

blocked drains and sewage overflows and leakage. It is a major health risk associated with the increased risk of vectorborne diseases (diseases spread by insects such as mosquitoes). In 2001, 137 communities (or 42% of communities with a usual population of 50 or more) reported ponding—for 46% of these communities ponding occurred more than five times in that year. Flooding also creates health-related problems. Flooding occurred in 31% of discrete Indigenous communities, affecting 3% of all permanent dwellings in communities of this size (ABS & AIHW 2003).

## 4.5 Socioeconomically disadvantaged people

Adverse social and economic circumstances can affect health throughout life. People who are poorer, or socially disadvantaged in other ways, live shorter lives and suffer more illness than those who are well off. This effect is not limited just to the extreme poor—a gradient in health is apparent across all levels of society. Even those at the middle levels of society exhibit poorer health than do the wealthy (Wilkinson & Marmot 2003).

Socioeconomic disadvantage can have many forms, including low income, poor education, unemployment, limited access to health services, living in poor housing and working in an unrewarding or menial job. Alone or in combination, and over time, these stressful economic and social circumstances have an effect on health and wellbeing.

Most forms of socioeconomic disadvantage can be measured and linked to adverse health outcomes, although their relative contribution and their interaction continue to be debated and researched (Turrell & Mathers 2000). Composite measures of socioeconomic status, often based on area of residence, have also been devised. The most commonly used measure by area of residence is the Socio-Economic Indexes for Areas, or SEIFA, derived by the ABS from population census data (ABS 2003d).

### Risk factors

The relationship between socioeconomic disadvantage as a risk factor for ill health and its interaction with other health risk factors has already been discussed in Chapter 3. Results from the 2001 National Health Survey continue to show that persons from lower socioeconomic groups are more likely to smoke, exercise less, be obese, and have few or no usual daily serves of fruit (ABS 2002b; AIHW: O'Brien & Webbie 2003). These are variously risk factors for a number of major health conditions such as lung cancer, and cardiovascular and respiratory diseases (Table 4.9).

### Major illnesses and health service use

Among the long-term health conditions covered in the 2001 National Health Survey, those reported more often by disadvantaged people included diabetes, diseases of the circulatory system, arthritis and diseases of the ear. The survey also found that the socioeconomically disadvantaged report greater use of doctors and hospital outpatient/casualty services, but are less likely to use preventive health services, such as breast cancer screening and Pap smear testing (Table 4.9).

**Table 4.9: Proportion with selected health risk factors, long-term conditions and health actions by socioeconomic position, 2001 (per cent)**

	Quintile of socioeconomic disadvantage	
	Most disadvantaged (1st quintile)	Least disadvantaged (5th quintile)
<b>Selected health risk factors</b>		
Current smoker	32.0	17.0
Risky/high alcohol use	10.3	11.8
Sedentary/low exercise level	73.9	64.5
Overweight/obese	46.0	43.1
Low/no usual intake of fruit	50.7	44.1
<b>Selected long-term conditions</b>		
Asthma	12.1	11.2
Diabetes	4.2	1.9
Diseases of the circulatory system	21.0	14.7
Arthritis	17.5	11.0
Diseases of the ear and mastoid	15.1	11.6
<b>Selected actions</b>		
Casualty, outpatients, day clinic visits	5.5	3.9
Doctor consultation	28.9	22.4
Private health insurance	30.3	71.2
Breast cancer screening	66.8	71.4
Pap smear test	47.0	59.4

Source: ABS 2002b.

## Mortality and life expectancy

The relationship between mortality and socioeconomic disadvantage in Australia has been well documented. Draper et al. (in press) found that people with low socioeconomic status have higher rates of mortality for almost all causes of death, markedly higher in numerous cases. In 1998–2000, the all-cause mortality rate for males aged 25–64 years in the most disadvantaged population quintile (fifth) was 75% higher than the rate for males in the least disadvantaged quintile (377 compared to 215 deaths per 100,000 population). For females, the all-cause mortality rate in the most disadvantaged quintile was 52% higher (204 compared to 135 deaths per 100,000 population). The lung cancer mortality rate in the most disadvantaged quintile was 102% higher for males and 73% higher for females; for ischaemic (coronary) heart disease, 107% for males and 170% for females; for stroke, 93% for males and 84% for females; for diseases of the respiratory system, 181% for males and 143% for females; and for accidents and injury, 124% for males and 103% for females.

Life expectancy at birth during the same time period varied from 79.2 years for males in the least disadvantaged quintile to 75.3 years for males in the most disadvantaged quintile. For females, the corresponding figures were 83.6 and 81.6 years.

The ABS found that of the total years of potential life lost due to premature death in 1997–1999, 24% came from the most disadvantaged quintile of the population, whereas only 15% came from the least disadvantaged quintile (ABS 2001a).

## 4.6 Health of people in rural and remote areas

Just over one-third (34%) of Australians live in regional and remote areas (that is, outside cities with populations greater than 250,000 people). These people live in a range of environments: in large regional centres, in coastal settlements, in small inland towns, on farms and in so-called 'outback' Australia. Their common feature is that they live some distance from the major population centres. The following discussion about the health of people living in rural and remote areas uses the geographical terms Major Cities, Inner Regional, Outer Regional, Remote and Very Remote – see next section for more detail.

As a broad generalisation, those who live outside Major Cities tend to have higher levels of health risk factors and somewhat higher mortality rates than those in the cities. Statistics on mortality are given in some detail below but some observations may help explain the findings. First, compared with people in Major Cities, those living elsewhere are more likely to be smokers; to drink alcohol in hazardous quantities; to be overweight or obese; to be physically inactive (AIHW: Strong et al. 1998); to have lower levels of education; and to have poorer access to work, particularly skilled work (Garnaut et al. 2001). They also have less access to specialist medical services and a range of other health services (AIHW: Strong et al. 1998). In addition, numerous rural occupations (for example farming, forestry, fishing and mining) are physically risky, and travelling on country roads can be more dangerous because of factors such as higher speeds, fatigue and animals on the road (AIHW: Strong et al. 1998). A final feature is that Remote and Very Remote areas have substantial Indigenous populations, and Indigenous health is poor overall (ABS & AIHW 2003).

Despite these general patterns, there is considerable variation within each broad geographical area. Remoteness does not guarantee poorer health, just as living in a large population centre does not guarantee the opposite. For example, populations in some metropolitan fringe and inner-city areas have relatively poor health (Burnley 1994), and between 1993 and 1999 about half of all statistical local areas (SLAs) in Very Remote areas had lower death rates than the Major Cities (AIHW 2003e). However, of those SLAs that had higher rates, about half had rates that were at least twice as high as Major Cities. Similarly, the levels of some health-related factors (such as immunisation rates (NCIRS 2004)) also vary within broad geographic areas.

A major problem in understanding the health of people in regional and remote areas is the limited availability, representativeness and quality of data. Very few data sources are complete, accurate, regionally representative and unambiguous enough to allow meaningful comparisons between populations from different areas (AIHW 2003f). Also, because Indigenous Australians make up a substantial proportion of the population of rural and (particularly) remote areas, 'Indigenous' and 'rural/remote' issues can frequently be related. For example, overall rates of cervical cancer death tend to be higher in remote areas, but not in the non-Indigenous people who live there (AIHW 2003c; AIHW 2003e). The major challenge in this case is therefore one of Indigenous health, not the health of those living in remote areas as such. However, data sets that allow distinctions such as this are uncommon because the identification of Indigenous people is usually incomplete (ABS 2000).

Another difficulty in interpreting the data is that different patterns of service provision in city, regional and remote areas can lead to invalid comparisons of resource usage and access to services (AIHW 2003f). For example, rural areas make greater use than cities of

hospital emergency departments as a source of primary care services and of hospital beds as a source of aged care services. This factor complicates inter-regional comparisons of hospital usage, aged care and provision of primary health care.

## Geography and populations

A number of geographical classifications have been developed so that areas can be compared statistically. The ABS Australian Standard Geographic Classification (ASGC) Remoteness Areas classification allocates a category of remoteness to areas based on an average of the road distance to the closest of five classes of service centre (ABS 2001b; AIHW 2004). Areas are classified as Major Cities, Inner Regional or Outer Regional (referred to here as 'regional' when taken together), or Remote and Very Remote ('remote' when taken together). The bulk (66%) of the Australian population lives in Major Cities, 31% in regional areas and 3% in remote areas. Indigenous people live mainly in Major Cities (30%) and regional areas (43%), with the remaining 27% living in remote areas where they comprise 24% of the population (45% in Very Remote areas) (Table 4.10).

**Table 4.10: Distribution of the Indigenous and total populations within each ASGC Remoteness Area, 2001**

	MC	IR	OR	R	VR	Australia
<b>Indigenous</b>						
% of population in the area	1	2	5	12	45	2
% of national Indigenous population	30	20	23	9	18	100
<b>All Australians</b>						
% of national population	66	21	10	2	1	100

*Note:* MC, IR, OR, IR, R and VR, represent the categories of Major Cities, Inner Regional, Outer Regional, Remote and Very Remote areas respectively.

*Source:* AIHW population database, based on SLA resident population estimates compiled by ABS.

## Mortality

In regional areas during 1997–1999, death rates were, on average, 1.1 times those in Major Cities. In Very Remote areas, rates were 1.5 times as high as in Major Cities (AIHW 2003e).

These higher death rates correspond to about 3,303 more deaths annually outside Major Cities than expected if Major City death rates had applied. This comprises 2,757 more deaths than expected in regional areas annually, and 546 more in remote areas.

Table 4.11 shows the specific causes for these 'excess' deaths. Most were due to cardiovascular diseases (such as coronary heart disease) and injury (especially motor vehicle accidents and suicide). Chronic obstructive pulmonary disease, diabetes and some cancers (mainly prostate, colorectal and lung) also contributed. Many of these causes are potentially preventable.

When overall death rates for non-Indigenous people are compared across areas, they remain higher in regional areas than in Major Cities, but the picture in remote areas is less clear. However, death rates of older non-Indigenous people from Remote areas are frequently lower than those in Major Cities, possibly due to migration of the frail aged to less remote areas so they can have better access to services. When analysis is restricted to non-Indigenous people younger than 65 years of age, rates for Inner

Regional males and for regional females were 1.1 times those for Major Cities, while rates for Outer Regional and remote area males were 1.2 times those for Major Cities. Rates were elevated, but not significantly higher, for remote area females.

It is not possible to compare Indigenous death rates across areas because of uncertainty about the accuracy of Indigenous identification in each area (AIHW 2003e).

**Table 4.11: Leading causes of 'excess' deaths in areas outside Major Cities, 1997-1999**

Cause of death	Annual 'excess' deaths	Per cent of total 'excess'
Coronary (ischaemic) heart disease	755	23
'Other' cardiovascular diseases <sup>(a)</sup>	518	16
Chronic obstructive pulmonary disease	374	11
Motor vehicle accidents	368	11
Diabetes	191	6
Suicide	184	6
'Other' injuries <sup>(b)</sup>	214	6
Prostate cancer	131	4
Colorectal cancer	112	4
Lung cancer	52 <sup>(c)</sup>	2 <sup>(c)</sup>
All other causes	399	12
All causes	3,303	100

(a) Excludes stroke and rheumatic heart disease.

(b) 'Other' injuries include all injuries except motor vehicle accidents, suicide, homicide and accidental shooting.

(c) There were 52 additional deaths due to lung cancer overall (this was made up of 112 additional deaths of those younger than 70 years outside Major Cities and 60 fewer than expected for those who were 70 years and older). While it accounted for 2% of all additional deaths, lung cancer accounted for 6% of additional deaths of people younger than 65 years.

Source: AIHW National Mortality Database.

## Selected causes of death

Four specific causes of death, selected for their importance, are described below (see Table 4.11).

Coronary (ischaemic) heart disease was responsible for 755 more deaths each year outside Major Cities than expected. Rates were 1.1 times as high in all areas outside Major Cities except Very Remote areas, where they were 1.3 times as high. For younger non-Indigenous people (aged 0-64 years), rates were 1.1, 1.2, 1.2 and 1.3 times as high in Inner Regional, Outer Regional, Remote and Very Remote areas respectively. Overall, there were 3.3 times as many deaths of Indigenous people as expected (9.3 times as many for 0-64-year-olds).

There were about 374 more deaths (mainly male) than expected outside Major Cities due to chronic obstructive pulmonary disease each year; overall rates in Inner Regional, Outer Regional, Remote and Very Remote areas were 1.2, 1.3, 1.3 and 1.9 times those in Major Cities, respectively. Death rates for non-Indigenous people aged 0-64 years were 1.3, 1.6, 1.8 and 2.8 times as high in the four areas outside Major Cities. Rates for Indigenous people were 3.4 times as high as expected (and 8.8 times as high for 0-64-year-olds).

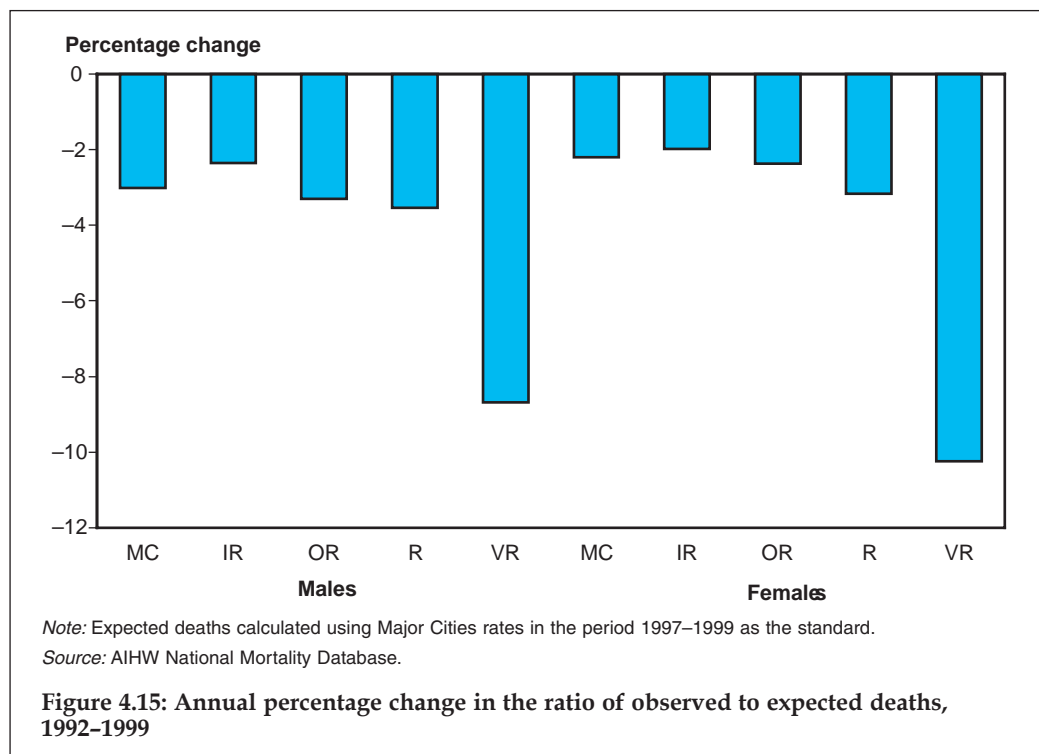
Outside Major Cities, there were 368 more deaths annually due to motor vehicle accidents than expected, of which 70% were deaths of males. Rates were substantially elevated outside Major Cities for all areas examined. In the four areas outside Major

Cities, rates for non-Indigenous people aged 0–64 years were 1.8, 2.0, 2.1 and 2.4 times as high. Indigenous death rates due to this cause were 4.1 times as high as expected.

There were 184 more deaths than expected due to suicide annually outside Major Cities, and practically all were of males. Rates in the four areas were 1.2, 1.2, 1.4 and 1.6 times the rate in Major Cities. Rates for non-Indigenous people were 1.2 times as high in Inner Regional, Outer Regional and Remote areas as in Major Cities, with all age groups between 15 and 64 years contributing, but similar in Very Remote areas to those in Major Cities. Rates for non-Indigenous people aged 0–64 years from Inner and Outer Regional areas were 1.3 and 1.2 times as high as in Major Cities. Indigenous death rates due to this cause were 2.9 times as high as expected.

### Changes in death rates

Between 1992 and 1999, all-cause death rates declined in all areas, including cities, by between 2% and 3% each year, and in Very Remote areas they declined by 10% each year (Figure 4.15). Decreases have been driven mainly by reductions in a small number of diseases. Falls in cardiovascular disease death rates contributed to 45% of the decrease in remote areas, and 65–80% in the remainder; decreases in cancer death rates contributed 15% of the decrease overall; and lower respiratory disease death rates also contributed to the decrease, ranging from 10% of the decrease in Major Cities up to 25% in Very Remote areas). Apart from the changes in specific causes mentioned above, changes in the rate of death due to other causes contributed little in most areas, but 13% in Very Remote areas. Furthermore, injury death rates changed very little over the period.



## Hospital separations

Rates of hospital separation also differ across geographic areas. Compared to the rate of separation for residents of Major Cities (AIHW 2003a) in 2001–02:

- overall hospital separation rates were similar for residents of regional areas, but 1.2 and 1.4 times as high for those from Remote and Very Remote areas respectively;
- separation rates from private hospitals were lower (0.9 times in Inner Regional to 0.3 times in Very Remote areas);
- separation rates from public hospitals were higher (1.1 times in Inner Regional to 2.2 times as high in Very Remote areas respectively);
- same-day separation rates were 0.9 times as high (but similar in Very Remote areas); and
- overnight separation rates were 1.2 times as high in Inner Regional areas to 1.9 times as high in Very Remote areas respectively.

The higher overall separation rates for people living outside Major Cities may be due to greater need (poorer health) or to different admission practices. For example, admission in regional and remote areas may be more likely because of the greater need for precaution associated with greater distances and restricted access to other service types. The lower rates of admission to private hospitals probably reflects the lower levels of physical and financial access to these hospitals in regional and remote areas (most private hospitals are in the larger centres).

Rates of surgical procedure are likely to be affected by issues such as need and access, both physical and financial. Table 4.12 compares rates of separation of residents from regional and remote areas for selected procedures with those from Major Cities.

**Table 4.12: Ratio of the separation rate for selected procedures, by ASGC Remoteness Area, 2001–02**

Procedure	MC	IR	OR	R	VR
Appendicectomy	1.00	1.18*	1.21*	1.29*	1.06
Lens insertion	1.00	0.96*	1.07*	1.00	1.05
Knee replacement	1.00	1.22*	1.11*	1.10	0.71*
Caesarean section	1.00	1.11*	1.08*	1.14*	1.34*
Coronary artery bypass graft	1.00	0.99	0.92*	0.85*	0.70*
Coronary angioplasty	1.00	0.85*	0.81*	0.77*	0.58*

*Note:* The presented statistic is the ratio of the standardised prevalence ratio (SPR) for each area, divided by the SPR for Major Cities. In essence, a ratio greater than 1 indicates a higher rate of separation in the area compared to that in Major Cities; a ratio less than 1 indicates a lower rate of separation in the area compared to that in Major Cities. An asterisk indicates where rates of separation are significantly different from those in Major Cities.

*Source:* AIHW National Hospital Morbidity Database.

## 4.7 Health status of veterans

This section summarises health information on the servicemen and women who enlisted in the Australian Forces over the past century. At June 2003, an estimated 298,600 of the 1.5 million of these veterans were still alive. They served in conflicts from World War I (1914–1918) through to recent overseas missions.

**Table 4.13: Number of veterans enlisted, and estimated survivors at 30 June 2003**

	Numbers enlisted or engaged	Estimated survivors
World War I	416,809	7
World War II	1,118,000	208,900
Other pre-1972 conflicts	86,480	66,200
Post-1972 conflicts	n.a.	23,500
<b>Total survivors</b>	<b>..</b>	<b>298,607</b>

n.a. Not available.

.. Not applicable.

Source: Department of Veterans' Affairs.

### Health entitlements of the veteran population

Recognising the special contribution made to the nation by veterans, the Australian repatriation system provides a wide range of benefits to the ex-service community. Under the *Veterans' Entitlements Act (1986)*, the Department of Veterans' Affairs (DVA) provides eligible members of the veteran community with access to health care, assistance in the home and support services through arrangements with registered health care practitioners, home support agencies and providers, and public and private hospitals.

Eligible veterans, war widows or widowers and dependants are issued with cards that reflect their level of health care coverage (see Box 4.2).

Veterans aged 75–84, largely from World War II and the Korean conflict, represent the greatest proportion of gold and white card holders (53%). Those aged under 55 are the next largest group, comprising around 14% of veterans.

#### **Box 4.2: Veterans' entitlement cards**

*Holders of a gold card (the Repatriation Health Card – For All Conditions) are entitled to the full range of health care services at DVA expense including medical, dental and optical care.*

*Holders of a white card (the Repatriation Health Card – For Specific Conditions) are entitled to the full range of health care services at DVA expense but generally only for those disabilities or illnesses accepted as service-related.*

*An orange card (Repatriation Pharmaceutical Benefits Card) was introduced on 1 January 2002 and provides pharmaceutical benefits under the Repatriation Pharmaceutical Benefits Scheme to British Commonwealth and Allied veterans who have World War II qualifying service, are aged 70 years or more and have lived in Australia for 10 years or more.*

Table 4.14 shows the numbers of veterans in various age groups entitled to care, including dependent spouses and children but excluding persons who only hold an orange card.

**Table 4.14: DVA health treatment population at 30 June 2003**

	Age group								Unknown	All ages
	Under 55	55–59	60–64	65–69	70–74	75–79	80–84	85 & over		
<b>Veterans</b>										
Males	28,485	20,541	7,182	5,870	7,977	46,235	61,002	26,799	23	204,114
Females	2,090	72	59	35	61	3,023	3,688	1,528	6	10,562
<b>Dependants</b>										
Males	435	29	14	21	15	17	21	6	—	558
Females	1,862	1,345	1,947	3,949	14,014	33,571	32,960	22,130	30	111,808
<b>Others<sup>(a)</sup></b>										
Persons	247	275	423	760	862	2,027	2,534	969	21	8,118
<b>Total</b>	<b>33,119</b>	<b>22,262</b>	<b>9,625</b>	<b>10,635</b>	<b>22,929</b>	<b>84,873</b>	<b>100,205</b>	<b>51,432</b>	<b>80</b>	<b>335,160</b>

(a) British, New Zealand, overseas, Commonwealth countries' forces and miscellaneous.

*Note:* The DVA health treatment population only includes gold and white card holders. There are 20,672 orange card holders, of whom 3,353 also hold a white card, and these white card holders are included above.

*Source:* Department of Veterans' Affairs.

## Self-assessed health status

A recent study of veterans, war widows and widowers conducted in 2003 asked them to rate their own health on a five-point scale, ranging from 'very poor' to 'very good'. Results show that 47% rated their health as 'good' or 'very good' (42% of men and 54% of women), 36% as 'fair', 13% as 'poor' and 4% as 'very poor' (unpublished reports by AC Nielsen Research Pty Ltd and Newton Wayman Chong & Associates). These proportions are similar to those reported in a previous study conducted in 1997 (DVA 1998a).

However, only 39% considered there were things they could do to improve their health. Although 70% of those aged under 60 believed they could improve their health, only 27% of those aged 80 years and over had a similar view. In 2003, more respondents felt that there was nothing they could do to improve their health, compared with respondents in 1997 (61% versus 55%).

## Prevalent medical conditions

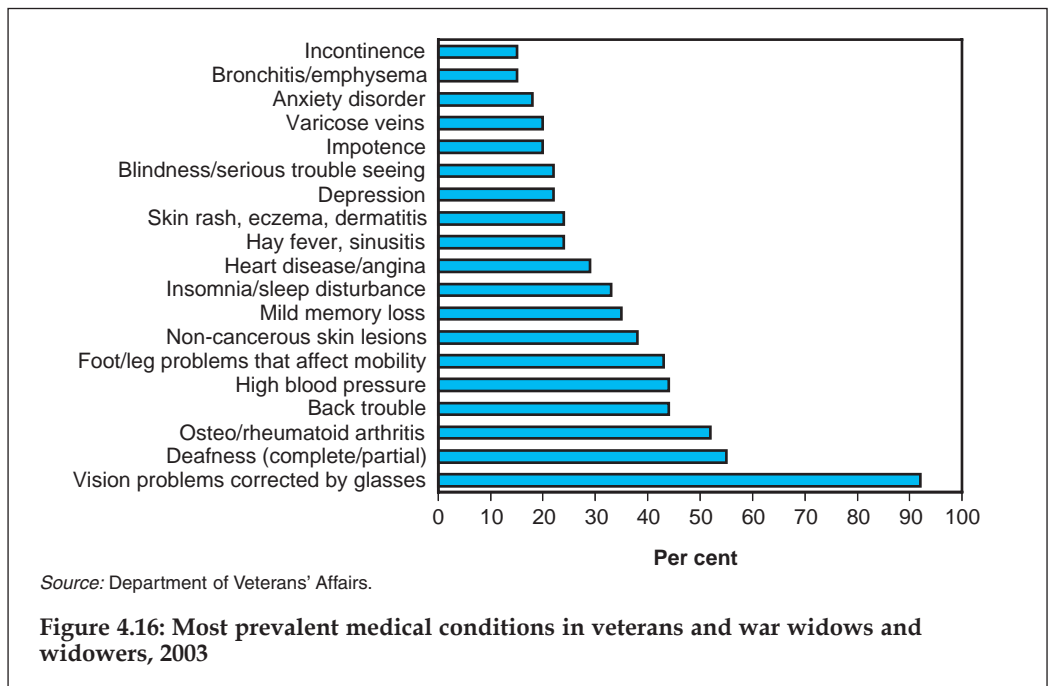
The most common self-reported medical condition in 2003, affecting over nine in ten veterans and war widows surveyed (92%), is vision problems corrected or alleviated by glasses or contact lenses (Figure 4.16). Complete or partial deafness and osteo/rheumatoid arthritis are also common, each affecting more than half of all veterans and war widows (55% and 52% respectively). Osteo/rheumatoid arthritis is more commonly found among females or those with a carer. Over two in five veterans and war widows are affected by back trouble such as sciatica or prolapsed discs (44%), high blood pressure (44%) or foot or leg problems that affect mobility (43%). There has

been a marked increase since 1997 in the proportion of veterans and war widows suffering from foot or leg problems that affect mobility (from 19% in 1997 to 43% in 2003).

The other main medical conditions that are now more prevalent include incontinence (up by 7% since 1997), vision problems corrected by glasses or contact lenses, deafness and high blood pressure (each having increased by 6%).

Veterans who served in Vietnam are more likely than other veterans to report suffering from mild memory loss; insomnia or sleep disturbance; skin rash, eczema or dermatitis; anxiety disorder; post-traumatic stress disorder; or an alcohol or drug problem.

Just over one in 10 veterans and war widows (12%) has a carer. The prevalence of having a carer has increased slightly since 1997 when it was 10%. Of these carers, 67% reported that they currently suffer from at least one of the following conditions: insomnia or sleep disturbance (49%); anxiety disorder (30%); depression (26%); or mild memory loss (25%).



### Comparative health status

In an analysis of population-based surveys, 49% of the veterans with a DVA health care entitlement card rated their health as either fair or poor, compared with about 33% of other males of equivalent age in the general community (Covance & DVA 1999). It was also found that veterans report poorer health and more health problems than people of the same age in the general community, and war widows and widowers.

The self-reported overall health status of war widows is similar to other females of the same age in the community, with about one-third rating their health as either fair or

poor. However, compared with the general community, veterans and war widows and widowers are more likely to report:

- having a recent illness
- having recently taken a health-related action
- having recently consulted with doctors and other health professionals
- undertaking some level of exercise.

Compared with males in the general community, entitled veterans are more likely to report the following illnesses:

- diseases of the respiratory, circulatory, digestive and musculoskeletal systems, and of the connective tissues
- arthritis
- mental disorders
- neoplasms.

Compared with females in the general community, war widows are more likely to experience and be treated for the following illnesses:

- diseases of the respiratory system
- mental disorders.

Male and female service pensioners and war widow pensioners have a higher average number of long-term conditions than age pensioners (Covance & DVA 1999).

Although analyses such as these examined a range of health conditions which may or may not be related to military service, some conditions have been officially accepted as being caused by a person's defence service. The ten most frequent of these conditions accepted under this arrangement (covering 63% of all such conditions) in 2000–01 were sensory-neural hearing loss, post-traumatic stress disorder, chronic bronchitis and emphysema, solar keratosis, ischaemic (coronary) heart disease, tinnitus, acquired cataract, non-melanoma skin cancer, osteoarthritis, and alcohol dependence or alcohol abuse.

## **Mortality patterns in veterans**

A study of veterans' deaths between 1993 and 1997 concluded that their death rates differed substantially from the rest of the community (Covance 2000). The study found that, on average, male gold card holders had a death rate around 14% higher than the community death rate (Table 4.15). In contrast, male white card holders had death rates around 7% below the community rate. Similarly, war widows and widowers tended to have slightly lower death rates than the general community.

Death rates also differed substantially between disability pension levels. Veterans on the Extreme Disability Allowance, for example, have a death rate two to three times that of the community.

**Table 4.15: Number of observed deaths and expected deaths in the veteran population, 1993–1997**

	Observed deaths	Expected deaths	Standardised mortality ratio
Male gold card holders	49,501	43,260	1.14
Male white card holders	12,584	13,545	0.93
Female gold card holders	18,194	19,125	0.95

*Note:* Observed deaths, expected deaths and standardised mortality ratio in the DVA treatment population, by sex and card type, 1993–97. Expected deaths is the number of deaths, had veterans experienced the death rates of the general Australian population.

*Source:* Covance 2000.

## Health studies of Korean and Vietnam War veterans

A study of the mortality of Australian veterans of the Korean War in the period 27 June 1950 to 31 December 2000, after their Korean service, was completed recently (Harrex et al. 2003).

The study demonstrated that participation in the Korean War is associated with an overall increase in mortality rate of 21% compared with an equivalent Australian male population, and an increase in cancer mortality of 31%. Cancer deaths associated with smoking were particularly high but the study showed that smoking was not the only reason for the elevated death rate. Other elevated causes of death included suicide (31% excess), respiratory diseases (32%), digestive diseases (35%) and cardiovascular diseases (13%).

In 2003 the AIHW compared cancer incidence among Korean War veterans over the period 1982–1999 with an expected incidence that was based on the Australian community (AIHW 2003b). This study showed that the incidence of all cancers among Korean War veterans was between 13% and 23% higher than expected. Much of this difference was due to the higher incidence among veterans of head and neck cancer (between 76% and 90% higher than expected), larynx cancer (60–72% higher), oesophagus cancer (42–54%) and lung cancer (31–42%). Smoking is a major risk factor with each of these cancers.

Among service types, Korean War veterans who served in the Navy and Army had an incidence of cancer that was between 13% and 25% higher than expected. Veterans who served in the RAAF showed no difference in the incidence of total cancer from expected, but did show between 64% and 68% higher incidence of melanoma.

The 1997 Morbidity Study into the health of Vietnam veterans and their children (DVA 1998b), and the subsequent Validation Study by the AIHW of the results of this study (AIHW 1999a), identified a number of health conditions where prevalence was higher among veterans and their children compared to the expected prevalence. The Validation Study found that, among veterans, the prevalence of melanoma of the skin and prostate cancer was higher than expected, based on Australian community rates. However, the prevalence of a range of other disorders, including colorectal, breast and eye cancer, non-Hodgkin's lymphoma and leukaemia, motor neurone disease and multiple sclerosis, was found to be no different than expected from that in the general community. For veterans' children, the prevalence of spina bifida maxima, cleft lip or palate, and deaths due to accident, illness and suicide were all shown to be higher than expected. Suicide among veterans' children was shown to be three times as frequent as expected, based on the Australian community prevalence.

## 4.8 Health of prisoners

On an average day during 2002–03, over 22,000 persons were detained in Australian prisons. The national rate of imprisonment during this year was 147 per 100,000 adults, a slight increase from 145 in 2001–02. The Northern Territory reported the highest imprisonment rate of 519 per 100,000 adults in 2002–03, while the Australian Capital Territory reported the lowest rate of 80. Most prisoners are male (93%), with the highest rate of imprisonment among the 25–29-year age group. Indigenous persons are over-represented, comprising 20% of the prisoner population in 2002 (ABS 2003f).

National data on the health status of Australian prisoners are unavailable. The information that is available indicates that this substantial population group is mostly from a disadvantaged socioeconomic background, often has poor physical and mental health status, frequently engages in risk-taking health behaviour and, as a result, has special health needs.

Two states have recently completed prisoner health surveys, enabling some health comparisons to be made (Table 4.16). The 2001 New South Wales Inmate Health Survey found that a high proportion of prisoners tested positive for communicable diseases, particularly hepatitis C (40% of the males, 64% of the females), hepatitis B (28% males, 31% females), and herpes simplex virus Type 1 (85% males, 89% females) and Type 2 (19% males, 51% females) (Butler & Milner 2003). The 2002 Queensland Women Prisoners' Health Survey found similarly high rates of hepatitis C (45%) (Hockings et al. 2002).

**Table 4.16: Health conditions and risk behaviours among prisoners in full-time custody, New South Wales, 2001, and Queensland, 2002 (per cent)**

	New South Wales		Queensland
	Males	Females	Females
<b>Communicable diseases</b>			
Hepatitis C antibody	40	64	45
Hepatitis B antibody	28	31	12
Herpes simplex virus, Type 1	85	89	n.a.
Herpes simplex virus, Type 2	19	51	n.a.
<b>Risk factors and behaviours</b>			
Ever used illicit drugs	80	84	80
Regular drug use at time of incarceration <sup>(a)</sup>	67	74	63
History of injecting drug use	53	73	56
Current smoker	78	83	83
Harmful or hazardous alcohol use	48	29	38
Overweight/obese	50	44	20
<b>Mental health</b>			
Treatment for emotional or mental health problem	41	54	61
Suicide attempt	20	30	32
Self-harm	12	21	21
Sexual abuse before age 16	37	60	43

n.a. Not available.

(a) Refers to daily or almost daily use of illicit drugs.

Sources: Hockings et al. 2002; Butler & Milner 2003.

Exposure to bloodborne viruses such as hepatitis C and hepatitis B is largely associated with injecting drug use. More than half of all male and female prisoners surveyed reported a history of injecting drug use. Regular drug use at the time of incarceration, which may include injecting, was reported by 67% of male prisoners in New South Wales, as well as 74% and 63% of female prisoners in New South Wales and Queensland respectively.

The proportion of current smokers among surveyed prisoners was over four times that of the general community (approximately 80% of prisoners compared with less than 20% among the total population aged 14 years and over) (AIHW 2002a). Additionally, almost half of all male prisoners and 29% of female prisoners in New South Wales reported consuming harmful or hazardous quantities of alcohol in the 12 months before imprisonment (Butler & Milner 2003). Rates were even higher among female prisoners in Queensland. The prevalence of harmful drinking among Indigenous women incarcerated in northern Queensland was over 70% (Hockings et al. 2002). In contrast, less than 10% of persons aged 14 years and over in the general community drank alcohol at levels considered to provide long-term health risk (AIHW 2002a).

Mental health concerns are common among inmates. In New South Wales, 41% of male and 54% of female inmates, and in Queensland 61% of female inmates, reported some form of treatment for an emotional or mental illness during their lifetime. Depression and anxiety were common diagnoses—schizophrenia was also diagnosed in 5% of male and 3% of female inmates in New South Wales, and 6% of female inmates in Queensland. One in five males and one in three females indicated that they had attempted suicide, as well as one in ten males and one in five females deliberately harming themselves. Sexual abuse before the age of 16 was widely reported, especially among female inmates.

Data on the HIV status of adults entering prisons is collected and published by the National Centre in HIV Epidemiology and Clinical Research. HIV testing on admission is not compulsory in all states and territories and in 2002 only 59% of adults admitted to Australian prisons were tested (NCHECR 2003) (Table 4.17). Testing was mandatory in Queensland and the Northern Territory; data were unavailable for Victoria. In 2002, 21 inmates (0.1%) tested positive for HIV antibodies.

**Table 4.17: Proportion of new prisoners tested for and diagnosed with HIV, 2002**

	NSW	Vic	Qld	WA	SA	Tas	ACT <sup>(a)</sup>	NT	Aust
Number of receptions	11,433	n.a.	11,108	6,207	2,643	1,520	108	1,751	34,770
Tested for HIV antibody (%)	35.6	n.a.	100.0	40.9	24.8	30.6	25.9	100.0	59.3
Number (%) with HIV	4 (0.1)	n.a.	7 (0.1)	4 (0.2)	3 (0.5)	1 (0.2)	0 (0.0)	2 (0.1)	21 (0.1)

n.a. Not available.

(a) The corrections centre in the ACT is a remand centre only. HIV antibody testing is carried out on prisoner request. Data only available for the last two months of 2002.

Source: NCHECR 2003.

Information on causes of deaths in prisons is also available nationally and is published by the Australian Institute of Criminology. In 2002, there were 50 prison custody deaths—of the 42 deaths for which a cause was noted, 23 were deemed to be of natural causes, 5 of multiple causes, and 14 through suicide by hanging (Collins & Ali 2003).

## 4.9 Health conditions of people with a disability

At the broadest level, the ABS 1998 Survey of Disability, Ageing and Carers estimated that over 3.6 million Australians (19.3% of the population) had some form of disability. These disabilities and accompanying functional limitations are in turn associated with a wide range of health conditions. A particular level of disability or functional limitation (for instance, needing assistance with self-care) may be shared by people with health conditions as diverse as diabetes, cardiovascular disease, mental illness or paraplegia. This large group of Australians is therefore deserving of attention in its own right from the perspective of health as well as disability.

This section summarises the most common health conditions associated with the five broad disability groups outlined in the overview of disability in Chapter 2. The most common health conditions associated with disability in Australia are summarised in Box 4.3.

### Self reported health of people with a disability

Survey respondents aged 15 and over with a disability in 1998 tended to report lower levels of health than the general population. 'Poor health' was reported by 11.0% of the sample of people with a disability and 'excellent health' by 8.6% (Table 4.18). In comparison, 4.8% of a sample from the general population reported 'poor health' and 18.9% reported 'excellent health' (ABS 2002b).

**Table 4.18: Self-perceived health by disability status, persons aged 15–64 years, 1998 (per cent)**

Self-perceived health	Profound core activity restriction	Severe core activity restriction	Total with disability <sup>(a)</sup>
Excellent	6.4	3.7	8.6
Very good	11.6	11.7	21.5
Good	20.8	29.6	34.7
Fair	29.2	33.1	24.1
Poor	32.0	21.9	11.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Total ('000)</i>	<i>85.8</i>	<i>338.4</i>	<i>1,926.1</i>

(a) 'Total with disability' is not the sum of the preceding columns. It includes people with a disability but no profound or severe core activity restriction.

Source: AIHW 1999b.

### Accessibility of the health system and related outcomes

There is growing attention to the questions of how accessible the health system is for people with disabilities, and what effect this has on their health.

Durvasula and Beange (2001) reviewed emerging evidence that people with intellectual disabilities have poorer health, in terms of lower life expectancy and more prevalent other physical and mental health problems, than the general population. They also found that people with intellectual disability do not access health services, in particular preventive health care, to the same extent as the rest of the population. A Sydney-based study has found higher mortality rates among people with intellectual disability (Durvasula et al. 2002). People with intellectual disabilities were less likely to undergo health screening and were less exposed to health promotion than other patients attending general health services.

### **Box 4.3: Common diseases or conditions associated with disability**

*Intellectual, psychiatric, sensory/speech and physical/diverse disability may be associated with various diseases or conditions. On the basis of self-report, or responses from carers, some of the most commonly associated diseases or conditions in 1998 were:*

#### **Intellectual disability**

- Around 60,100 people with an intellectual disability, or 0.3% of the Australian population, had ADHD. Of these, 42,700 were children aged under 15 (1.1% of children of that age).
- Nearly 10,000 people had conditions associated with Down syndrome.
- About 10,700 children aged under 15, or 0.3% of children of that age, had autism and related conditions.

#### **Psychiatric disability**

- Nervous tension or stress was the most common condition associated with a psychiatric disability, affecting 258,200 people, or 1.4% of the population.
- There were 177,400 people (1.0%) who had depression and about 30,500 people (0.2% of the total population) who suffered from schizophrenia.
- Around 100,300 people (0.5% of the total population) had dementia. Most of these were aged 65 and over (4.2% of the population of that age).

#### **Sensory/speech disability**

- Loss of sight was mostly associated with cataract (79,300 people, or 0.4% of the total population) and glaucoma (56,400, or 0.3% of the total population). These conditions were mostly found among people over the age of 65.
- Around 78,100 people, or 0.4% of the total population, had a congenitally related hearing loss. About 330,100 people, or 1.8% of the population, had a hearing loss associated with exposure to loud noise. (Note that most hearing loss in the general population is related to ageing.)

#### **Physical diverse/disability**

- More than one million people had one or more heart diseases or related conditions. Around 638,200 people, or 3.4% of the total population, had high blood pressure.
- About 408,700 people, or 2.2% of the total population, had asthma-related conditions. Asthma was most commonly reported among children of school age (5–14), 66,000 people or 2.5% of children of that age.
- Back problems were the most common musculoskeletal condition other than arthritis; 1,007,000 people, or 5.4% of the total population, had these conditions. There were 72,500 people, or 0.4% of the total population, who reported having osteoporosis, mostly people aged 45 or older.
- There were 90,900 people (0.5%) who had conditions associated with epilepsy and 55,000 (0.3%) who had conditions associated with migraines. About 31,000 people (0.2%), mostly among those aged 65 or more, had conditions associated with Parkinson's disease.

Source: AIHW 2003g; AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers confidentialised unit record file.

Possible barriers in providing general health care for people with developmental disabilities include a lack of comprehensive medical histories and insufficient physical access to community facilities (Burbidge 2003; Parmenter et al. 1999). Health professionals treating people with various disabilities do not always have sufficient knowledge of the relevant conditions, inhibiting the provision of effective health care (Buzio 2001; Parmenter et al. 1999). Specific measures have been suggested in order to counter these problems and barriers, such as standards regarding the frequency of checking dental health, hearing and vision (Beange et al. 1999). The Centre for Developmental Disability Studies in Sydney has been involved in programs funded by the NSW Health Department to sensitise hospital staff to the needs of people with disabilities, and is developing a training package for doctors relating to cervical screening for women with disabilities (Parmenter 2003).

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