

Chapter 3 Health Status and Outcomes

The proposed framework has as the first tier the health status and health outcomes for the Australian community. The indicators for this domain will help to answer the questions: How healthy are Australians? Is it the same for everyone? Where is the most opportunity for improvement? The dimensions covered by the first tier are shown in Table 3.1.

Table 3.1 Dimensions of the First Tier of the National Health Performance Framework

Health Status and Outcomes			
How healthy are Australians? Is it the same for everyone? Where is the most opportunity for improvement?			
Health Conditions	Human Function	Life Expectancy and Wellbeing	Deaths
Prevalence of disease, disorder, injury or trauma or other health-related states.	Alterations to body, structure or function (impairment), activities (activity limitation) and participation (restrictions in participation).	Broad measures of physical, mental, and social wellbeing of individuals and other derived indicators such as Disability Adjusted Life Expectancy (DALE).	Age and/or condition specific mortality rates.

Many of the measures listed under each dimension are well established, having an acceptable degree of data quality. Some development work is being undertaken in specific areas, including wellbeing, burden of disease and Disability Adjusted Life Expectancy. This will yield enhanced indicators in the future.

Example indicators

This chapter contains some examples of indicators that could be used to report on the health status and health outcomes for Australians. Table 3.2 shows how the sample indicators described in this chapter relate to the dimensions within the tier.

Table 3.2 Example indicators

Example indicator	Dimension within Tier 1
International comparison of Disability Adjusted Life Expectancy (DALE)	Life expectancy and wellbeing
Burden of disease for major disease groups, health conditions and injury	Relates to all dimensions
Burden of disease for mental health	Relates to all dimensions
Self-assessed health status by age	Life expectancy and wellbeing
Indigenous and non-Indigenous infant mortality rates	Deaths
Deaths from suicide and self-inflicted injury by sex	Deaths
Premature deaths attributable to drug and alcohol misuse by sex	Deaths

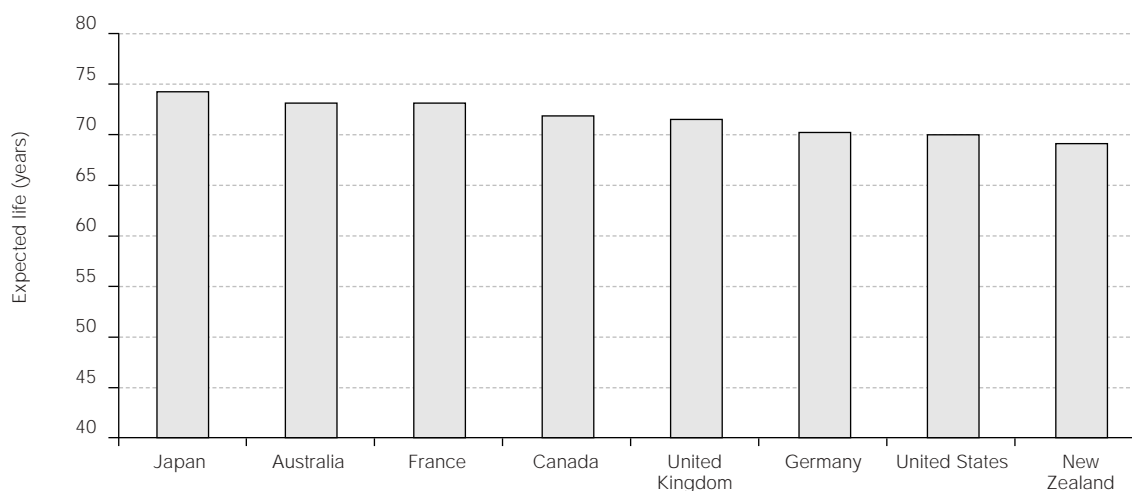
These descriptive indicators were chosen to represent the major issues encompassed within this domain, for which there are established measures and available national data. The indicators presented illustrate what could be provided in future reports for this tier.

Issues

Although there has been considerable work in describing the health status of Australians, there are a number of areas that do not have adequate indicators. In particular, improved methods are needed to address the questions 'Is it the same for everyone?' and 'Where is the most opportunity for improvement?' Developing indicators for these areas and the relevant national data sets will take time. In some cases, the nature of the link between the measure and the health status needs to be established.

New data collections may be required to report on indicators for this domain. These will need to be resourced and developed via the established national health information development processes.

Example indicator 3.1 International comparison of Disability Adjusted Life Expectancy (DALE)



Ranked order of disability adjusted life expectancy for population (selected countries), 1999

Rank	Country	Expected life in years	Rank	Country	Expected life in years
1	Japan	74.5	12	Canada	72.0
2	Australia	73.2	14	United Kingdom	71.7
3	France	73.1	15	Norway	71.7
4	Sweden	73.0	22	Germany	70.4
6	Italy	72.7	24	United States	70.0
7	Greece	72.5	28	Denmark	69.4
8	Switzerland	72.5	31	New Zealand	69.2

Source: World Health Organization (2000), *The World Health Report 2000, Health Systems – Improving Performance*, Annexe table 5, p. 176.

- The WHO Report, 2000 has used disability-adjusted life expectancy (DALE) to assess overall population health as this measure is directly comparable to life expectancy estimated from mortality alone and is readily comparable across populations. This measure converts the total life expectancy to the equivalent number of years of good health.
- Australia enjoys one of the highest life expectancies in the world and has an estimated healthy life expectancy for the population of 73.2 years in 1999, second in the world behind Japan (at 74.5 years). Other countries ranked significantly lower included Canada 12th (72.0 years), New Zealand 31st (69.2 years), United Kingdom 14th (71.7 years) and the United States 24th (at 70.0 years).
- Countries selected for DALE comparison in the table are from more developed regions of the world. The disability adjusted life expectancies of less developed countries are considerably lower.
- While the overall life expectancy figure for Australia is high, for certain sub-population groups e.g. Aboriginal and Torres Strait Islander peoples, it is much lower.

For further information see:

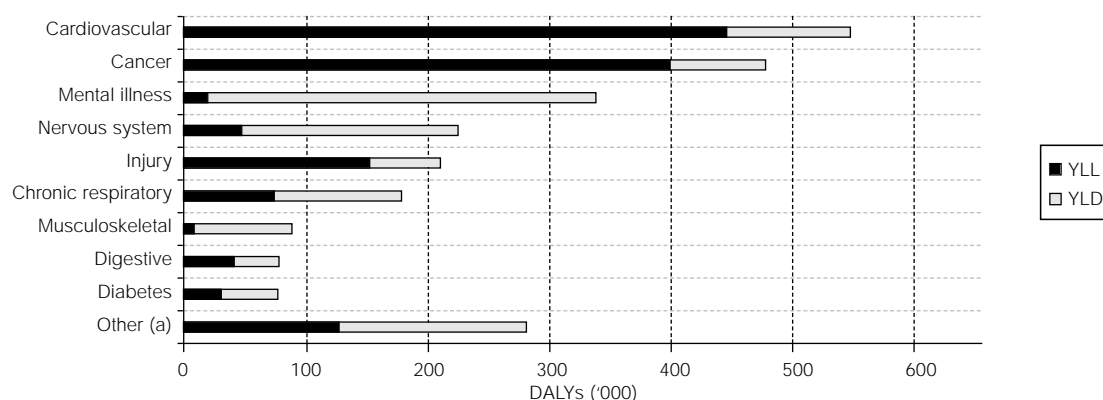
Appendix 2 of this report.

World Health Organization (2000), *The World Health Report 2000, Health Systems – Improving Performance*, Geneva.
Murray C. Salamon J.A. and Mathers C. (1999), *A Critical Examination of Summary Measures of Population Health*, GPE Discussion Paper no. 12, World Health Organization, Geneva.

Web site:

<http://www.who.int/>

Example indicator 3.2 Burden of disease for major disease groups, health conditions and injury



(a) Includes Genitourinary, Infectious, Congenital, Respiratory infections, Neonatal conditions and 'other' diseases, conditions or injuries.

Burden of disease (YLL, YLD and total DALYs) for major disease groups, health condition or injury, Australia, 1996

Major disease group, health condition or injury	YLL	YLD	DALY	Major disease group, health condition or injury	YLL	YLD	DALY
	– '000 –				– '000 –		
Cardiovascular	447	100	547	Diabetes	31	45	77
Cancer	400	79	478	Genitourinary	15	46	61
Mental illness	18	320	338	Infectious	28	19	47
Nervous system	48	177	225	Congenital	19	19	37
Injury	152	58	210	Respiratory infections	16	15	31
Chronic respiratory	76	104	180	Neonatal conditions	21	9	30
Musculoskeletal	7	82	89	Other	29	45	74
Digestive	41	36	77				

Source: Australian Institute of Health and Welfare (1999), *The Burden of Disease and Injury in Australia*, by Mathers C. Vos T. and Stevenson C., AIHW Cat. no. PHE 17, Canberra.

- Disability Adjusted Life Years (DALYs) for a disease or health condition are calculated as the sum of the years of life lost due to premature mortality (YLL) in the population and the years lived with a disability (YLD) for incident cases of the health condition. One DALY equals one lost year of 'healthy' life (see Glossary).
- In Australia in 1996, DALYs were highest for cardiovascular disease and cancer – mainly due to premature mortality from these causes.
- DALYs for mental illness, nervous system and musculoskeletal conditions were due mainly to years lived with a disability.
- The DALY methodology provides a way to link information on disease causes and occurrence to information on both short-term and long-term health outcomes, including impairments, functional limitations (disability) and death. The burden of disease methodology is designed to inform health policy in relation to the distribution of health problems between subpopulations. It also provides a common metric of health benefits derived from preventive, curative or rehabilitative interventions in cost-utility analyses.

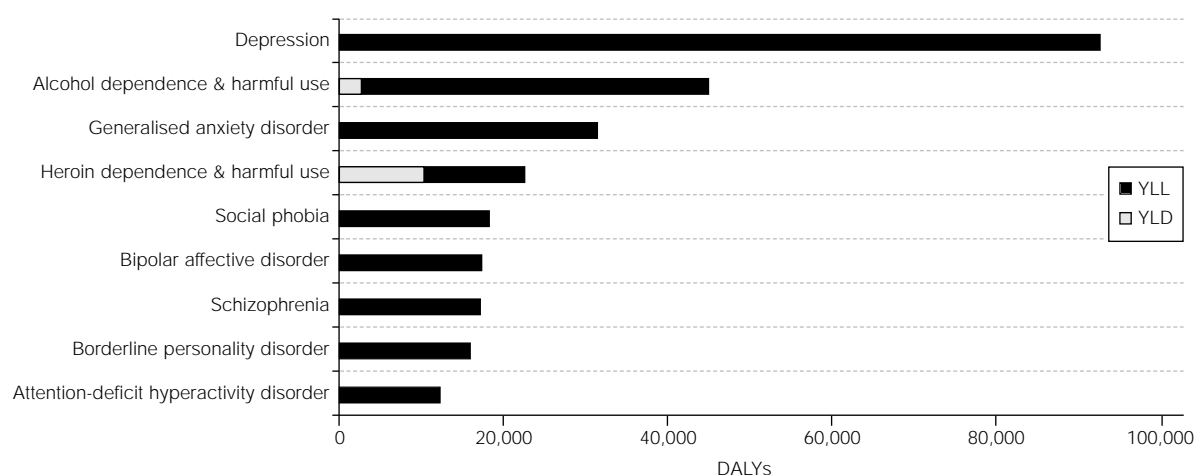
For further information see:

Australian Institute of Health and Welfare (1999), *The Burden of Disease and Injury in Australia*, by Mathers C. Vos T. and Stevenson C., AIHW Cat. no. PHE 17, Canberra.

Web site:

<http://www.aihw.gov.au/>

Example indicator 3.3 Burden of disease for mental health



Burden of disease – mental health (YLL, YLD and DALYs) for major category of mental disorder, Australia, 1996

Category of mental disorder	YLL	YLD	DALYs	Category of mental disorder	YLL	YLD	DALYs
Depression	221	92,795	93,016	Anorexia nervosa	214	5,621	5,835
Alcohol dependence and harmful use	4,308	41,065	45,372	Panic disorder	4	5,588	5,592
Generalised anxiety disorder	0	31,830	31,830	Bulimia nervosa	41	5,300	5,340
Heroin dependence and harmful use	10,457	12,719	23,175	Obsessive-compulsive disorder	0	4,699	4,699
Social phobia	0	18,613	18,613	Agoraphobia	0	4,600	4,600
Bipolar affective disorder	37	17,661	17,698	Cannabis dependency and harmful use	0	4,416	4,416
Schizophrenia	272	17,416	17,688	Mental retardation (no defined aetiology)	66	3,506	3,572
Borderline personality disorder	0	16,371	16,371	Other drug dependency and harmful use	2,149	1,319	3,468
Attention-deficit hyperactivity disorder	0	12,959	12,959	Benzodiazepine dependency and harmful use	143	2,968	3,111
Post-traumatic stress disorder	0	7,693	7,693	Separation anxiety disorder	0	2,648	2,648
Autism and Asperger's syndrome	0	5,897	5,897	Other mental disorders	305	0	305

Source: Australian Institute of Health and Welfare (1999), *The Burden of Disease and Injury in Australia*, by Mathers C, Vos T. and Stevenson C., AIHW Cat. no. PHE 17, Canberra.

- In Australia in 1996, mental illness was responsible for 13.3% of total DALYs (0.8% of all deaths, 1.4% of YLL and 27.2% of YLD). The burden of mental disorders was dominated by years lived with a disability. This perspective would be lost if relying on deaths data alone.
- Depression was the major cause of mental illness burden, followed by alcohol dependence and harmful use and generalised anxiety disorder.

For further information see:

Commonwealth Department of Health and Aged Care and Australian Institute of Health and Welfare (1999), *National Health Priority Areas Report: Mental Health 1998*, Canberra.

Australian Institute of Health and Welfare (1999), *The Burden of Disease and Injury in Australia*, by Mathers C. Vos T. and Stevenson C., AIHW Cat. no. PHE 17, Canberra.

Vos T, Mathers C. (2000), The burden of mental disorders: A comparison of methods between the Australian burden of disease studies and the Global Burden of Disease Study, *Bulletin of the World Health Organization*, 78:427–38.

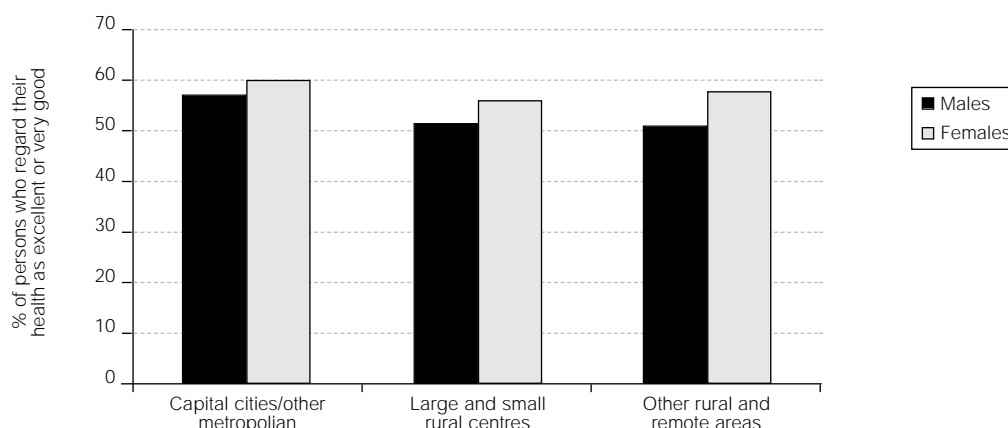
Web sites:

<http://www.aihw.gov.au/>

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Example indicator 3.4 Self-assessed health status by age

Self-assessed health status by section of state, Australia, 1997



Self-assessed health status by age groups (a), Australia, 1997

Age group (years)	Excellent (very good)	Good	Fair/poor
	- % -		
18-24	64.1	27.2	8.7
25-34	65.4	26.6	8.1
35-44	65.6	24.7	9.7
45-54	56.4	27.8	15.8
55-64	46.9	31.3	21.8
65-74	39.1	34.4	26.5
75+	36.8	29.9	33.4
All ≥ 18	57.3	28.0	14.7

(a) Figures are age-adjusted to the 1991 total Australian population.

Source: Australian Institute of Health and Welfare (unpublished work), Analysis of the results of the National Survey of Mental Health and Wellbeing (ABS 1998, Cat. no. 4326.0).

- Self-rated health is a measure of individuals' perceptions of their health generally. It is believed to principally reflect physical health problems (acute and chronic conditions and physical functioning) and to a lesser extent, health behaviours and mental health problems (Cott et al, 1999).
- Longitudinal studies worldwide have consistently shown that global self-rated health is a strong and independent predictor of subsequent illness and premature death (Idler and Benyamini, 1997). In 1997, most Australians rated their health as good, very good or excellent.
- The proportion of people rating their health as fair or poor increased with age, from 8.7% among those aged 18-24 years to 33.4% among those aged 75 years or more.
- When self-ratings of physical and mental health are examined separately, ratings of physical health decline with age, but ratings of mental health do not (AIHW, 2000).
- The proportion of males who reported that their health was excellent or very good was consistently lower than females, declining from 57.5% of all males in capital and metropolitan cities to 51.3% in smaller rural and remote areas.

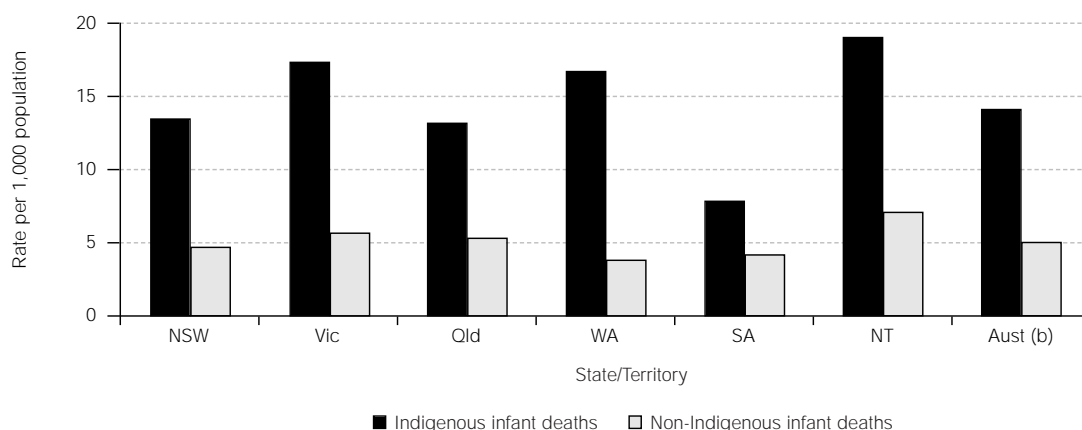
For further information see:

Australian Institute of Health and Welfare (2000), *Australia's Health 2000: The Seventh Biennial Health Report of the Australian Institute of Health and Welfare*, AIHW, Canberra.

Cott C.A. Gignac M.A. and Badley E.M. (1999), 'Determinants of self rated health for Canadians with chronic disease and disability', *Journal of Epidemiology Community Health*, 53: 731-6.

Idler E.L. and Benyamini Y. (1999), 'Self-rated health and mortality: A review of twenty-seven community studies', *Journal of Health and Social Behaviour*, 38: 21-37.

Example indicator 3.5 Indigenous and non-Indigenous infant mortality rates



Indigenous and non-Indigenous infant mortality rates, by jurisdiction, 1999

State/Territory	Indigenous infant deaths		Non-Indigenous infant deaths		Total infant deaths (a)	
	Number	Rate	Number	Rate	Number	Rate
NSW	41	13.4	394	4.7	504	5.8
Vic	9	17.3	322	5.6	331	5.6
Qld	39	13.1	227	5.3	266	5.7
WA	26	16.7	88	3.8	117	4.7
SA	5	7.8	72	4.2	78	4.3
NT	27	19.0	15	7.1	42	11.7
Aust (b)	149	14.1	1,186	5.0	1,408	5.7

(a) Includes 'not stated' Indigenous status.

(b) Excludes data for ACT and Tasmania that was not reported due to small numbers.

Source: Australian Bureau of Statistics (ABS) (2000), *Deaths Australia, 1999*, Cat. no. 3302.0.

- Infant mortality rates are defined as the number of deaths of children under one year of age in a calendar year per 1,000 live births in the same calendar year.
- Indigenous data should be interpreted with caution as:
 - a significant proportion of Indigenous deaths are not registered as Indigenous;
 - based on 1996 Census-based expectancies the level of coverage for Indigenous identification ranged from 43% in New South Wales to 83% in the Northern Territory; and
 - there are also deficiencies in Indigenous identification in birth registrations data.
- Variation in Indigenous infant mortality rates between jurisdictions should be interpreted with care as they may reflect variations in identification of Aboriginal and Torres Strait Islander peoples in both death and birth registration data collections.
- The 1999 Indigenous infant mortality rate was at least 2.5 times the total infant mortality rate for Australia. However, this is likely to underestimate the true ratio.

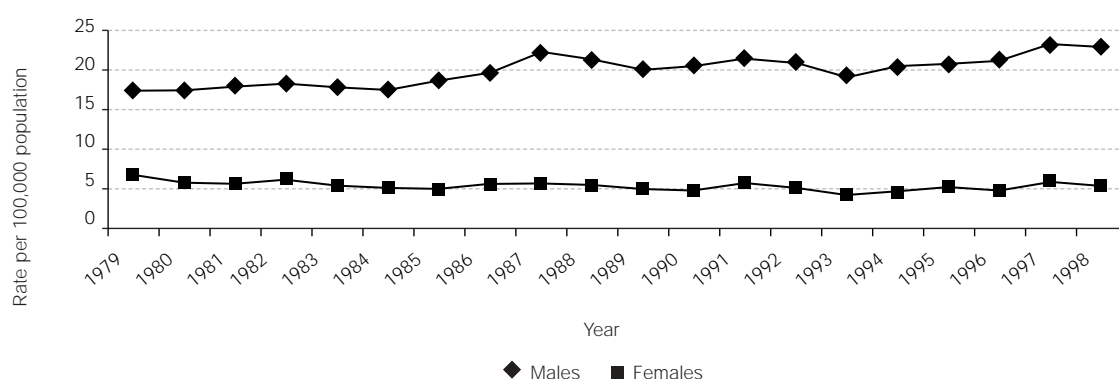
For further information see:

Australian Institute of Health and Welfare (1994–2001), *Australia's Mothers and Babies 1992–1999*, Perinatal Statistics Series Nos. 1–3, 5–10.

Australian Bureau of Statistics and Australian Institute of Health and Welfare (1999), *Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples, 1999*, ABS Cat. no. 4704.0, Canberra.

Australian Institute of Health and Welfare (1996), *Indigenous Mothers and their Babies 1991–1993*, Perinatal Statistics Series no. 4, AIHW National Perinatal Statistics Unit, Sydney.

Example indicator 3.6 Deaths from suicide and self-inflicted injury by sex



Deaths from suicide and self-inflicted injury by sex, Australia 1979–98 (a)

	1979	1982	1985	1988	1991	1994	1995	1996	1997	1998
– Rate per 100,000 deaths –										
Males	17.6	18.5	18.8	21.5	21.7	20.7	20.9	21.3	23.5	23.1
Females	6.9	6.3	5.1	5.6	5.9	4.7	5.4	4.9	6.1	5.6
– Number of deaths –										
Males	1,198	1,318	1,428	1,730	1,847	1,830	1,873	1,931	2,146	2,150
Females	479	459	399	467	513	428	495	462	577	533

(a) Suicide and self-inflicted injury classified according to the ICD-9 external cause codes E950–959.

Source: Australian Institute of Health and Welfare Mortality database.

- Suicide is a leading cause of death in Australia, responsible for 2,683 deaths (2,150 males, 533 females) in 1998.
- The rate of suicides among males has risen since 1979, mainly due to increased suicides among young men aged 15–24 years. Death rates in 1997 and 1998 (23 per 100,000 population) recorded the highest male suicide rates in the past 20 years.
- The female suicide death rate has remained close to 5 per 100,000 population over the past 20 years. However, the suicide rate has risen among young females, and the rate of suicide attempts has also increased among women (AIHW, 2000).
- Suicide and self-harm accounted for 20,131 hospital separations during 1997–98, more than 53,000 patient-days in total. These figures include people who died in hospital following the suicide attempt (AIHW, 2000, p. 82).
- Hanging has become the predominant method of suicide in Australia, with 1,217 suicide deaths by hanging, strangulation and suffocation in 1998 (AIHW, 2000, p. 8).

For further information see:

Australian Institute of Health and Welfare (2000), *Australia's Health 2000: The Seventh Biennial Health Report of the Australian Institute of Health and Welfare*, Canberra.

National Injury Surveillance Unit (2000), 'Suicide in Australia: Trends and Data for 1998', by Harrison J. E. and Steenkamp M., Australian Injury Prevention Bulletin no. 23, AIHW Cat. no. INJ 25, AIHW National Injury Surveillance Unit, Flinders University of South Australia, Adelaide.

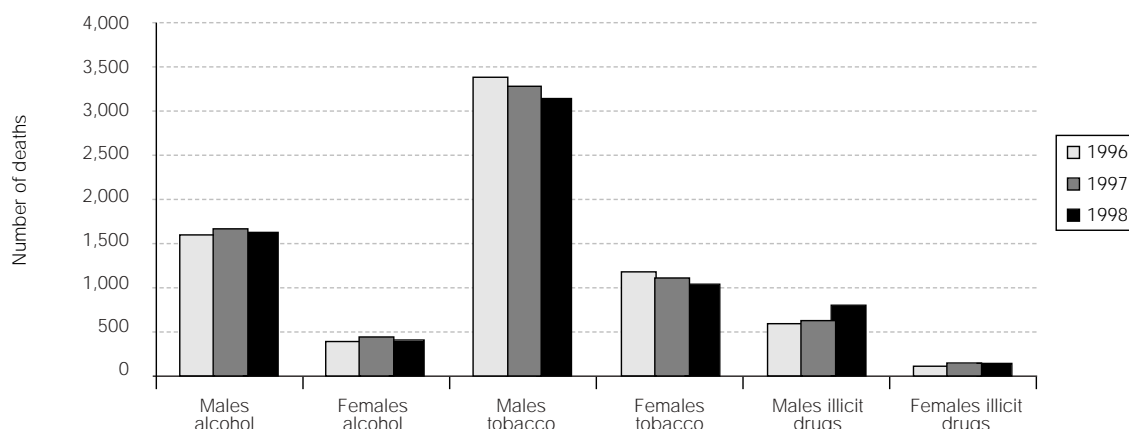
Australian Institute of Family Studies (2000), *Valuing Young Lives: Evaluation of the National Youth Suicide Prevention Strategy*, by Mitchell P., Melbourne.

Web sites:

<http://www.nisu.flinders.edu.au/>

<http://www.aihw.gov.au/>

<http://www.aifs.org.au/>

Example indicator 3.7 Premature deaths attributable to drug and alcohol misuse by sex**Premature deaths attributable to drug and alcohol misuse by sex, Australia, 1996–1998 (a)**

	Males			Females		
	1996 (c)	1997 (c)	1998	1996 (c)	1997 (c)	1998
Alcohol						
Cancer	239	258	248	187	186	185
Alcoholism & alcoholic liver disease	513	539	477	148	160	150
Road injuries	402	370	367	53	61	51
Other (b)	457	506	538	18	54	49
Total Alcohol (c)	1,612	1,673	1,631	407	461	434
Tobacco	3,400	3,297	3,157	1,181	1,125	1,062
Illicit drugs	615	666	824	139	166	166
Total	5,627	5,637	5,612	1,727	1,752	1,663

Note: In some cases components may not add to totals due to rounding.

(a) 'Premature death' defined as death among persons aged less than 65 years.

(b) Figures relate to net result as some deaths are prevented by the use of alcohol in older age groups.

(c) Figures are derived using published estimates from Ridolfo and Stevenson 2001.

Source: Ridolfo B. and Stevenson C. (2001), *The Quantification of Drug-Caused Mortality and Morbidity in Australia, 1998*, AIHW Cat. no. PHE 29, (Drug Statistics Series no. 7), Canberra.

- The misuse of alcohol, tobacco and illicit drugs contributes to significant numbers of deaths in Australia each year. Preventing the harmful use of alcohol and all use of tobacco and illicit drugs could prevent around 7,000 deaths each year of Australians less than 65 years old.
- In 1998, alcohol misuse caused an estimated 2,065 deaths in Australians less than 65 years old, tobacco use an estimated 4,219 deaths and illicit drugs an estimated 990 deaths.
- Across all categories, the number of deaths was higher for males than for females.
- The number of alcohol and tobacco related deaths was stable between 1996 and 1998, while the number of illicit drug deaths increased by almost one-third over this period.

For further information see:

Ridolfo B. and Stevenson C. (2001), *The Quantification of Drug-Caused Mortality and Morbidity in Australia, 1998*, AIHW Cat. no. PHE 29 (Drug Statistics Series no. 7), Canberra.

Australian Institute of Health and Welfare (1999), *The Burden of Disease and Injury in Australia*, by Mathers C. Vos T. and Stevenson C., AIHW Cat. no. PHE 17, Canberra.

Web site:

<http://www.aihw.gov.au/>