

Cocaine and methamphetamine induced deaths in Australia 2009



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Background

- This bulletin provides interpretation of (1) final data on accidental drug-induced deaths in which methamphetamine¹ and cocaine were mentioned in Australia in 2009, and (2) estimated data for 2010 and 2011.
- N.B: the data for 2010 and 2011 are not final and are likely to change. We have estimated figures for 2010 and 2011 based on changes that occurred in the 2008 and 2009 revisions. We have not interpreted these figures in any detail. This will be the subject of later bulletins.
- The data in this bulletin refers to deaths where methamphetamine and cocaine were (1) determined to be the underlying cause of death – that is, that they were the primary factor responsible for the person's death; or (2) noted, but another drug was thought to be primarily responsible for death. Deaths are coded according to the World Health Organization's (WHO) International Statistical Classification of Diseases and Related Problems, 10th revision (ICD-10).
- The data presented here refer to deaths that were attributed to the following²:
 - Accidental deaths due to poisoning by cocaine or methamphetamine (and no other drug from same category was mentioned);
 - Accidental deaths due to cocaine or methamphetamine use (usually dependence); and
 - Accidental drug-induced deaths where cocaine or methamphetamine was mentioned.

Methamphetamine related drug induced deaths

- In 2009 there were a total of 86 "drug induced" deaths in which methamphetamine was mentioned among those aged 15 to 54 years (the ages when most drug related deaths occur) (Table 1), and 88 deaths across all ages.
- The rate of methamphetamine related deaths among those aged 15 to 54 years in 2009 was 7 per million persons, and remains relatively unchanged from 6.8 in 2008 (Figure 2).
- Methamphetamine was determined to be the underlying cause of death in approximately one quarter (23%, n = 20) of all methamphetamine related deaths in 2009 among Australians across all age groups. The low proportion of deaths where methamphetamine was the underlying cause reflects that a larger proportion of all methamphetamine deaths are due to other drugs (in particular opioids).
- Despite methamphetamine related mortality remaining relatively stable, a number of other indicators suggest an increasing trend in methamphetamine availability in Australia. There have been steady increases in the number of detections of clandestine laboratories in Australia involving the production of methamphetamine (Australian Crime Commission 2013), and an increase in numbers and weights of methamphetamine seizures detected at the border (Australian Customs and Border Protection Service 2013).
- Data on methamphetamine use however, shows a decline in prevalence over the past 10 years among; the general population; people who inject drugs; and people who use ecstasy regularly (Sindicich and Burns in press; Stafford and Burns in press), while among needle and syringe programme (NSP) attendees, proportions of drug users reporting injecting methamphetamine have remained stable between 2008 and 2012 (Iversen and Maher 2013).

¹ ICD-10 uses the terminology "amphetamine" to refer to the drug class "methamphetamine". Since the vast majority of "amphetamine" in Australia is actually methamphetamine this is the term that will be used in this report.

² See Appendix for details of codes used.



Methamphetamine related drug induced deaths continued...

- Indicators of harms related to methamphetamine use show that hospital stays for methamphetamine have started to increase again after declines seen in the early 2000s (Roxburgh and Burns 2013).
- Conversely, there has been a decline in the number of treatment episodes for problems associated with methamphetamine use since 2008 (Australian Institute of Health and Welfare 2012).

Cocaine related drug induced deaths

- In 2009 there were 23 drug induced deaths” in which cocaine was mentioned among those aged 15–54 years of age and 24 deaths across all ages.
- The rate — 1.8 per million persons aged 15-54 years in Australia — of deaths where cocaine was mentioned is slightly higher in 2009 compared to 2008 (1.3 per million persons; Figure 2) but remains low.
- Cocaine was determined to be the underlying cause of death in 21% (n=5) of all cocaine related deaths in 2009 among Australians aged 15 to 54.
- These findings are consistent with indicators of low prevalence of use, with the Illicit Drug Reporting System reporting a decline in cocaine use between 2002-2013 among people who inject drugs (Stafford and Burns in press). Conversely, an increasing proportion of regular ecstasy users recruited for the Ecstasy and related Drugs Reporting System reported cocaine use during this period, however, use remains sporadic among this group (Sindicich and Burns in press).
- Trends in cocaine related deaths are also consistent with indicators of cocaine-related harm. Hospital stays that were primarily for cocaine remained under 300 per year in Australia between 1993 and 2013 (Roxburgh and Burns 2013), and very small proportions of completed treatment episodes in Australia are for cocaine (<1% in the 2011/12 financial year) (Australian Institute of Health and Welfare 2013)

Notes on methods and findings

- 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.
- Since 2007, the causes of death data have been subject to a revisions process. The preliminary data is released, then two successive revisions are released 12 months apart from the date of the release of preliminary data.
- The 2006 data in this bulletin were not subject to this revision process, and are therefore likely to be incomplete. This is likely to result in an underestimate of the number of methamphetamine and cocaine related deaths recorded in 2006. We have tried to offset this underestimate by analyzing the changes between preliminary and final findings for both 2007 and 2008. We have averaged the changes across both years, and applied it to the 2006 figures. This data should be interpreted with caution.
- Data for 2007 through 2009 in this bulletin represent the 2nd and final revision of each dataset, and are therefore methodologically comparable.
- Data for 2010 and 2011 are projected estimates, based on the changes that occurred in 2008 and 2009 data. Again these data should be interpreted with caution as figures may change.
- The result of the revisions process is a longer time from the reporting of a death to finalization by the coroner. These revisions will lead to an increase in the number of deaths between revisions. This is particularly true for deaths that are drug-related, as coronial investigations can be complex and lengthy in nature.



Notes on methods and findings continued...

- In addition to the revisions process, the ABS undertook two further processing improvements from 2008 onwards; 1) For both open (where a coroner has not yet handed down a finding on cause of death) and closed (where a coroner's decision has been made) cases on the NCIS, the ABS now spend more time investigating the Medical Certificate of Cause of Death to more consistently apply the appropriate ICD10 code for cause of death; 2) For both open and closed cases, the ABS also increasingly uses additional information on the NCIS (e.g. autopsy, police and toxicology reports), where available, to apply more specific cause of death codes.
- Both of these processing improvements are likely to have an impact on the number of methamphetamine and cocaine related deaths reported from 2008 onwards.
- It should also be noted that availability of additional information on the NCIS varies by jurisdiction, which means that improvements are likely to be applied differentially across jurisdictions.
- These findings should be interpreted in conjunction with the ABS Technical Note 2 Causes of Death Revisions 2009, available on the ABS website:

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/3303.0Technical%20Note12011?opendocument&tabname=Notes&prodno=3303.0&issue=2011&num=&view>

Table 1. Number of accidental drug-induced deaths mentioning cocaine or methamphetamine among 15–54 year olds, 1997–2009

	Cocaine underlying cause of death	* Cocaine total mentions	Methamphetamine underlying cause of death	* Methamphetamine total mentions
1997	0	20	4	25
1998	3	36	6	48
1999	4	33	15	79
2000	3	27	15	99
2001	2	28	13	51
2002	1	15	1	55
2003	5	15	17	50
2004	5	20	17	75
2005	10	15	26	68
2006	6	18	23	99
2007	7	15	27	74
2008	2	16	16	82
2009	5	23	20	86

* Refers to deaths where methamphetamine / cocaine is either the underlying or a contributory cause of death



Implications

- Methamphetamine-related deaths remained relatively stable to 2009.
- Projected estimates for 2010 and 2011 for methamphetamine-related deaths suggest an increasing trend. This may partly reflect the processing changes implemented by the ABS in more recent years, to more accurately identify methamphetamine deaths. Recent drug use data suggests this is the most likely explanation, with prevalence of 12 month use among the general population remaining low at 2.1% and sporadic use patterns recorded among regular drug using samples (Sindicich and Burns 2012; Stafford and Burns 2012).
- The recent upward trend in methamphetamine-related deaths is also likely, in part, to be driven by rising opioid deaths (Roxburgh and Burns 2013), as many of these deaths are due to multiple toxicity.
- Increasing numbers of people presenting to hospital for treatment for problematic methamphetamine use most likely reflects that longer term users are now starting to present following higher prevalence of use in the early 2000s.
- Cocaine-related deaths are very low in Australia, and the prevalence of mortality remains relatively unchanged to 2009.
- Projected estimates for 2010 and 2011 for cocaine-related deaths suggest a stable trend.

Figure 1. Number of accidental drug-induced deaths mentioning cocaine or methamphetamine among those aged 15–54 years in Australia, 1997–2009

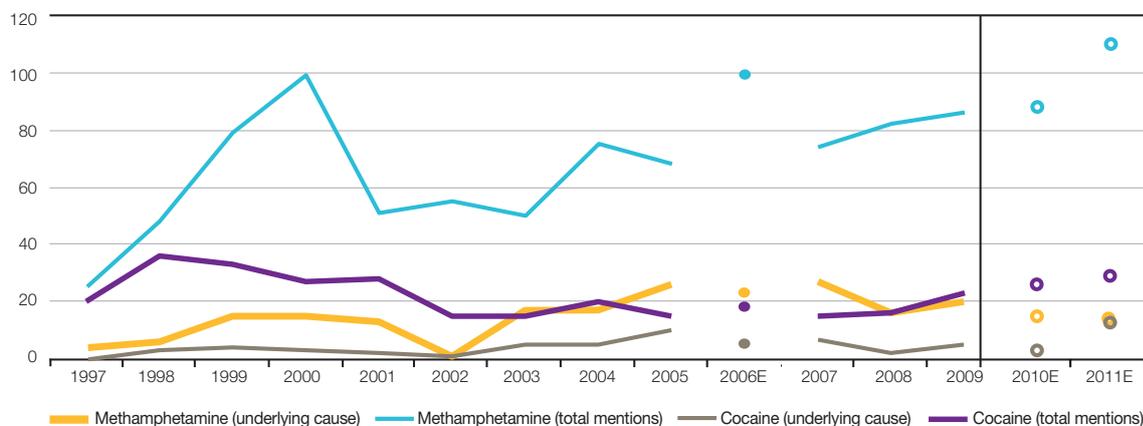
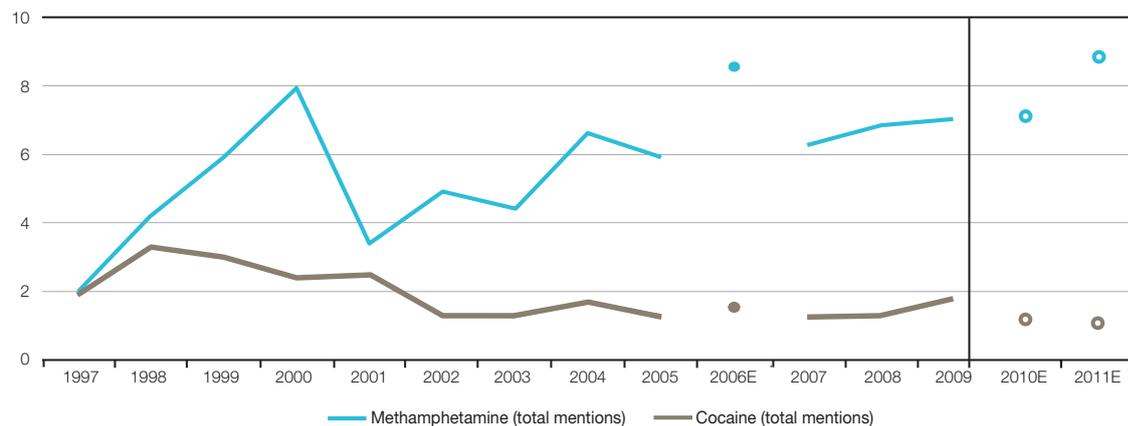


Figure 2. Rate of accidental drug-induced deaths with cocaine or methamphetamine mentions per million population aged 15–54 years, Australia 1997–2009





Appendix: ABS data on cocaine and methamphetamine mentions in accidental drug-induced deaths in Australia

The Australian Bureau of Statistics (ABS) is responsible for collecting data every year on persons who have died across Australia. Data on accidental deaths are collected from the Medical Certificates of Cause of Death submitted to each State or Territory's Registrar of Births, Deaths and Marriages and from the National Coroners Information System.

Death certificates typically state the sequence of events that led to a person's death. The ABS then uses its coding rules to establish the underlying cause of death, that is, "the disease or injury that initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury". The ABS also lists the diseases, injuries and health-related factors that contributed to the death but which were not the main cause of death.

The ABS uses an international classification system for classifying deaths, developed by the World Health Organization (WHO). This is called the International Statistical Classification of Diseases and Related Problems (ICD). The ICD edition currently used is the 10th edition (ICD-10). This edition of the classification system has been used since 1997 and provides more detailed information on accidental drug-induced deaths than previous versions.

All data on in this report refer to accidental drug-induced deaths where the underlying cause of death is drug-related and accidental. There are more deaths each year in which drugs are considered to have contributed to a person's death (e.g. general medical conditions, suicides, traffic accidents, drownings), but these deaths are not included.

In this report, 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).

RELATED LINKS:

For more information on NDARC research, go to <http://ndarc.med.unsw.edu.au/>

For more information about the ABS, go to www.abs.gov.au

For more information on ICD-10, go to www.who.int/whosis/icd10/



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