

Drug-induced deaths in Australia 2007



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Background

- In Australia, “drug induced deaths” are deaths where drugs are determined to be the main cause of death (1).
- In this bulletin, drug-induced deaths include the following categories of death:
 - Intentional self-harm (i.e. suicide) by drugs ;
 - Assault (i.e. homicide) by drugs;
 - Accidental drug-induced deaths either from poisoning by drugs, or from mental and behavioural disorders due to drug use; and
 - Drug deaths where the intent of poisoning was undetermined.
- In accordance with the Australian Bureau of Statistics definition, drug-induced deaths in this bulletin, do not include deaths related to alcohol or tobacco use (1).
- The aim of this bulletin is to examine;
 - the number of drug-induced deaths across all ages in Australia;
 - the number of drug-induced deaths among those aged between 15 and 54;
 - whether the deaths were determined by the coroner as being accidental overdose, intentional self-harm, assault or of undetermined intent;
 - deaths by drug type; and
 - the number of accidental opioid¹ deaths occurring;
 - i) in each jurisdiction;
 - ii) by age; and
 - iii) by gender
- This data is based on drug-induced deaths that were registered in 2007, rather than deaths that occurred in 2007.
- The Australian Bureau of Statistics (ABS) collates and manages the national causes of death database, utilising information from the National Coronial Information System (NCIS). Prior to 2003, ABS staff visited coronial offices to manually update information about the cause of death for records that had not yet been loaded onto the NCIS. Since 2003 the ABS has progressively ceased visiting jurisdictional coronial offices, therefore ceasing manual updates of deaths that were not already included on the NCIS.
- For the first time in 2006, the ABS relied solely on the data contained on NCIS at the time the ABS ceased processing the deaths data.
- The change in methodology in the collation of deaths data makes comparisons to earlier overdose bulletins published by the National Drug and Alcohol Research Centre difficult (2, 3).

¹ No further analysis is done on other drug-related deaths as numbers are too small.



Background continued...

- In particular this change has a number of implications for the reporting and interpretation of deaths data that should be noted:
 - Table 1 shows the number of ‘open’ cases by jurisdiction, which have been coded ‘cause unknown’. The high number of these cases is likely to lead to a decrease in the number of drug-induced deaths reported in comparison to previous years. Figures for ‘open cases’ in NSW and QLD are higher than those recorded for 2006.
 - Opioid-related deaths in NSW and QLD are most likely to be affected given that both jurisdictions have recorded high numbers of opioid-related deaths during the period 2000 to 2005.
 - In order to minimise the impact of these changes, the ABS intend to release two revisions of deaths data, following the first release, to allow for the time between cases being finalised, and information being uploaded to the NCIS. The first revision of the 2007 causes of death data has been conducted, however, at the time of going to print no agreement has been reached as to when the Confidentialised Unit Record File for this revision will be released.
 - Therefore, the following findings relate to the first release of 2007 deaths data.

Table 1: Number of open coronial cases coded as unknown cause by jurisdiction, 2007

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUST
Unknown cause*	228	23	685	38	40	4	5	4	1027

Source: Australian Bureau of Statistics Technical Note 2: Coroner Certified Deaths, 3303.0 2007

Notes on interpretation

- The following findings relate to numbers of deaths recorded at the time of closure of the 2007 ABS deaths data file. These figures may not be complete as a proportion of deaths will not yet be uploaded to the NCIS.
- Appendix A records the ICD 10 codes on which these results are based.
- These findings should be interpreted in conjunction with the ABS Technical Note 2: Coroner Certified Deaths, 3303.0 2007, available on the ABS website:
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/3303.0Explanatory%20Notes12007?OpenDocument>



Findings

ALL DRUG-INDUCED DEATHS

- There were 976 deaths nationally among Australians of all ages in which drugs were determined to be the underlying cause of death and 743 among Australians aged 15 to 54 years (Table 2).
- Of these drug-induced deaths:
 - 512 (52%) were determined to be accidental drug-induced deaths among all Australians (Figure 1a) and 412 (55%) among Australians aged 15 to 54 years (Figure 1b) ;
 - 224 (23%) were determined to be due to intentional self-harm among all Australians (Figure 1a) and 138 (19%) among Australians aged 15 to 54 years (Figure 1b); and
 - 240 (25%) were recorded as drug-induced deaths where intent was undetermined among all Australians (Figure 1a) and 193 (26%) among Australians aged 15 to 54 years (Figure 1b).
- Drug induced deaths among Australians aged 15 to 54 years accounted for 76% (n=743) of drug-deaths among all Australians (n=976), with 24% (n=233) occurring among Australians aged 55 and over.

Table 2: All drug-induced deaths among Australians of all ages and those aged 15–54*

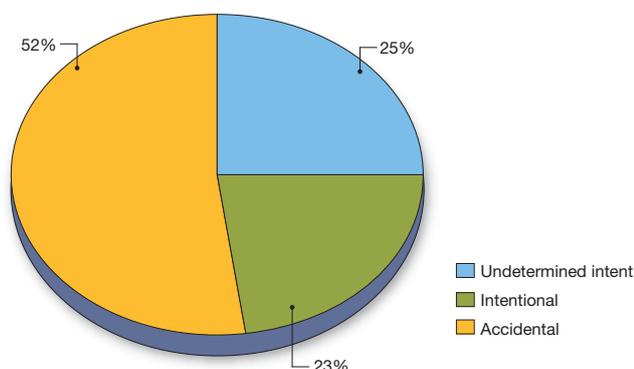
% Intent of drug-induced deaths (n)	All ages	15 to 54 years [^]
Accidental	52% (512)	55% (412)
Intentional	23% (224)	19% (138)
Undetermined intent	25% (240)	26% (193)
Drug-induced deaths total	976	743

* Figures recorded at the time of closure of the 2007 ABS causes of death file

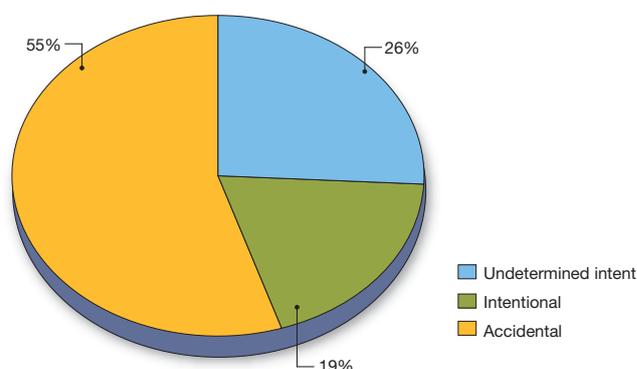
[^] Previous bulletins have examined drug-induced deaths among this age group

Figure 1: All drug-induced deaths by intent in Australia, 2007

1a. Australians — all ages



1b. Australians aged 15 to 54 years





Findings continued...

ACCIDENTAL DRUG-INDUCED DEATHS

Underlying cause by drug type

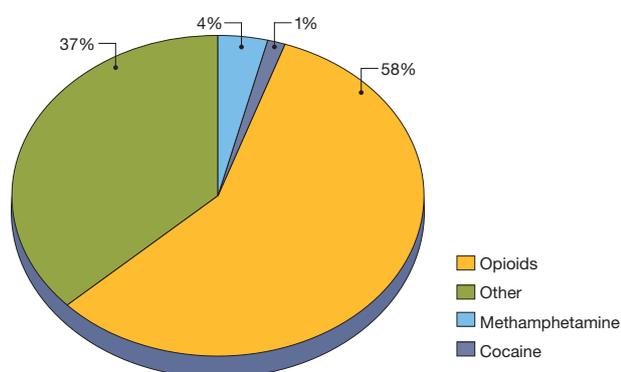
- Looking at the accidental drug-induced deaths, among all Australians, 299 (58%) of these deaths were recorded with opioids as the underlying cause (Figure 2a) compared to 266 (64%) among Australians aged 15 to 54 years (Figure 2b);
- All of the deaths where methamphetamine was recorded as the underlying cause of death (19) and those where cocaine was the underlying cause (7) occurred among Australians aged 15 to 54 years (Figure 2b); and
- Among all Australians, 187 (36%) deaths were recorded with other drugs as the underlying cause. Drugs were fairly evenly distributed across; 1) nonopioid analgesics, antipyretics and antirheumatic drugs; 2) anti-depressants and anti-psychotic agents; 3) sedative/hypnotic drugs (particularly benzodiazepines); and 4) a range of other drugs including alcohol. Many of these deaths had several drugs recorded.
- Among Australians aged 15 to 54 years, 120 (29%) deaths were recorded with other drugs as the underlying cause. These deaths predominantly had sedative/hypnotics (particularly benzodiazepines) recorded, followed by psychotropic drugs (including anti-depressants and anti-psychotic agents), and smaller numbers had nonopioid analgesics, antipyretics and antirheumatic drugs recorded. Many of these deaths also had several drugs recorded.

Any mention amphetamine and cocaine-related deaths

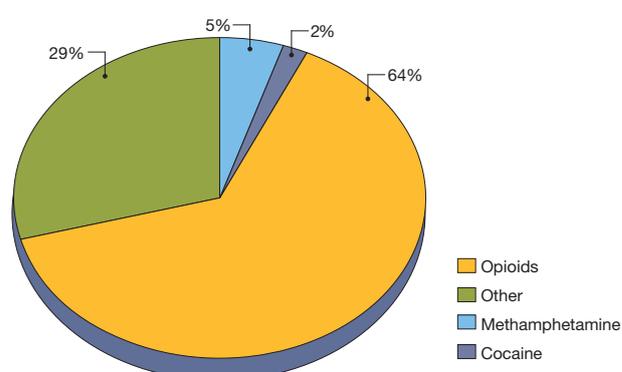
- Among Australians across all ages there were:
 - 52 deaths where methamphetamine was thought to be either the underlying or contributory cause; and
 - 11 deaths where cocaine was thought to be either the underlying or contributory cause

Figure 2: Accidental drug-induced deaths by drug type, Australia 2007

2a. Australians — all ages



2b. Australians aged 15 to 54 years



Findings continued...

OPIOID-RELATED DEATHS

- Analysis of the opioid-related deaths recorded in Australia in 2007 revealed that:
 - NSW reported the highest number of opioid-related deaths, followed by VIC (Table 2).
 - Males comprised almost three quarters (71%) of these deaths nationally (Table 4); and
 - Numbers per million persons of opioid-related deaths were lowest among the 15 to 24 year age group and those Australians aged over 55, and highest among Australians aged 25 to 34 years (Figure 3).

Table 3: Number of accidental deaths due to opioids by jurisdiction among Australians, 2007

Jurisdiction	All ages	15–54 years
NSW	123 (41%)	104 (39%)
VIC	77 (26%)	73 (27%)
QLD	14 (5%)	14 (5%)
SA	35 (12%)	30 (11%)
WA	23 (8%)	22 (8%)
TAS	13 (4%)	11 (4%)
NT	7 (2%)	6 (2%)
ACT	7 (2%)	6 (2%)
Australia	299	266

Table 4: Number of accidental deaths due to opioids by gender and jurisdiction, among Australians, 2007

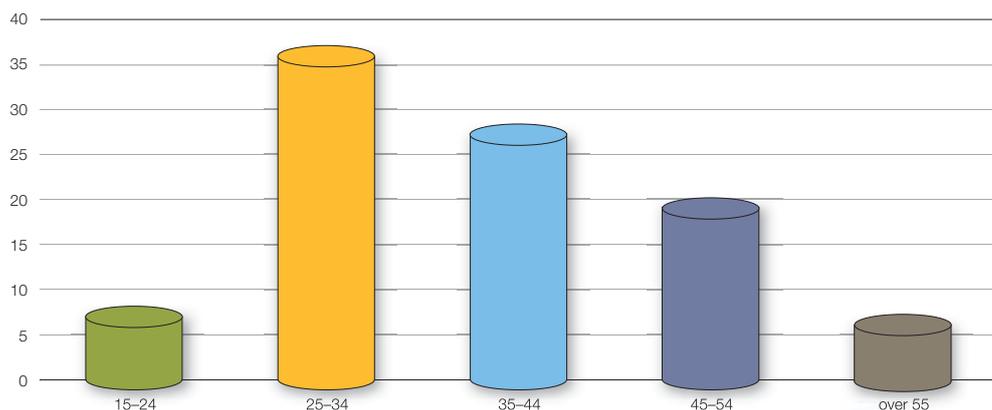
Jurisdiction	All ages		15–54 years	
	Males	Females	Males	Females
NSW	88 (71%)	35 (29%)	78 (74%)	28 (26%)
VIC	56 (73%)	21 (27%)	54 (74%)	19 (26%)
QLD	14 (100%)	0	14 (100%)	0
SA	24 (69%)	11 (31%)	21 (70%)	9 (30%)
WA	17 (74%)	6 (26%)	17 (77%)	5 (23%)
TAS	5 (38%)	8 (62%)	5 (45%)	6 (55%)
NT	np*	np*	np*	np*
ACT	np*	np*	np*	np*
Australia	212 (71%)	87 (29%)	198 (74%)	68 (26%)

* np means that the data in these jurisdictions were not published in order to protect confidentiality



Findings continued...

Figure 3: Number of accidental deaths due to opioids per million persons by ten year age group, 2007



Implications

- Caution needs to be taken when interpreting these results as drug-induced (particularly opioid) deaths may be incomplete at the time the ABS closed the 2007 causes of death data file.
- Approximately half (55%) of the drug-induced deaths among Australians in 2007 were determined by the coroner to be accidental, with a substantial minority (25%) being recorded with undetermined intent. The larger proportion of deaths where intent was not determined is likely an artifact of changes from 2006 in the way these deaths are coded.
- **Opioid-related deaths**
 - Numbers of opioid-related deaths were highest relative to deaths due to other drugs, accounting for 58% of accidental drug-induced deaths in 2007.
 - Deaths due to opioids were highest among Australians aged 25 to 34 years, and much lower among both younger (15 to 24 years) and older (over 55 years) Australians.
 - This is consistent with other research that suggests a decline in the number of young injecting drug users in Australia in the past five years, as well as a decline in new initiates to injecting drug use (4).
- **Methamphetamine and cocaine-related deaths**
 - Deaths due to methamphetamine and cocaine were markedly lower than numbers of opioid-related deaths
 - Despite lower numbers, research has shown that methamphetamine use is associated with significant harms (8, 9), so continued research into effective treatment for psychostimulant dependence should remain a priority.
 - Psychostimulant users appear to be a difficult group to engage in treatment and harm reduction services (10), and accordingly, strategies to enhance engagement among this group are required.
- **Deaths due to other drugs**
 - Deaths due to other drugs made up approximately one-third of the accidental drug-induced deaths in 2007.
 - Many of these deaths were due to multiple drug toxicity and a proportion of them also had alcohol recorded.
 - Continued monitoring of these deaths is essential, particularly among an ageing population in Australia, who are increasingly likely to be prescribed medications as they age.
 - Dissemination of messages about the dangers of mixing alcohol and prescribed medications among the broader Australian community is essential.

Appendix A

In this report, the following ICD-10 codes have been used for deaths where drugs (excluding alcohol and tobacco) were considered to be the underlying cause of death:

- F11 to F16 — deaths due to opioid, cannabis, sedative/hypnotic, cocaine, methamphetamine or hallucinogen use disorders;
- F19 — deaths due to multiple drug use disorder;
- F55 — deaths due to harmful use of non-dependence producing substances (such as laxatives, steroids or antacids);
- X40 to X44 — deaths due to accidental poisoning by and exposure to noxious substances including nonopioid analgesics, antipyretics, sedative/hypnotics, narcotics and psychodyleptics, drugs acting on the autonomic nervous system, and medicaments and biological substances not specified elsewhere;
- X60 to X64 — deaths due to intentional poisoning by and exposure to noxious substances including nonopioid analgesics, antipyretics, sedative/hypnotics, narcotics and psychodyleptics, drugs acting on the autonomic nervous system, and medicaments and biological substances not specified elsewhere;
- X85 — deaths due to assault by drugs, biological substances and medicaments; and
- Y10 to Y14 — deaths where intent was not determined for poisoning by and exposure to noxious substances including nonopioid analgesics, antipyretics, sedative/hypnotics, narcotics and psychodyleptics, drugs acting on the autonomic nervous system, and medicaments and biological substances not specified elsewhere.

The following ICD-10 codes have been used for deaths where opioids were considered to be the underlying cause of death:

- F11 — Accidental deaths due to opioid use disorder (including opioid dependence);
- F19 with F11 — Accidental deaths due to multiple drug use disorder which included an opioid use disorder;
- X42 with T40.0–T40.4, T40.6 — Accidental deaths due to poisoning which included opioid poisoning;
- X44 with T40.0–T40.4, T40.6 — Accidental deaths due to multiple drug poisoning which included opioid poisoning; and
- F19 with T40.0–T40.4, T40.6 — Accidental deaths due to multiple drug use disorder which included opioid poisoning.

The following ICD-10 codes have been used to examine deaths where amphetamine and cocaine were considered to be the underlying cause of death:

- F14 — Accidental deaths due to cocaine use disorder (including cocaine dependence)
- F15 — Accidental deaths due to methamphetamine use disorder (including methamphetamine dependence)
- X42 with T40.5 — Accidental deaths due to poisoning cross-classified with cocaine poisoning (but excluding any other drug from the X42 category)
- X41 with T43.6 — Accidental deaths due to poisoning cross-classified with methamphetamine poisoning (but excluding any other drug from the X41 category)

The following codes have also been examined to investigate deaths in which cocaine or amphetamines were mentioned as a contributing cause of an accidental drug-induced death, but in which they may not have been the primary cause of death:

- Accidental deaths due to other drug use disorder (F11–F16, F19, F55) cross-classified with cocaine (T40.5 and F14) or methamphetamine (T43.6 and F15); and
- Accidental deaths due to poisoning by another drug (X40–X44) cross-classified with cocaine (T40.5 and F14) or methamphetamine (T43.6 and F15).



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