



# OVERDOSE DEATHS IN AUSTRALIA

## 2002 Edition

### COCAINE AND METHAMPHETAMINE MENTIONS IN ACCIDENTAL DRUG-INDUCED DEATHS IN AUSTRALIA, 1997-2002

Recent years have seen an increase in the number of persons sampled from sentinel groups of illicit drug users reporting the use of cocaine, particularly in Sydney (1). Increasing evidence also suggests that the stronger forms of methamphetamine (crystal meth, ice, base, shabu) that have been documented in the US are now being used by injecting drug users in Australia (2), as well as users of “party drugs” such as ecstasy (3, 4).

Given the experience in the United States over the past two decades, where cocaine is now the most frequently nominated illicit drug in emergency department visits (DAWN Report, 2002) and cocaine related deaths are a substantial cause for concern (5), we wished to document the number of cocaine and methamphetamine related deaths in Australia.

These data refer to the number of *accidental drug-induced deaths*<sup>1</sup> in which methamphetamine and cocaine were mentioned. This includes deaths where these drugs were determined to be the underlying cause of death – that is, that they were the *primary* factor responsible for the person’s death, as well as deaths where cocaine or methamphetamine were noted in “toxic quantities” but another drug was thought to be primarily responsible. They are coded according to the International Statistical Classification of Diseases and Related Problems, 10<sup>th</sup> revision (ICD-10).

The data presented here refer to deaths among those aged 15 to 54 years in 1997-2002 that were attributed to the following:

- Accidental deaths due to poisoning by cocaine or methamphetamine<sup>2</sup> (and no other drug from the 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.

1 Based on the ABS definition of accidental drug-induced death, that is accidental deaths due to drug use disorder and poisoning (i.e. all deaths with an underlying COD of one of the following ICD-10 codes F11-F16, F19, F55, X40-X44).

2 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.

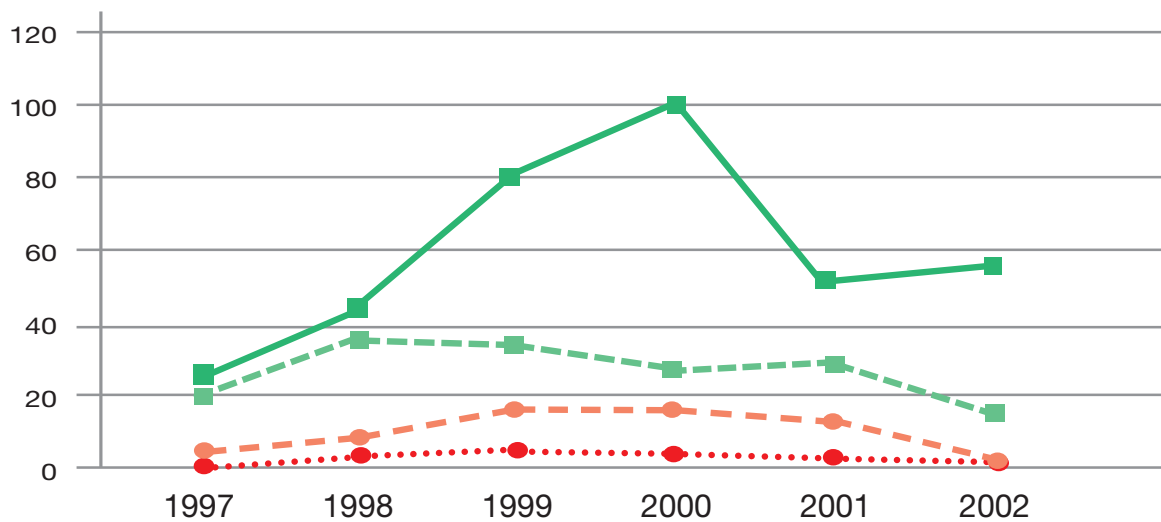
## RESULTS

Small numbers of accidental drug-induced deaths where cocaine and methamphetamine have been noted have occurred over the past six years in Australia.

Between 1997 and 2000 there was an increase in the number of deaths in which methamphetamine was noted, from 25 in 1997 to 99 in 2000, with a decrease in 2001 to 51 deaths and a slight increase in 2002 to 55 deaths. In 2002, there was only one death where methamphetamine was thought to be the underlying cause of death.

Deaths in which cocaine have been mentioned have been reported at lower levels, from 20 deaths in 1997 to 33 deaths in 1999 to 15 in 2002 (see Figure 1). In 2002, one death was coded as the underlying cause of death. The corresponding numbers are shown in Table 1. The corresponding rate of death per million persons among those aged 15-54 years in Australia is shown in Figure 2.

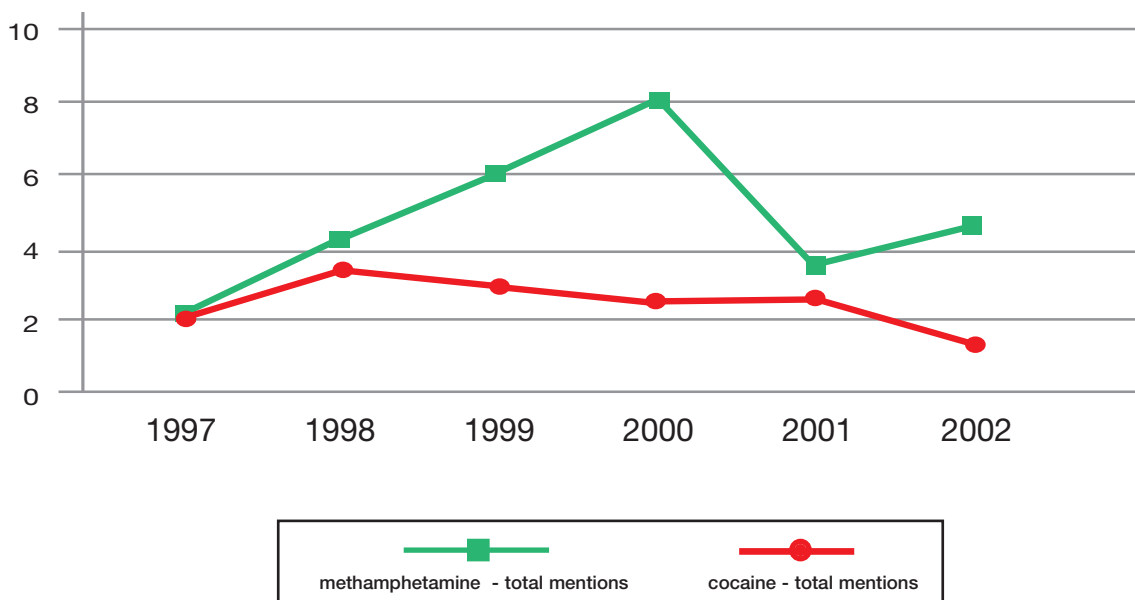
**Figure 1: Number of accidental drug-induced deaths mentioning cocaine or methamphetamine (total and underlying COD) among those aged 15-54 years in Australia, 1997-2002.**



**Table 1: Number of accidental drug-induced deaths mentioning cocaine or methamphetamine among those aged 15-54 years in Australia, 1997-2002.**

	1997	1998	1999	2000	2001	2002
Cocaine - underlying cause	0	3	4	3	2	1
Cocaine - total mentions	20	36	33	27	28	15
Methamphetamine - underlying cause	4	6	15	15	13	1
Methamphetamine- total mentions	25	48	79	99	51	55

**Figure 2: Rate of accidental drug-induced deaths with cocaine or methamphetamine mentions per million population aged 15-54 years, Australia 1997-2002.**



The characteristics of deceased persons for whom toxic amounts of cocaine or methamphetamine were mentioned are presented in Table 2. The average age for cocaine related deaths was slightly higher than for methamphetamine related deaths (32 years vs. 29 years). The proportion of deaths occurring among males was also slightly higher among cocaine related deaths than it was among methamphetamine related deaths (85% vs. 72%).

The place of usual residence of persons whose accidental deaths were cocaine or methamphetamine-related is also displayed. By far the majority of cocaine related deaths occurred in NSW (85%), with a further 6% occurring in Victoria. In contrast, methamphetamine related deaths were more evenly spread among NSW (39%), Victoria (25%), Queensland (14%) and Western Australia (12%). These findings are consistent with what is known of the use of cocaine and methamphetamine across Australia. Specifically, over the past 6 years there has been a documented increase in cocaine use among injecting drug users in Sydney (whose primary drug of choice is typically heroin)(1), in contrast to much less marked increases in other jurisdictions across the country (2). The spread of methamphetamine-related deaths across Australia is also consistent with what is known of methamphetamine markets in the country, with NSW, Victoria, Queensland, Western Australia and South Australia having established methamphetamine markets (2).

Toxic levels of other drugs on board at time of death for accidental drug-induced deaths mentioning cocaine or methamphetamine are also reported in Table 2. An overwhelming majority of both types of deaths also noted opioid poisoning (86% and 62% respectively), with cocaine-related deaths being more likely. As expected the vast majority of each of the respective types of death had toxic levels of cocaine (87%) and methamphetamine (94%) noted. Antidepressants and benzodiazepines featured in both types of deaths with just over one twentieth of cocaine deaths having toxic levels of antidepressants on board and one fifth of cocaine deaths having toxic levels of benzodiazepines on board at time of death. This is contrast to methamphetamine related deaths, which were more likely to involve both of these prescription drugs with 15% and 30% respectively.

**Table 2: Characteristics of deceased persons whose death was an accidental drug-induced death, where cocaine and methamphetamine were mentioned, 1997-2002**

	Cocaine-related deaths N = 160	Methamphetamine-related deaths N = 362
Median age at death (years)	32.0	29.0
% Male	85.0	71.5
% State of usual residence		
NSW	85.0	39.2
Victoria	6.3	25.1
QLD	2.5	14.4
SA	1.9	6.4
WA	2.5	12.4
Tasmania	-	0.6
Northern Territory	-	-
ACT	1.9	1.9
% Toxic levels of drugs		
Opioid	86.3	68.2
Cocaine	86.9	5.2
Methamphetamine	11.9	93.9
Alcohol	14.4	14.4
Antidepressants	5.6	14.9
Benzodiazepines	20.6	30.4

#### References

1. **Darke, S, Kaye, S, & Topp, L.** (2002). Cocaine use in New South Wales, Australia, 1996-2000: 5 year monitoring of trends in price, purity, availability and use from the Illicit Drug Reporting System. *Drug and Alcohol Dependence* 87, 81-88.
2. **Topp L, Kaye, S, Bruno, R, Longo, M, Williams, P, O'Reilly, B, Fry, C, Rose, G, & Darke, S.** (2002). *Australian Drug Trends 2001: Findings from the Illicit Drug Reporting System (IDRS)*. NDARC Monograph No. 48. Sydney: National Drug and Alcohol Research Centre.
3. **Breen, C, Topp, L, & Longo, M.** (2002). Adapting the IDRS methodology to monitor trends in party drug markets: Findings of a two- year feasibility trial. NDARC Technical Report No. 142. Sydney: National Drug and Alcohol Research Centre.
4. **Degenhardt, L, & Topp, L.** (2003). "Crystal meth" use among polydrug users in Sydney's dance party subculture: characteristics, use patterns and associated harm. *International Journal of Drug Policy* 14, 17-24.
5. **Coffin, PO, Galea, S, Ahern, J, Leon, AC, Vlahov, D, & Tardiff, K.** (2003). Opiates, cocaine and alcohol combinations in accidental drug overdose deaths in New York City, 1990-98. *Addiction* 98, 739-747.

## **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 10<sup>th</sup> 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 methamphetamine 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 methamphetamines 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:**

**[www.med.unsw.edu.au/ndarc](http://www.med.unsw.edu.au/ndarc)**

**For more information about the ABS, go to:**

**[www.abs.gov.au](http://www.abs.gov.au)**

**For more information on ICD-10, go to:**

**[www.who.int/whosis/icd10/](http://www.who.int/whosis/icd10/)**

### **Recommended citation:**

**Degenhardt, L. & Barker, B.** (2003). *Investigating trends in cocaine and methamphetamine mentions in accidental drug-induced deaths in Australia 1997-2002*. Sydney: National Drug and Alcohol Research Centre.

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