



Illicit Drug Related Deaths: State & National Data

Introduction

This publication contains time series data where the underlying cause of death was due to either opioid or meth/amphetamine (also referred to as designer drugs). Annual and quarterly data is available from 1995 for drug related deaths in Western Australia (WA), for the annual opioid overdose deaths by each Australian jurisdiction from 1998 and annual cocaine and methamphetamine overdose deaths from 1997 for Australia as a whole.

The term 'opioid' related death encompasses confirmed and suspected accidental heroin related deaths (HRDs) as well as other opioid related deaths due to drugs such as morphine, methadone, oxycodone, dextromoramide, codeine, propoxyphene, pethidine or buprenorphine.

Interpretation of HRDs requires an understanding of limitations in identifying and determining the role of heroin as a cause of death.

As data may not be available because of pending or incomplete coronial inquiries or inquests, these cases are identified as 'suspected' HRDs to reflect a preliminary interpretation by police as to the cause of death based on available evidence.

HRDs: WA, 1995 - 2006

Confirmed HRD data for the period 1995 to 2000 shows there was an upward trend in quarterly HRDs, from 12 in the March quarter 1995 to a peak of 27 in the June quarter 2000. It can be seen that from mid 2001 until the end of 2003 there were very few confirmed HRDs in WA, with no HRDs in the September quarter 2003 and only 2 HRDs in the December quarter 2003. (See Figure 1.)

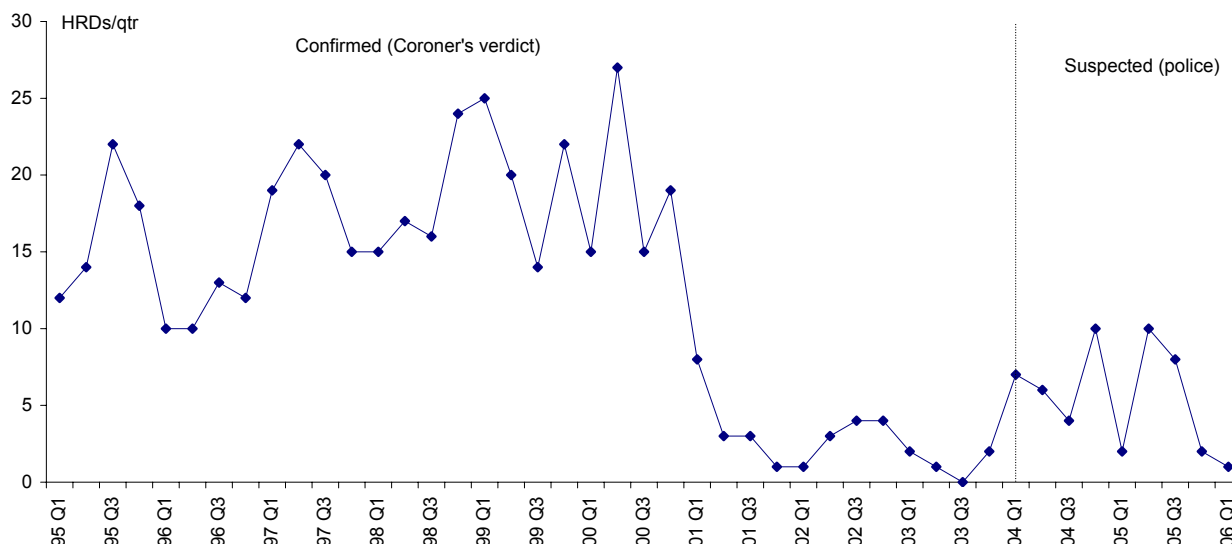
Suspected HRD data from 2004 indicates a small increase in quarterly HRDs up to the September quarter 2005 (8 cases), with a more recent decline, with 1 suspected HRD in the March quarter 2006.

Opioid deaths: WA, 1995 - 2006

Confirmed data concerning the involvement of opioids other than heroin as the underlying cause of death is available for the period 1995 to 2003.

From 1995 to 2000 there were relatively few deaths involving either licit opioids (ie where the person was under medical care for health problems) or illicit opioids (ie not obtained under prescription and where there was evidence of self administration).

Figure 1
Quarterly accidental heroin related deaths
WA, 1995 - 2006



However, from 2001 to the end of 2003 the number of deaths involving other opioids exceeded the number of accidental HRDs in a number of quarters (see Table 1).

Meth/amphetamine drug deaths: WA, 1997 - 2003

The term 'meth/amphetamine' includes deaths due to the use of drugs such as amphetamine, methylamphetamine, PMA (paramethoxyamphetamine), ecstasy or MDMA (methylenedioxymetamphetamine), MDA (3,4-methylenedioxymethylamphetamine) or ketamine.

Confirmed data for the period 1997 to 2003, shows that there were very few quarterly deaths in WA involving this group of drugs up to the September quarter 1999. However, there was an increase in these deaths from the December quarter 1999 to the end of 2001, with an average of about 4 deaths per quarter over this period and throughout 2002 and 2003 few deaths occurred. (See Table 1.)

Opioid deaths: Australia, 1988 - 2004

Data on opioid overdose deaths in each Australian jurisdiction from 1988 have been derived from the most recent edition of a report by the National Drug and Alcohol Research Centre (NDARC) concerning opioid related deaths. In 2004 there was a total of 357 opioid related deaths in Australia involving persons aged 15 to 54 years, of which:

- 144 (40.3%) were in New South Wales (NSW);
- 126 (35.3%) were in Victoria (VIC);
- 34 (9.5%) were in Queensland (QLD);
- 25 (7.0%) were in South Australia (SA);
- 19 (5.3%) were in Western Australia (WA);
- 6 (1.7%) were in Tasmania (TAS);
- 1 (0.3%) were in the Northern Territory (NT); and
- 2 (0.6%) were in the Australian Capital Territory (ACT).

In 2004 the rate of opioid overdose deaths in Australia was 31.3 per million persons aged 15 to 54 years, a decrease of just over two thirds from the national peak rate of 101.9 in 1999. Rates above the national average (31.3) were recorded for Victoria (44.6) and New South Wales (38.0), being 1.4 and 1.2 times higher than the national average, respectively.

Figure 2 (page 3) shows that trends in the rate of accidental opioid deaths for the 15 to 24, 25 to 34, 35 to 44 and 45 to 54 age groups have closely followed one another. However, the rate of deaths involving the 45 to 54 year age group has increased slightly whereas the rates in other groups have remained relatively constant since 2001.

Cocaine & methamphetamine deaths: Australia, 1997 - 2004

Annual Australian data on deaths where cocaine or methamphetamine were the underlying cause indicates there has been a comparatively small increase in these deaths since 1999 with a total of 22 deaths in both 2003 and 2004.

Table 1
Annual opioid & meth/amphetamine drug related deaths (underlying cause)
WA, 1995 - 2005

	Opioid deaths					Meth/ amphetamines (confirmed)	Total (confirmed)
	Accidental heroin related deaths		Other opioid related deaths (confirmed)		Total opioid		
	Suspected	Confirmed	Illicit opioids (excl. accid HRDs)	Licit opioids			
1995	na	66	6	10	82	na	na
1996	na	45	7	12	64	na	na
1997	83	76	11	8	95	2	97
1998	78	72	27	11	110	1	111
1999	89	81	18	5	104	5	109
2000	82	76	14	10	100	17	117
2001	36	15	13	34	62	18	80
2002	11	12	6	12	30	2	32
2003	8	5	5	9	19	3	22
2004	27	na	na	na	na	na	na
2005	22	na	na	na	na	na	na

Narcotic overdoses WA, 1998 - 2006

Figure 3 shows that quarterly attendances by ambulances at narcotic overdoses in the Perth metropolitan area have fallen substantially since 2000. Since mid 2001 the number of callouts per quarter has remained relatively constant with between 40 to 60 per quarter.

Figure 2
Mortality rate by age group of accidental opioid deaths (rate per million)
Australia, 1988-2004

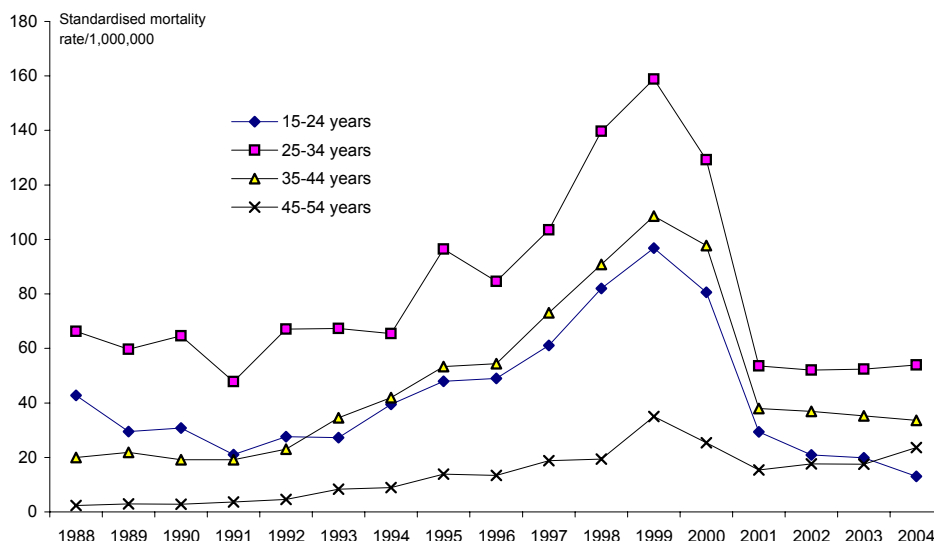
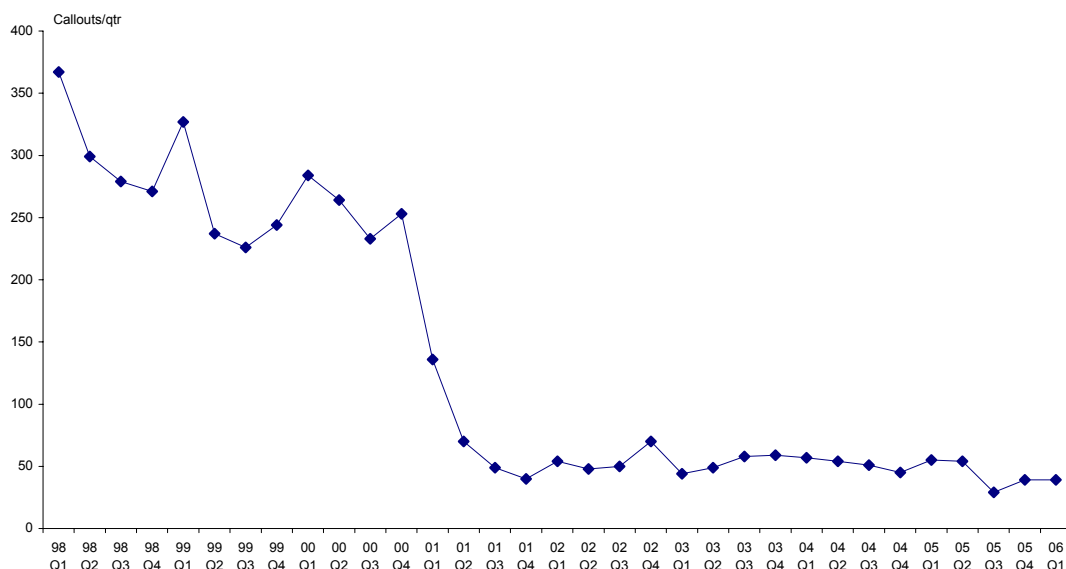


Figure 3
Quarterly ambulance attendances at narcotic overdoses
Perth metropolitan area, 1998 - 2006



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<http://www.dao.health.wa.gov.au>



Illicit Drug Related Deaths: State & National Data

Data Tables & Figures: Opioid Overdoses, Australia

Table A-1

Number of accidental opioid overdose deaths of persons aged 15-54 years by jurisdiction, 1988 - 2004

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Unknown	Aust
1988	204	99	16	12	18	-	-	2	-	351
1989	158	99	19	8	18	1	2	2	-	307
1990	196	79	8	19	14	5	-	-	-	321
1991	146	64	9	13	13	3	-	2	-	250
1992	182	79	18	30	22	-	1	4	-	336
1993	188	86	23	41	24	5	2	5	-	374
1994	209	97	37	32	38	4	5	3	-	425
1995	273	140	42	38	70	6	-	13	-	582
1996	260	145	32	32	64	5	2	17	-	557
1997	333	203	36	52	76	2	2	9	-	713
1998	452	243	64	53	78	10	13	14	-	927
1999	481	376	79	64	92	5	8	11	-	1,116
2000	349	323	124	50	72	8	2	10	-	938
2001	177	73	58	18	35	8	5	12	-	386
2002	158	93	40	21	28	9	6	8	1	364
2003	143	129	32	14	16	4	2	17	-	357
2004	144	126	34	25	19	6	1	2	-	357

Source: Degenhardt L, Roxburgh A, Black E & Dunn M. *Accidental drug-induced deaths due to opioids in Australia, 2004*. Sydney, National Drug and Alcohol Research Centre, 2006.

Data Tables & Figures: Opioid Overdoses, Australia

Table A-2

Rate per million population of accidental opioid overdose deaths of persons aged 15-54 years by jurisdiction, 1988 - 2004

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Aust
1988	62.5	39.9	10.1	14.9	19.7	0.0	0.0	11.4	36.6
1989	47.5	39.3	11.6	9.8	19.2	6.4	19.2	11.4	31.4
1990	58.2	30.8	4.7	23.1	14.6	19.1	0.0	0.0	32.3
1991	42.8	24.7	5.2	15.7	13.4	11.4	0.0	10.8	24.8
1992	52.9	30.3	10.1	35.9	22.4	0.0	9.2	21.1	32.9
1993	54.3	33.0	12.6	48.9	24.1	18.8	18.3	25.9	36.3
1994	59.9	37.1	19.7	38.1	37.7	15.0	45.5	15.4	40.9
1995	76.9	53.4	21.8	45.1	68.1	22.5	0.0	66.2	55.3
1996	72.7	54.8	16.2	37.9	61.2	18.7	17.7	85.6	52.2
1997	92.2	76.1	18.1	61.8	71.3	7.5	16.5	45.8	66.3
1998	124.1	90.4	31.7	62.7	72.1	37.8	106.1	71.3	85.4
1999	130.9	138.8	38.7	75.5	84.1	19.0	64.4	55.9	101.9
2000	94.1	118.1	60.1	58.9	65.2	30.6	15.9	50.5	84.9
2001	47.2	26.4	27.8	21.2	31.3	30.8	39.6	60.2	34.6
2002	41.9	33.2	18.8	24.7	24.8	34.9	47.8	40.1	32.3
2003	37.8	45.9	14.7	16.5	14.1	15.4	15.9	85.3	31.5
2004	38.0	44.6	15.4	29.5	16.6	23.0	8.0	10.1	31.3

Source: Degenhardt L, Roxburgh A, Black E & Dunn M. *Accidental drug-induced deaths due to opioids in Australia, 2004*. Sydney, National Drug and Alcohol Research Centre, 2006.

Data Tables & Figures: Opioid Overdoses, Australia

Figure A-1
Mortality rate opioid deaths - New South Wales, Victoria & ACT
persons aged 15-54 (rate per million), 1988 - 2004

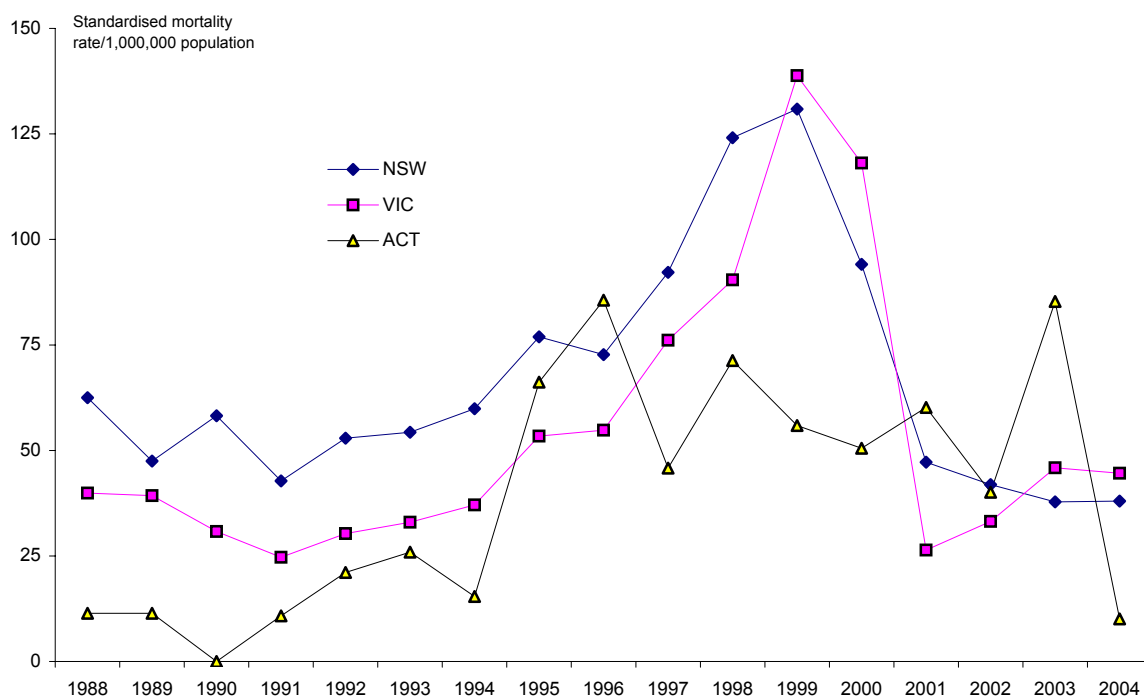
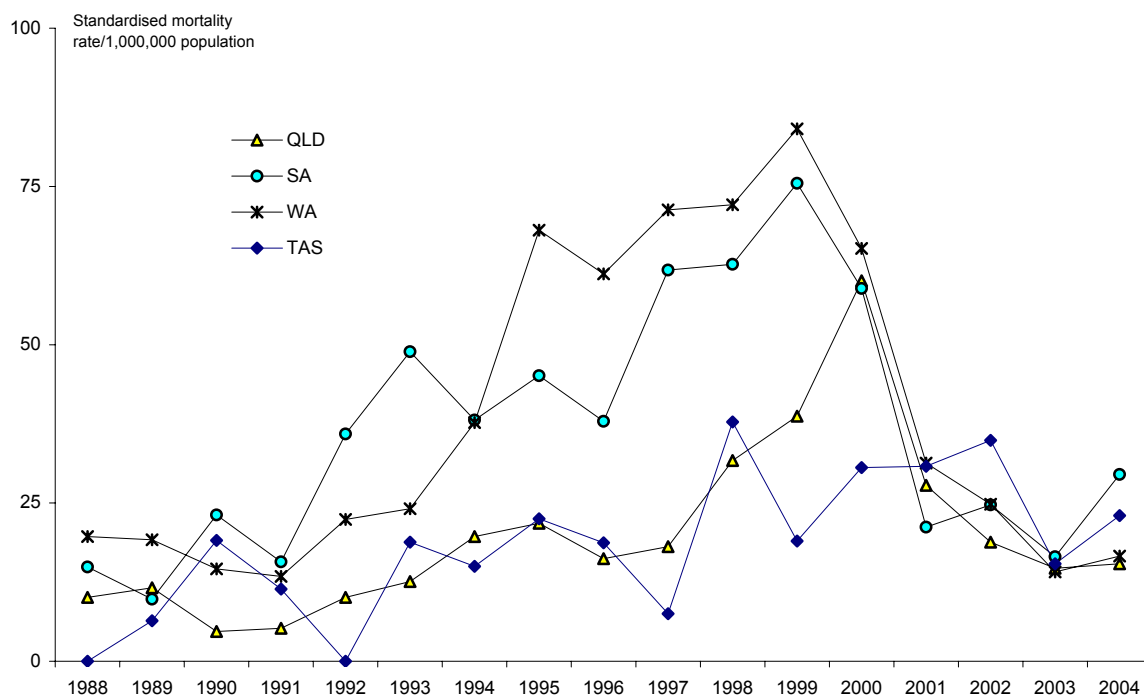


Figure A-2
Mortality rate opioid deaths - South Australia, Queensland, Western Australia & Tasmania
persons aged 15-54 (rate per million), 1988 - 2004



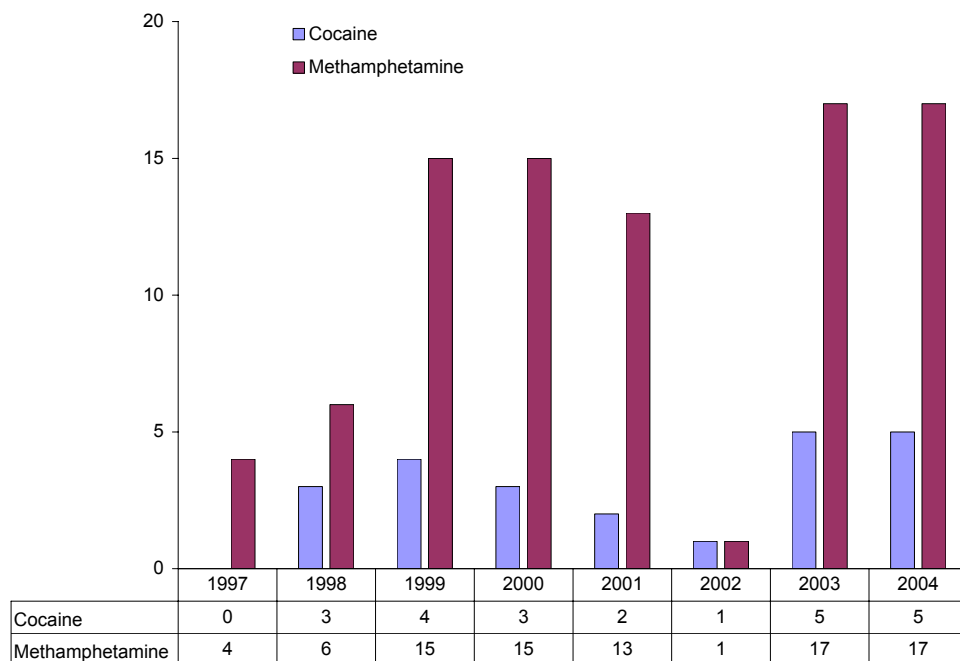
Data Tables & Figures: Cocaine & Methamphetamine Overdoses, Australia

Table A-3
Number of accidental cocaine or methamphetamine overdose deaths of persons aged 15-54 years, Australia, 1997 - 2004

	Cocaine	Methamphetamine
1997	-	4
1998	3	6
1999	4	15
2000	3	15
2001	2	13
2002	1	1
2003	5	17
2004	5	17

Source: Degenhardt L, Roxburgh A, Black E & Dunn M. 2004 Cocaine and amphetamine related drug induced deaths in Australia. Sydney, National Drug and Alcohol Research Centre, 2006.

Figure A-3
Number of accidental cocaine or methamphetamine overdose deaths of persons aged 15-54 years, Australia, 1997 - 2004



Data Tables & Figures: Ambulance Attendances at Narcotic Overdoses, WA

Table A-4
Quarterly ambulance attendances at narcotic overdoses
Perth metropolitan area, 1998 - 2006

Call outs		Call outs		Call outs	
1998		2001		2004	
Qtr 1	367	Qtr 1	136	Qtr 1	57
Qtr 2	299	Qtr 2	70	Qtr 2	54
Qtr 3	279	Qtr 3	49	Qtr 3	51
Qtr 4	271	Qtr 4	40	Qtr 4	45
Total	1,216	Total	295	Total	207
1999		2002		2005	
Qtr 1	327	Qtr 1	54	Qtr 1	55
Qtr 2	237	Qtr 2	48	Qtr 2	54
Qtr 3	226	Qtr 3	50	Qtr 3	29
Qtr 4	244	Qtr 4	70	Qtr 4	39
Total	1,034	Total	222	Total	177
2000		2003		2006	
Qtr 1	284	Qtr 1	44	Qtr 1	39
Qtr 2	264	Qtr 2	49	Qtr 2	
Qtr 3	233	Qtr 3	58	Qtr 3	
Qtr 4	253	Qtr 4	59	Qtr 4	
Total	1,034	Total	210	Total	

Source: St John Ambulance database, School of Primary, Aboriginal and Rural Health Care, QEII Medical Centre.

Data Tables & Figures: Opioid & Meth/Amphetamine Drug Deaths, WA

Table A-5
Quarterly opioid & meth/amphetamine drug related deaths (underlying cause)
WA, 1995 - 2000

		Opioid deaths				Meth/ amphetamines (confirmed)	Total (confirmed)	
		Accidental heroin related deaths		Other opioid related deaths (confirmed)				Total
		Suspected	Confirmed	Illicit opioids (excl. accid HRDs)	Licit opioids			
1995	March	na	12	2	3	17	na	na
	June	na	14	1	2	17	na	na
	September	na	22	2	3	27	na	na
	December	na	18	1	2	21	na	na
	Total		66	6	10	82		
1996	March	na	10	3	2	15	na	na
	June	na	10	3	6	19	na	na
	September	na	13	1	2	16	na	na
	December	na	12	-	2	14	na	na
	Total		45	7	12	64		
1997	March	21	19	2	2	23	-	23
	June	23	22	4	2	28	-	28
	September	22	20	4	4	28	2	30
	December	18	15	1	-	16	-	16
	Total	83	76	11	8	95	2	97
1998	March	19	15	9	2	26	-	26
	June	16	17	4	2	23	-	23
	September	15	16	4	3	23	-	23
	December	25	24	10	4	38	1	39
	Total	78	72	27	11	110	1	111
1999	March	23	25	6	-	31	1	32
	June	22	20	3	2	25	-	25
	September	18	14	6	1	21	-	21
	December	26	22	3	2	27	4	31
	Total	89	81	18	5	104	5	109
2000	March	17	15	2	2	19	4	23
	June	28	27	2	5	34	4	38
	September	16	15	5	2	22	4	26
	December	21	19	5	1	25	5	30
	Total	82	76	14	10	100	17	117

Data Tables & Figures: Opioid & Meth/Amphetamine Drug Deaths, WA

Table A-6

**Quarterly opioid & meth/amphetamine drug related deaths (underlying cause)
WA, 2001 - 2006**

		Opioid deaths				Meth/ amphetamines (confirmed)	Total (confirmed)	
		Accidental heroin related deaths		Other opioid related deaths (confirmed)				Total
		Suspected	Confirmed	Illicit opioids (excl. accid HRDs)	Licit opioids			
2001	March	12	8	4	7	19	6	25
	June	14	3	5	11	19	7	26
	September	7	3	1	10	14	3	17
	December	3	1	3	6	10	2	12
	Total	36	15	13	34	62	18	80
2002	March	1	1	2	4	7	1	8
	June	5	3	1	2	6	-	6
	September	2	4	3	4	11	1	12
	December	3	4	-	2	6	-	6
	Total	11	12	6	12	30	2	32
2003	March	1	2	3	6	11	-	11
	June	1	1	2	3	6	3	9
	September	2	-	-	-	-	-	-
	December	4	2	-	-	2	-	2
	Total	8	5	5	9	19	3	22
2004	March	7	na					na
	June	6	na					na
	September	4	na					na
	December	10	na					na
	Total	27						
2005	March	2	na					na
	June	10	na					na
	September	8	na					na
	December	2	na					na
	Total	22						
2006	March	1	na					na
	June							
	September							
	December							
	Total							

Methodology

A 'suspected' HRD is a case based on information available to the WA police at the initial stage of investigation. A case is subject to confirmation following consideration by formal coronial inquiry or an inquest.

A HRD investigation involves a number of stages: (1) preliminary investigations by police, (2) analysis of toxicological and other forensic data, (3) a formal coronial inquiry or inquest, (4) the release by a Coroner of the final cause of death and (5) assignment of a cause of death code by the Australian Bureau of Statistics (ABS).

Due to late registrations from remote regions the number of 'suspected' HRDs recorded by the police for a particular period may change. Also, some cases initially believed to be a HRD may be removed from the list of suspected overdoses following receipt of more comprehensive information by the police.

A 'confirmed' HRD is a case where after an inquiry (or inquest) the Coroner has determined that death was caused accidentally by heroin alone, or by heroin in combination with other drugs. In this publication this excludes HRDs that were caused intentionally (ie suicide or homicide).

The ABS has responsibility for compiling comprehensive statistical summaries for all causes of death for each Australian jurisdiction. This process uses an internationally standardised system of cause of death codes developed under the auspices of the World Health Organisation.

The present set of codes is the *Tenth Revision of the International Classification of Diseases*, referred to as ICD-10. ICD-10 has been used to classify the underlying cause of death from 1999. (ICD-9 was used to code all causes of death in Australia from 1978 to 1998.)

The ICD-10 system uses different codes to identify deaths caused by specific pharmacological groups of drugs, including opioid type (F11.-), stimulant type (F15.-), cocaine type (F14.-) and hallucinogens (F16.-) etc. A fourth character sub division is used to determine the level of drug use, harmfulness, dependence and other related disorders.

The definition of an 'accidental death due to opioids' according to the ICD-10 system has been slightly modified to include those deaths where multiple drugs were the underlying cause and opioids were one of the drugs contributing to this coding. This revision was undertaken for the 2002 analysis and has resulted in adjustments to totals from 1988 up to the present.

The national opioid data refers to accidental deaths in which opioids were determined to be the underlying cause of death. These data refer to deaths among those aged 15 to 54 years attributed to the following ICD-10 codes:

- X42 and X44 - accidental deaths due to poisoning by opioids; and
- F11 and F19 - accidental deaths due to opioid use (usually opioid dependence).

The term 'opioid' as used by the ABS refers to both natural derivatives of the opium poppy such as heroin and related synthetic derivatives from other sources such as, methadone, dextromoramide and pethidine.

National data concerning cocaine and methamphetamine related deaths refers to deaths among those aged 15 to 54 years attributed to the following ICD-10 codes:

- F14 - accidental deaths due to cocaine use disorder;
- F15 - accidental deaths due to methamphetamine disorder;
- X42 with T40.5 - accidental deaths due to poisoning cross classified with cocaine poisoning; and
- X41 with T43.6 - accidental deaths due to poisoning cross classified with methamphetamine poisoning.

Because heroin (diacetylmorphine) is not readily identified by a specific ICD code, additional West Australian data is used, including a detailed examination of the full records of all coronial cases where heroin or its metabolites (eg monoacetylmorphine or morphine) have been identified through toxicological analysis.

This means there are likely to be differences between counts based on ICD cause of death codes which identify **opioid** deaths and data obtained from the detailed examination of WA coronial records which can specifically identify **heroin** related deaths.

There are also other important differences in interpretation of the cause of a HRD by the coding process used by the ABS. For instance, a Coroner distinguishes whether a HRD was accidentally caused, caused intentionally (ie suicide) or undetermined whether accidentally or intentionally caused. Additional demographic and toxicological data in relation to all confirmed HRDs is captured in the Coronial Database, which has been maintained since 1995, to identify other factors that can be associated with HRDs.

Information about the data concepts adopted by the ABS, in accordance with established principles determined by the International Classification of Diseases (ICD) system can be found in the ABS report, *Drug-induced deaths - a guide to ABS causes of death data*, published in 2002 (Cat 4809.0).

A description of the methodological procedures in relation to national data can be found in the following reports published by the National Drug & Alcohol Research Centre in 2006 - Degenhardt, L, Roxburgh A, Black A & Dunn M. *Accidental drug induced deaths due to opioids in Australia, 2004* and Degenhardt, L, Roxburgh A, Black A & Dunn M. *2004 Cocaine and amphetamine related drug induced deaths in Australia*.

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