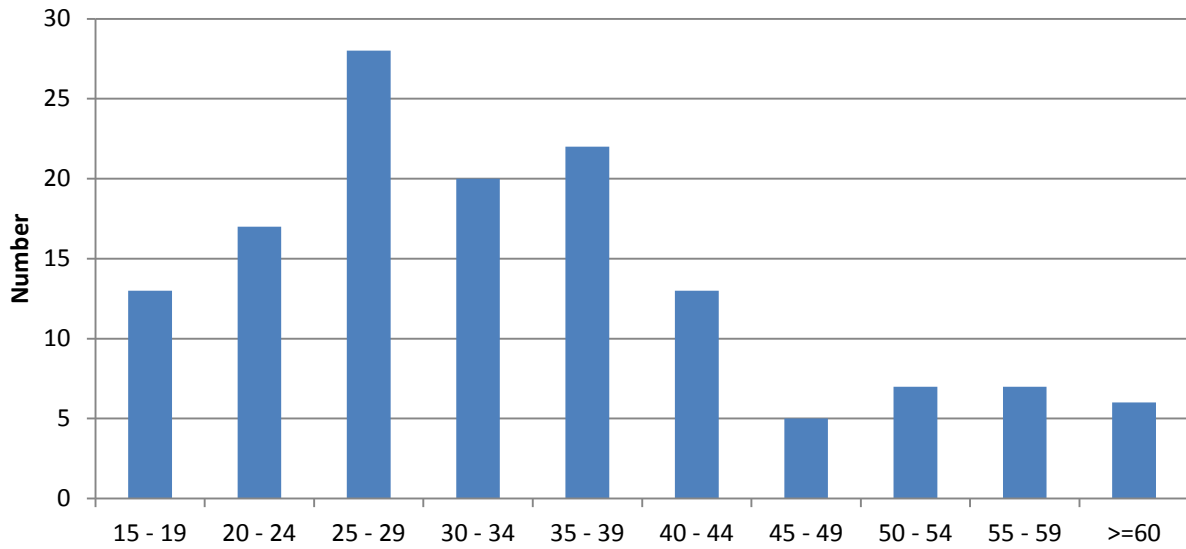


Figure 6 Deaths among drug users due to trauma, by age group, NDRDI 2012 only (N=138)

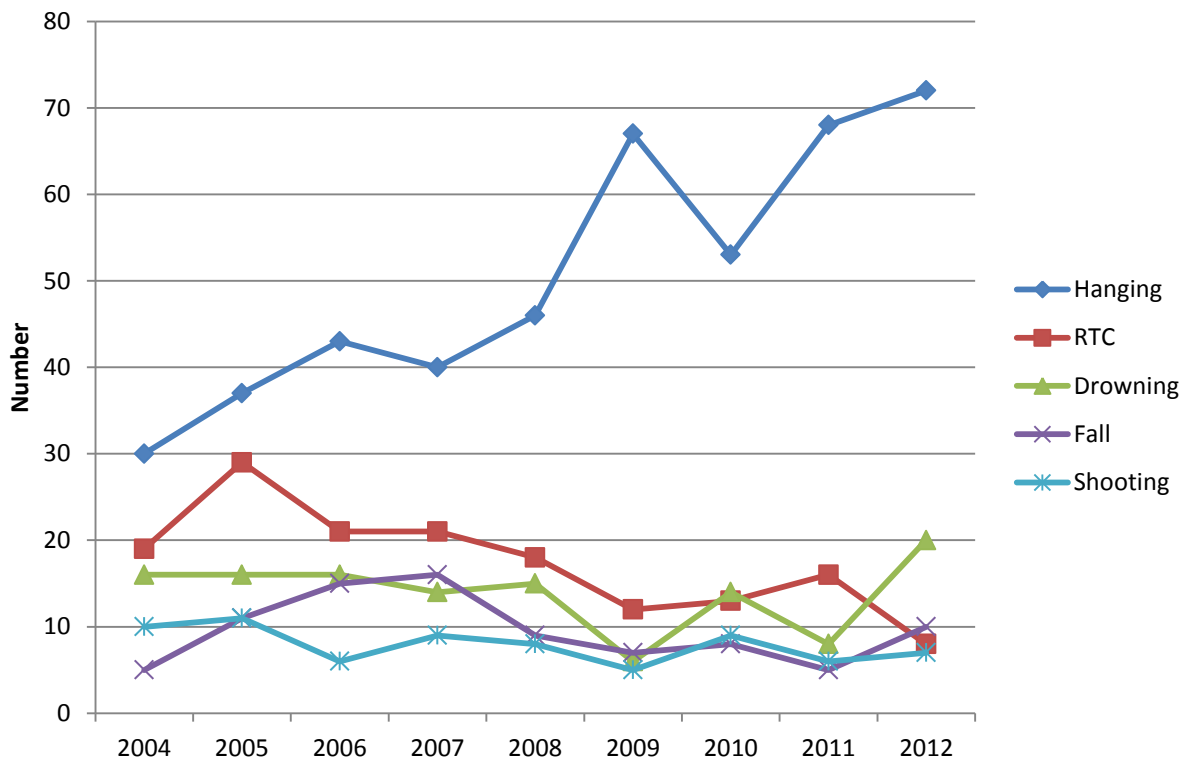


Figure 7 Deaths among drug users due to trauma, by main type of death, NDRDI 2004 to 2012 (N=1089)

Deaths due to medical causes

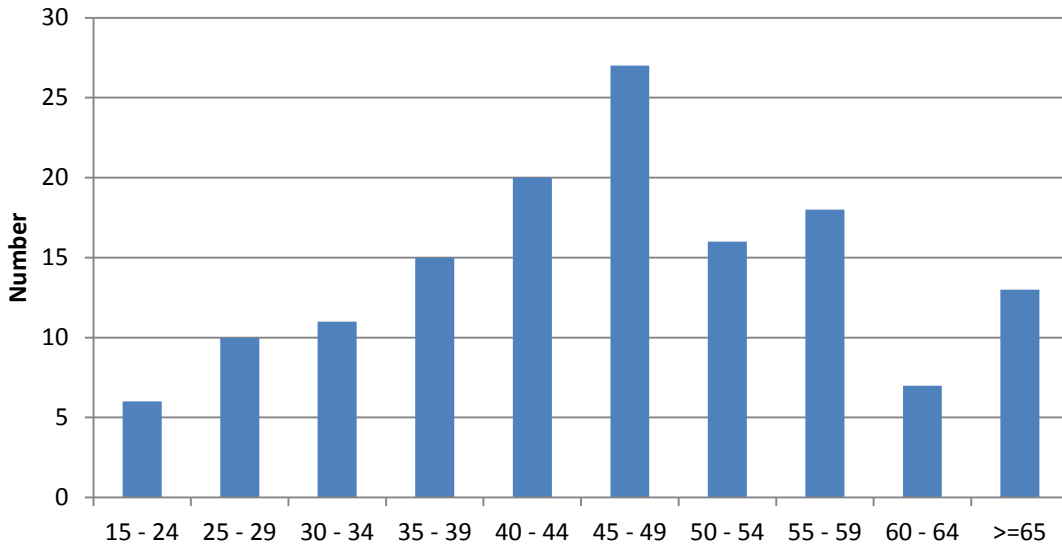


Figure 8 Deaths among drug users due to medical causes, by age group, NDRDI 2012 only (N=143)

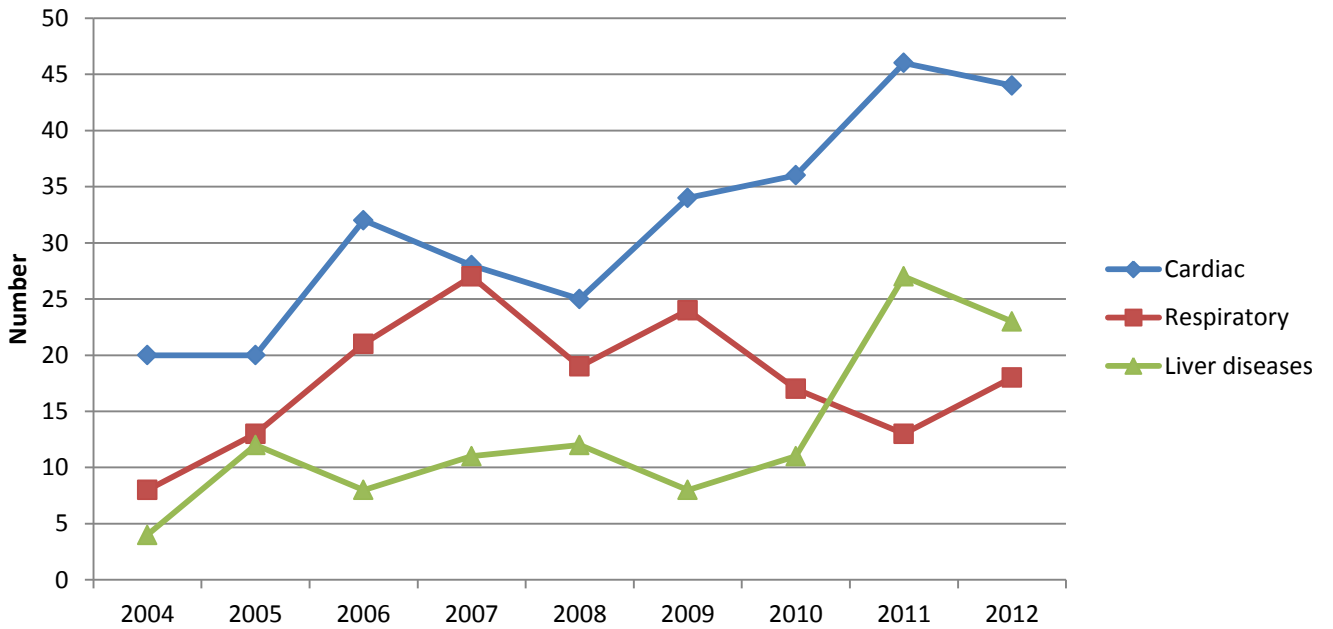


Figure 9 Deaths among drug users due to medical causes, by main type, NDRDI 2004 to 2012 (N=1,003)

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