7 Drugs and health

Introduction

This chapter presents information linking drug use to health. The first section looks at drug-related deaths and hospital episodes. The following sections present information relating to injecting drug users and drug overdose statistics, and the final section presents information relating to alcohol use and road fatalities.

Mortality and morbidity

Attributable cause

Most ill health, disease and death result from a cluster of causes, so it is difficult to identify the burden of any one single risk factor (such as tobacco smoking or obesity), particularly in an individual person. However, epidemiological techniques enable the estimation of the population burden of a specific risk factor within a particular disease or condition. One such technique applied in the area of drug use is the aetiological (causal) fraction, which is based on analyses of the rates of disease or death related to various levels of drug use (exposure) and produces a 'fraction' indicating the degree to which drug use is considered a contributory cause of the condition in question.

Aetiological fractions can be determined directly or indirectly. For some conditions, the aetiological fraction is 1.00, that is, the cause of death (or disease) is aetiologically defined. An example is death due to opiate poisoning, for which the aetiological fraction due to illicit drug use is 1.00. Compare this with stomach cancer: the aetiological fraction for this condition due to cigarette smoking is 0.091 for males and 0.061 for females (Ridolfo & Stevenson 2001).

Holman and Armstrong published detailed estimates of the attributable population burden of drug use in Australia in 1990, and English and Holman updated the methodology in 1995. The aetiological fractions developed by English and Holman were applied to the mortality and morbidity data presented in *Statistics on Drug Use in Australia 1998*. AIHW (Ridolfo & Stevenson 2001) has since revised the aetiological fractions used when determining mortality and morbidity estimates, and these fractions have been used in this report.

It should be noted that the aetiological fractions used in this report include the protective effects provided by some drugs (such as alcohol). This means that in some cases a certain level of consumption of a particular substance may actually reduce the probability of an individual contracting a particular illness, thus providing a net benefit for the population as a whole.

For example, it is now widely accepted that low-level alcohol consumption (1–2 standard drinks per day for men and less than 1 standard drink per day for women) may provide protection from a number of illnesses (NHMRC 2001). Recent evidence suggests that low to moderate regular drinking patterns may have a protective effect against heart disease and

heart attack among middle-aged and older people. Furthermore, low levels of alcohol consumption may protect some people from hypertension and cardiovascular disorders. It should be noted that populations at risk of these disorders, such as men over the age of 40 years and women aged 45 years and over, are the primary recipients of these benefits.

Deaths attributable to drug use

Drug use was a causal factor in the deaths of a large number of Australians in 1998 (Table 7.1). Approximately 19,000 deaths were attributable to tobacco use and 1,023 deaths were related to the use of illicit drugs. However, it was estimated that deaths related to alcohol use were more than offset by the deaths averted due to alcohol's protective health effect, so that overall, 2,371 net deaths were averted in 1998.

Among persons aged 0–34 years in 1998, alcohol contributed to 835 net deaths, compared with 659 deaths for illicit drugs and 179 deaths for tobacco.

Among persons aged 35 years and over, tobacco accounted for 18,840 deaths in 1998 and illicit drugs 364 deaths.

The beneficial health effect of alcohol was largest in persons aged 65 years and over where 4,436 net deaths were averted.

The main causes of tobacco-related deaths were cancer (39.7%), ischaemic heart disease (21.2%) and chronic obstructive pulmonary disease (20.2%).

The major causes of alcohol-related deaths where there was no protective effect were cancer (1,157 deaths), alcoholism and alcoholic cirrhosis of the liver (927 deaths) and road fatalities (440 deaths). In 1998, 4,066 net deaths due to cardiovascular disease were averted from beneficial alcohol consumption.

The main causes of illicit drug-related deaths were drug dependence (56.2%), poisoning (21.7%) and suicide (13.2%).

Table 7.1: Deaths attributable to drug use, by drug involved and cause of death, Australia, 1998

Substance and cause of death	Age group				
	0–14	15–34	35–64	65+	Total
			(number)		
Tobacco					
Direct smoking					
Cancer	–	–	1,829	5,713	7,542
Ischaemic heart disease	–	34	1,339	2,661	4,034
Chronic obstructive pulmonary disease	–	–	359	3,480	3,839
Other	76	46	505	2,849	3,476
Environmental smoking	23	–	10	95	128
Total tobacco	*99*	*80*	*4,042*	*14,798*	*19,019*
Alcohol					
Cancer	–	11	422	724	1,157
Alcoholism and alcoholic liver cirrhosis	–	44	583	300	927
Cardiovascular disease	–	–6	–486	–3,574	–4,066
Road injuries	15	273	130	22	440
Other	6	492	581	–1,908	–829
Total alcohol	*21*	*814*	*1,230*	*–4,436*	*–2,371*
Illicits					
Drug dependence	–	389	184	2	575
Poisoning	–	140	78	4	222
Suicide	–	103	32	–	135
Other	9	18	38	26	91
Total illicit drugs	*9*	*650*	*332*	*32*	*1,023*
Total drugs	**129**	**1,544**	**5,604**	**10,394**	**17,671**

Source: Ridolfo & Stevenson 2001.

Hospital episodes attributed to drug use

In 1997–98, 200,028 hospital episodes were attributed to drug use (Table 7.2). Tobacco smoking accounted for 142,525 hospital episodes, compared to alcohol with a net of 43,032 hospital episodes and illicit drugs with 14,471 hospital episodes. The health protective effect of low levels of alcohol consumption for some people averted 20,447 net hospital episodes, primarily for cardiovascular disease (17,955 net hospital episodes).

The main tobacco-related illnesses requiring hospitalisation were ischaemic heart disease, accounting for 37,120 hospital episodes (26.0%), chronic obstructive pulmonary disorder, which accounted for 28,269 hospital episodes (19.8%), and cancer, which accounted for 26,972 hospital episodes (18.9%).

Of the alcohol-related illnesses, alcoholism and alcoholic liver cirrhosis was the main reason for admission to hospital, accounting for 25,758 hospital episodes.

Of hospitalisations related to illicit drug use in 1997–98, drug dependence accounted for 6,336 hospital episodes (43.8%) and poisoning accounted for 2,439 hospital episodes (16.9%).

Table 7.2: Hospital episodes attributable to drug use, by drug involved and principal diagnosis, Australia, 1997–98

	Age group				
Substance and principal diagnosis	**0–14**	**15–34**	**35–64**	**65+**	**Total**
			(number)		
Tobacco					
Direct smoking					
Cancer	–	–	8,926	18,046	26,972
Ischaemic heart disease	–	398	25,762	10,960	37,120
Chronic obstructive pulmonary disease	–	–	5,899	22,370	28,269
Other	142	6,787	18,630	22,638	48,197
Environmental smoking	1,428	2	172	365	1,967
Total tobacco	*1,570*	*7,187*	*59,389*	*74,379*	*142,525*
Alcohol					
Cancer	–	113	3,078	2,849	6,040
Alcoholism and alcoholic liver cirrhosis	278	5,864	16,726	2,890	25,758
Cardiovascular disease	–	208	–7,622	–10,541	–17,955
Road injuries	410	3,711	1,442	283	5,846
Other	346	15,311	9,970	–2,284	23,343
Total alcohol	*1,034*	*25,207*	*23,594*	*–6,803*	*43,032*
Illicits					
Drug dependence	–	4,879	1,434	23	6,336
Poisoning	–	1,815	579	45	2,439
Other	44	4,182	1,044	426	5,696
Total illicit drugs	*44*	*10,876*	*3,057*	*494*	*14,471*
Total drugs	**2,648**	**43,270**	**86,040**	**68,070**	**200,028**

Source: Ridolfo & Stevenson 2001.

Injecting drug use and communicable disease

Data presented in this section on injecting drug use, HIV/AIDS, hepatitis C and risky behaviour is sourced from *2002 HIV/AIDS, Viral Hepatitis and Sexually Transmissible Infections in Australia: Annual Surveillance Report* (NCHECR 2002).

Injecting drug use and HIV/AIDS

The number of new AIDS diagnoses in Australia among people who had a history of injecting drug use decreased from 84 in 1993 to 10 in 2001 (Table 7.3). In 2001, 5.7% of new AIDS diagnoses were among injecting drug users, with 4.0% among injecting drug users with no male homosexual contact. Before 2001, the proportion of people who contracted AIDS and were injecting drug users remained stable at around 10% of new AIDS diagnoses.

Table 7.3: Number of AIDS diagnoses, by HIV exposure category, Australia, 1993 to 2001

	Year of AIDS diagnosis								
Exposure category	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999[a]**	**2000[a]**	**2001[a]**
					(number)				
Male homosexual contact	659	769	627	509	272	198	111	161	116
Male homosexual and injecting drug use	57	46	44	37	14	9	10	12	3
Injecting drug use[b]	27	29	28	24	18	24	10	15	7
Heterosexual contact	51	53	50	52	51	55	37	43	36
Haemophilia/coagulation disorder	11	10	15	7	4	1	1	3	–
Receipt of blood/tissue	8	8	6	6	1	4	1	1	–
Health care setting	1	1	1	–	–	–	–	–	–
Other/undetermined	26	27	31	34	20	21	18	17	13
Total[c]	**845**	**947**	**805**	**669**	**380**	**313**	**189**	**252**	**176**
					(per cent)				
Male homosexual contact	78.0	81.2	77.9	76.1	71.6	63.3	58.7	63.9	65.9
Male homosexual and injecting drug use	6.7	4.9	5.5	5.5	3.7	2.9	5.3	4.8	1.7
Injecting drug use[b]	3.2	3.1	3.5	3.6	4.7	7.7	5.3	6.0	4.0
Heterosexual contact	6.0	5.6	6.2	7.8	13.4	17.6	19.6	17.1	20.5
Haemophilia/coagulation disorder	1.3	1.1	1.9	1.0	1.1	0.3	0.5	1.2	–
Receipt of blood/tissue	0.9	0.8	0.7	0.9	0.3	1.3	0.5	0.4	–
Health care setting	0.1	0.1	0.1	–	–	–	–	–	–
Other/undetermined	3.1	2.9	3.9	5.1	5.3	6.7	9.5	6.7	7.4

(a) Adjusted for reporting delay; AIDS cases in previous years were assumed to be completely reported.

(b) Excludes males who also reported a history of homosexual contact.

(c) Includes persons whose sex was reported as transgender.

Source: National Centre in HIV Epidemiology and Clinical Research 2002.

The number of deaths from AIDS among injecting drug users decreased from 59 in 1993 to 16 in 2001 (Table 7.4). However, the proportion of AIDS deaths among people who had a history of injecting drug use increased from around 8.5% in 1993 to 16.8% in 2001.

Table 7.4: Number of deaths following AIDS, by HIV exposure category, Australia, 1993 to 2001

	Year of death following AIDS								
Exposure category	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999[a]**	**2000[a]**	**2001[a]**
					(number)				
Male homosexual contact	577	591	510	399	183	115	89	94	61
Male homosexual and injecting drug use	37	42	32	28	17	9	7	6	10
Injecting drug use[b]	22	13	25	19	12	5	7	9	6
Heterosexual contact	32	48	43	36	14	12	11	14	11
Haemophilia/coagulation disorder	5	15	9	10	4	–	4	3	1
Receipt of blood/tissue	9	9	8	3	2	1	1	–	2
Health care setting	–	1	2	–	–	–	–	–	–
Other/undetermined	11	23	21	20	10	13	7	10	4
Total[c]	**696**	**748**	**651**	**515**	**244**	**155**	**127**	**136**	**95**
					(per cent)				
Male homosexual contact	82.9	79.0	78.3	77.5	75.0	74.2	70.1	69.1	64.2
Male homosexual and injecting drug use	5.3	5.6	4.9	5.4	7.0	5.8	5.5	4.4	10.5
Injecting drug use[b]	3.2	1.7	3.8	3.7	4.9	3.2	5.5	6.6	6.3
Heterosexual contact	4.6	6.4	6.6	7.0	5.7	7.7	8.7	10.3	11.6
Haemophilia/coagulation disorder	0.7	2.0	1.4	1.9	1.6	–	3.1	2.2	1.1
Receipt of blood/tissue	1.3	1.2	1.2	0.6	0.8	0.6	0.8	–	2.1
Health care setting	–	0.1	0.3	–	–	–	–	–	–
Other/undetermined	1.6	3.1	3.2	3.9	4.1	8.4	5.5	7.4	4.2

(a) Adjusted for reporting delay; AIDS cases in previous years were assumed to be completely reported.

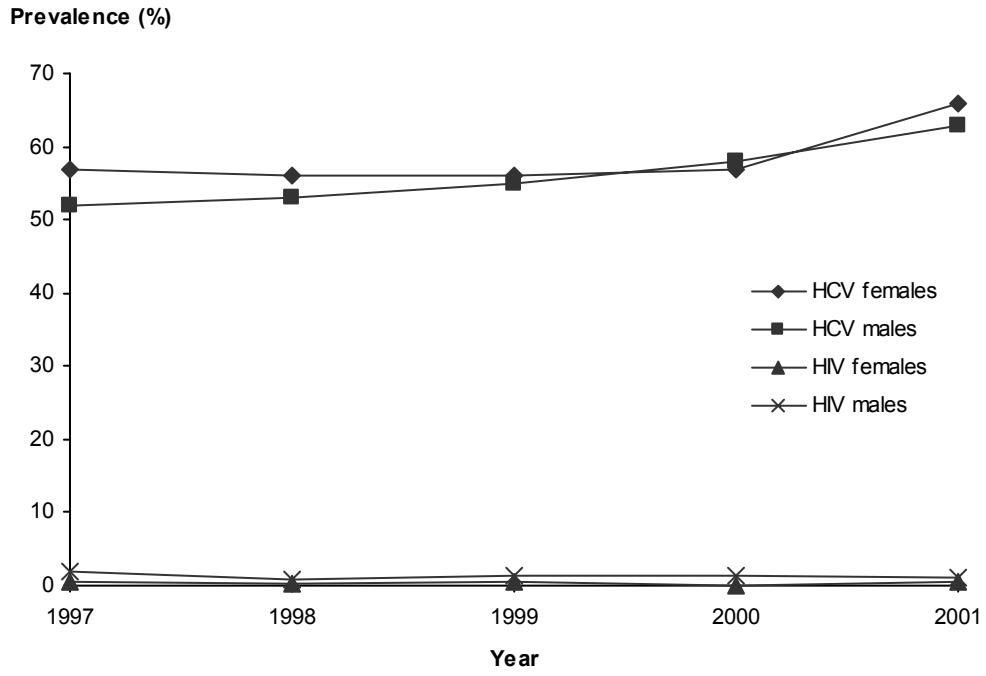
(b) Excludes males who also reported a history of homosexual contact.

(c) Includes persons whose sex was reported as transgender.

Source: National Centre in HIV Epidemiology and Clinical Research 2002.

Injecting drug use, HIV and hepatitis C

In contrast to the low prevalence of HIV, hepatitis C prevalence among people attending needle and syringe programs remained high over the period 1997 to 2001, with 63% of males and 66% of females testing positive to the hepatitis C virus antibody in 2001 (Figure 7.1). Hepatitis C prevalence among males and females reporting less than 3 years of drug injection steadily increased from 13% in 1997 to 28% in 2001 (NCHECR 2002).



(a) HIV and hepatitis C prevalence adjusted by estimated prevalence of injecting drug use in each State/Territory.

Source: National Centre in HIV Epidemiology and Clinical Research 2002.

Figure 7.1: HIV and hepatitis C prevalence[(a)] among people attending needle and syringe programs, by sex, Australia, 1997 to 2001

Injecting drug use and risky behaviour

The proportion of injecting drug users who reported using a needle and syringe after someone else in the previous month tended to decline over the period 1997 to 2001 (Table 7.5). The decrease was greater among females than males.

Over the period 1997 to 2001 there was no apparent correlation between the likelihood of using a needle and syringe after someone else and the length of injecting drug use.

Table 7.5: Reported use of a needle and syringe after someone else in the last month: proportion of injecting drug users[(a)], by sex and history of injecting drug use, Australia, 1997 to 2001

History of injecting drug use	1997	1998	1999	2000	2001
			(per cent)		
			Males		
Less than 3 years	11	13	20	12	12
3–5 years	16	18	18	14	8
6–10 years	17	19	26	16	19
11 or more years	15	15	20	15	15
Not reported	12	20	24	11	7
			Females		
Less than 3 years	24	25	25	23	18
3–5 years	20	32	27	22	18
6–10 years	20	18	22	29	13
11 or more years	16	14	21	15	11
Not reported	14	14	36	23	10
			Persons[(b)]		
Less than 3 years	16	18	22	16	14
3–5 years	18	23	21	17	12
6–10 years	18	19	25	21	17
11 or more years	15	15	20	15	13
Not reported	12	19	28	15	8

(a) Injecting drug users participating in surveys carried out at needle and syringe programs.

(b) Includes people whose sex was reported as transgender and people whose sex was not reported.

Source: National Centre in HIV Epidemiology and Clinical Research 2002.

Overdoses

The data presented in this section on non-fatal and fatal opioid overdoses was sourced from the 2001 Illicit Drug Reporting System (IDRS) and other published information from the National Drug and Alcohol Research Centre. For more information, readers are referred to these sources.

Non-fatal heroin overdoses

Since 2000, the IDRS has surveyed a sample of injecting drug users in all Australian State and Territory capital cities. As the sample size is small in each jurisdiction, readers are advised to take caution when interpreting the results presented here.

In 2001, 43% of injecting drug users surveyed for the IDRS had overdosed on heroin at some time in their lifetime (Table 7.6), while 16% of injecting drug users reported non-fatal heroin overdose on at least one occasion in the last 12 months. One in three injecting drug users was currently in treatment and 19% injected in a public place on the last occasion.

Table 7.6: Proportion of injecting drug users[(a)] reporting non-fatal heroin overdose, selected risk behaviours and protective factors for overdose, Australia, 2001

Measure	NSW n=163	Vic n=151	Qld n=102	WA n=100	SA n=100	Tas n=100	ACT n=100	NT n=135	Aust n=951
					(per cent)				
Ever overdosed	51	58	45	32	40	24	55	32	43
Overdosed last 12 months	23	27	16	15	16	8	13	5	16
Last injection in public place	42	21	14	7	9	18	22	10	19
Currently in treatment	29	44	37	24	34	52	49	25	36
Consumed alcohol and heroin on day prior to interview	7	10	2	2	3	–	6	3	5

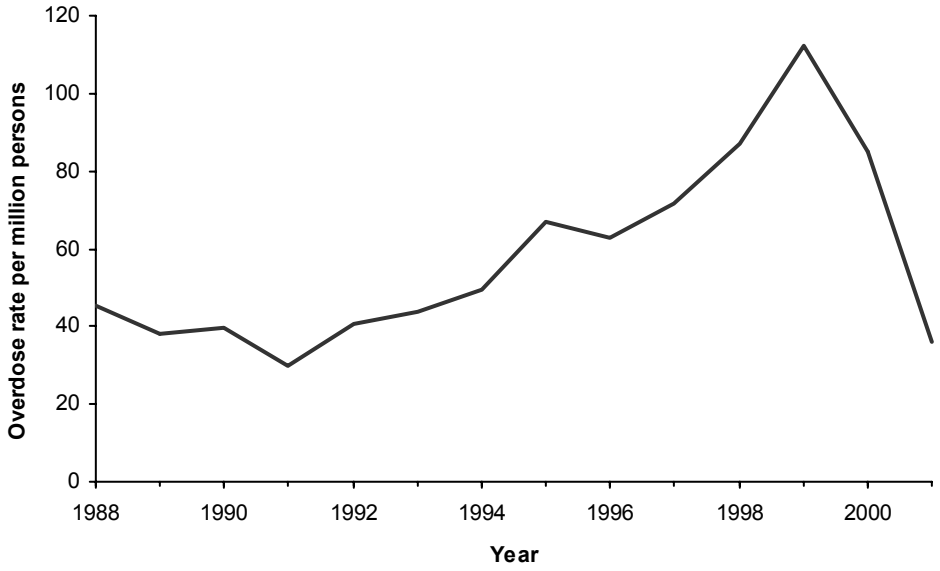
(a) Injecting drugs users surveyed for the Illicit Drug Reporting System.

Source: National Drug and Alcohol Research Centre, unpublished data.

Deaths caused by opioid overdose

The opioid class of substances includes heroin, morphine, codeine and synthetics such as pethidine and methadone.

The death rate from accidental opioid overdose among people aged 15–44 years increased from 45.3 deaths per million persons in 1988 to peak at 112.5 deaths per million persons in 1999, before declining sharply to 35.9 deaths per million persons in 2001 (Figure 7.2). This represented 347 deaths in 1988, 958 deaths in 1999, 725 deaths in 2000 and 306 deaths in 2001.



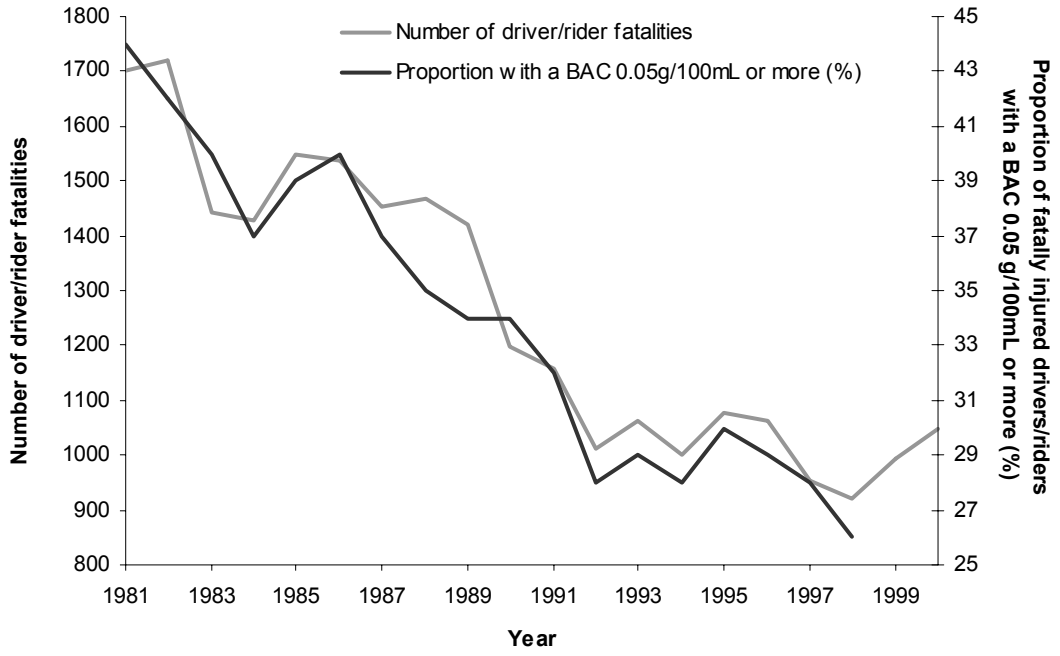
Source: Degenhardt 2002.

Figure 7.2: Opioid overdose deaths: rate per million population aged 15–44 years, Australia, 1988 to 2001

Fatal road accidents related to alcohol use

The total number of alcohol-related driver and motorcycle rider fatalities decreased from 1,703 in 1981 to 1,047 in 2000. Most of this decline occurred between 1981 and 1992, after which total fatalities have remained around 1,000 per year (Figure 7.3).

The proportion of fatally injured drivers and motorcycle riders with blood alcohol concentration of 0.05 g/100 mL or more decreased from 44% in 1981 to 26% in 1998. Most of this decrease occurred between 1981 and 1992, after which the proportion remained around 26–30%.



Note: Blood alcohol concentration (BAC) data were not available beyond 1998.

Sources: Australian Transport Safety Bureau 2001, 2002.

Figure 7.3: Fatally injured drivers and motorcycle riders, and proportion of fatally injured drivers/riders whose blood alcohol reading was higher than 0.05 g/100 mL, Australia, 1981 to 2000