

Deaths from intentional injury are more common for Indigenous people than for other Australians. In 1995–97 in the Northern Territory, Western Australia and South Australia combined, there were about seven times as many deaths among Indigenous females and almost eight times as many deaths among Indigenous males as would have been expected if the all-Australian rates had applied (Cunningham & Paradies 2000). In the period 1989 to 1996, it was estimated that about 20% of victims and 22% of offenders in intimate-partner homicides were Indigenous (Carcach & James 1998).

Indigenous females are grossly overrepresented in hospitalisations recorded as being due to intentional injury. Of all hospitalisations among females in 1997–98, almost half (46%) of those classified as being due to intentional injury were among females identified as Indigenous. It is possible that some intentional injuries to non-Indigenous females were coded as another type of injury, such as ‘accidental falls’, but this cannot completely explain the disparity between the two groups because the rates of hospitalisation were higher for Indigenous females than for non-Indigenous females for almost every type of injury. Indigenous males were also at much greater risk of hospitalisation for intentional injury compared with their non-Indigenous counterparts, but the differences were not as extreme (Cunningham & Beneforti 2000).

Although death registrations and hospital statistics on intentional injury point to a heavy burden of violence among Indigenous people, they do not tell the whole story. Not all victims of violence are admitted to hospital or killed, and not all the results of violence are physical. However, there is little good statistical information about other aspects of violence, such as those relating to mental and emotional wellbeing.

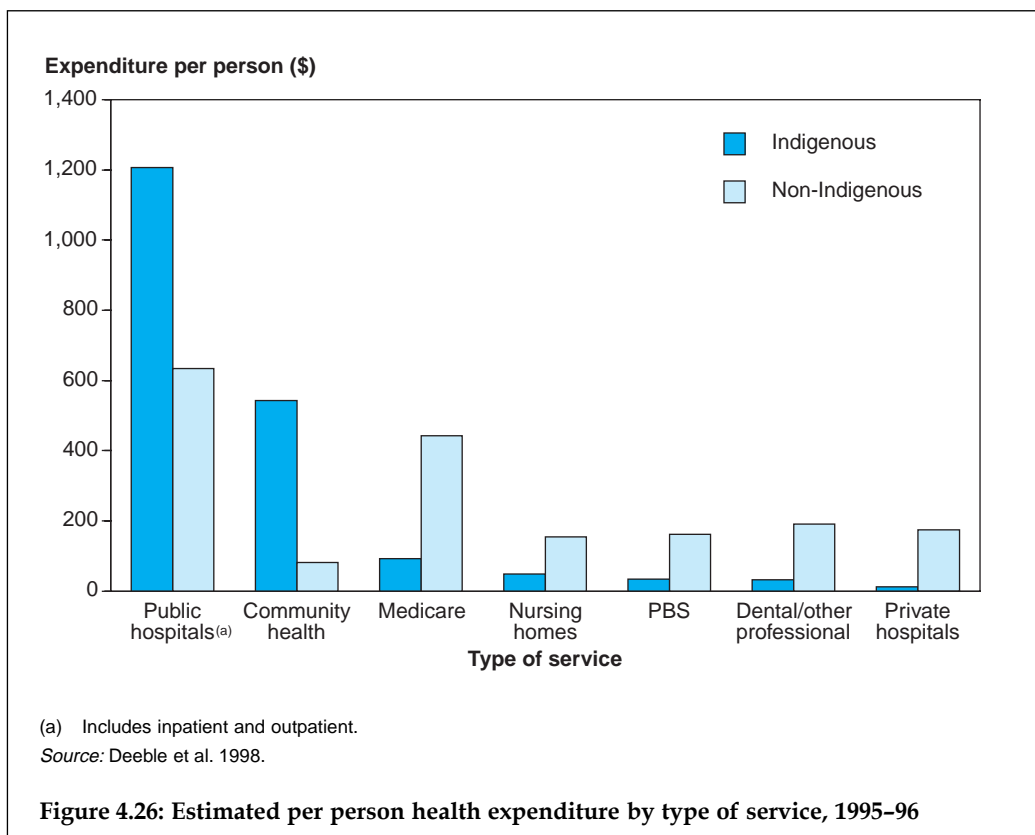
## **Health services and expenditure**

Appropriate health services are necessary help reduce disparities in health status between population groups. According to an analysis of health expenditure in the financial year 1995–96, about \$2,320 per person was spent on health services to Indigenous people, compared with \$2,163 for services to non-Indigenous people (Deeble et al. 1998). This difference in expenditure (8%) is much smaller than the differences for many of the health status measures shown above.

Aboriginal and Torres Strait Islander peoples appear to have a different pattern of service use from that for the rest of the population (Figure 4.26), with higher estimated per person expenditure for Indigenous people for public hospital services and community health services, and lower per person expenditure for Medicare, the Pharmaceutical Benefits Scheme, nursing homes, dental and other professional services, and private hospitals (Deeble et al. 1998).

## **4.7 Socioeconomically disadvantaged**

There has been considerable focus in Australia and overseas on the association between socioeconomic disadvantage and health. The relationship between increasing mortality and morbidity with decreasing socioeconomic status has been well demonstrated (Turrell et al. 1999). Similarly, many of the differences in health between groups, such as between men and women, between Indigenous people and non-Indigenous persons, and between urban and rural residents, also show a relationship with socioeconomic factors (AIHW:



Mathers 1994a). However, the reason for the relationship is not clear and requires further work. A range of risk factors, as well as the social and economic elements, affect health. Health inequalities are caused by a complex interplay of these factors.

There are a number of elements that contribute to socioeconomic status, including income, level of education, employment status and occupation. These elements by themselves, however, do not provide an ideal measure, and their use often depends on the age group being analysed. Health information by socioeconomically graded areas of residence provides a useful way to analyse information for children, retired people and, in some cases, women, where data on occupation, education and income are not always available or not relevant (AIHW: Mathers 1994a). The most common measure of socioeconomic status by area of residence is the Index of Relative Socioeconomic Disadvantage (IRSD), derived by the Australian Bureau of Statistics from population census data (Box 4.2, page 220).

Analyses of inequalities in health were conducted in the first half of the 1990s by the National Health Strategy (1992) and the Australian Institute of Health and Welfare using mortality data for 1985 to 1987, data from the 1988 Survey of Disabled and Aged Persons, the 1989-90 National Health Survey, and the 1989 National Heart Foundation Risk Factor Prevalence Survey. These studies found that people of a low socioeconomic status generally have higher rates of mortality and are most likely to suffer from

disability, to have serious chronic illnesses or suffer recent illnesses, and to report being in only fair or poor health as opposed to good or excellent health. The analysis conducted by the AIHW demonstrated substantial inequalities in health by all measures of socioeconomic status (education level, employment status, occupation, occupational prestige, family income and areas of socioeconomic disadvantage) and for all age groups. People with lower socioeconomic status had higher death rates and reported higher levels of illness and reduced activity due to illness (AIHW: Mathers 1994a, 1994b, 1995, 1996).

These analyses also demonstrated that the socioeconomically disadvantaged make greater use of primary and secondary health services such as doctors, hospitals and outpatient clinics, but are less likely to use preventive health services such as dentists, immunisation and cancer screening tests (e.g. mammograms and Pap smears).

More recently, mortality and morbidity data and data from the 1995 National Health Survey have been analysed with regard to socioeconomic status. The findings are reported in the following paragraphs.

#### **Box 4.2: Measures of inequality**

**Index of Relative Socioeconomic Disadvantage (IRSD).** *The IRSD is one of a group of measures developed by the Australian Bureau of Statistics to categorise small geographic areas according to their social and economic characteristics (ABS 1998d). This measure was used to group people into quintiles of socioeconomic disadvantage according to the IRSD for their statistical local area of usual residence, with the first quintile corresponding to the group with the highest socioeconomic status and the fifth quintile the lowest.*

**YLL and YLD rate ratios.** *These are the age-standardised YLL (years of life lost due to premature mortality) or YLD (years of life lost due to disability) rate per 1,000 population for the least socioeconomically disadvantaged quintile divided by the corresponding age-standardised rate for the most socioeconomically disadvantaged quintile. This provides a measure of the excess mortality or disability among the most disadvantaged which is independent of variations in age and sex distribution between groups with different socioeconomic status. Rate ratios greater than 1 indicate higher mortality or disability for the most disadvantaged.*

**Gini coefficient.** *This is a summary measure of the degree of inequality in some characteristic within the population (Wagstaff et al. 1991). In this case the coefficient is calculated for cause-specific YLL and YLD. Its values range from 0 (perfect equality) to 1 (perfect inequality) and measure the degree of mortality or disability inequality across the quintiles of socioeconomic disadvantage as measured by the IRSD.*

**Excess burden.** *This measure identifies the burden of mortality or disability which may be attributed to socioeconomic disadvantage (Kunst 1997). It is presented as the percentage of YLL or YLD which could potentially be avoided if all quintiles had the same age-standardised YLL or YLD rate as the least disadvantaged quintile.*

## Mortality

The most complete data on socioeconomic status and the burden of disease and injury is available for mortality. Variability in the mortality burden with socioeconomic status can be examined using three measures: the YLL rate ratio, the Gini coefficient and the excess mortality burden (see Box 4.2).

For all deaths registered for the years 1995–97, classified into quintiles of socioeconomic disadvantage according to the IRSD (see Box 4.2) for their statistical local area of usual residence (AIHW: Mathers et al. 1999), there is a marked gradient in the mortality burden across these quintiles. The YLL rate ratio shows that the burden in the most disadvantaged group is 41% higher for males and 26% higher for females (Table 4.12, page 222). Looking at specific causes of death, the differentials in mortality burden are smaller for infectious diseases and cancers but larger for cardiovascular disease, chronic respiratory conditions, digestive system diseases and injuries.

The Gini coefficient indicates that the overall mortality burden for males is 50% higher than females (with Gini coefficients of 0.06 and 0.04 respectively). A similar difference between males and females is shown in the excess mortality burden, with 19% of the mortality burden for males associated with socioeconomic status compared with 12% of the burden for females.

This inequality in mortality burden is also reflected in the age-specific probability of death, which is higher at all ages for people in the most disadvantaged quintile compared with the least disadvantaged quintile.

Analysis of mortality for 1997 and 1998 found that males in the most disadvantaged quintile had 12% higher mortality than the average Australian male, and 30% higher than males in the least disadvantaged quintile. For females, those in the most disadvantaged quintile had a 16% higher level of mortality than those in the least disadvantaged quintile (ABS 1999b).

Consistent with these results, analysis of 1995–97 mortality data by AIHW found that among those aged 15–24 years death rates of males in the most disadvantaged quintile were 70% higher than males in the least disadvantaged quintile, with death rates of 112 and 65 per 100,000 population, respectively. Similarly, females in the most disadvantaged quintile had death rates 40% higher than those in the least disadvantaged quintile (35 compared with 26 per 100,000 population) (AIHW: Moon et al. 1999).

This analysis also found that there is a 3.6-year gap in life expectancy at birth for males between the top and bottom quintiles of socioeconomic disadvantage, and a 1.9-year gap for females. That is, the most socioeconomically disadvantaged in society have lower life expectancies than the least socioeconomically disadvantaged, losing 35% more years of life in 1996 (AIHW: Mathers et al. 1999).

In interpreting these results, it should be borne in mind that the IRSD relates to the average disadvantage of all people living in a geographic area. Hence any variability between groups based on the IRSD will probably be smaller than if the variability had been measured between individuals. In other words, these measures of inequality will in most cases understate the level of inequality in mortality burden by socioeconomic disadvantage between individuals.

**Table 4.12: Differentials in the burden of disease and injury between top and bottom quintiles of socioeconomic disadvantage, age-standardised YLL, YLD and DALYs per 1,000 population, 1996**

|   | <b>Males</b>     | <b>Females</b>   | <b>Persons</b>   |
|---|------------------|------------------|------------------|
| YLL ratio <sup>(a)</sup>                | 1.41 (1.38–1.45) | 1.26 (1.22–1.29) | 1.35 (1.32–1.37) |
| YLD ratio <sup>(a)</sup>                | 1.32 (1.13–1.46) | 1.29 (1.05–1.53) | 1.30 (1.09–1.44) |
| DALY ratio <sup>(a)</sup>               | 1.37 (1.28–1.43) | 1.27 (1.14–1.41) | 1.32 (1.22–1.39) |
| Excess burden (per cent) <sup>(b)</sup> | 18.7 (15.1–21.5) | 15.4 (9.3–19.6)  | 17.1 (13.7–19.4) |

(a) Ratio of age-standardised rate per 1,000 population for bottom (5th) quintile of IRSD to the age-standardised rate per 1,000 population for the top (1st) quintile. Range given in brackets is the estimated 95% confidence or uncertainty interval.

(b) Percentage of total burden (DALYs) that would be avoided if all quintiles had the same age-standardised DALY rate as the least disadvantaged (1st) quintile. Range given in brackets is the estimated 95% confidence or uncertainty interval.

Source: AIHW: Mathers et al. 1999.

## Disability

There are no data to measure socioeconomic inequality in YLD for the whole population, but this inequality can be examined for mental disorders. The 1997 National Survey of Mental Health and Wellbeing collected data on mental disorders among the Australian population aged 18 years and over. Survey respondents were classified into quintiles of socioeconomic disadvantage using the IRSD to classify place of usual residence.

The YLD burden due to mental disorders in the most disadvantaged quintile is 45% higher for males and 41% higher for females than the burden in the least disadvantaged quintile. The Gini coefficients show similar levels of inequality for both males and females (with coefficients for the burden of mental disorders of 0.07 and 0.06 respectively). The excess disability burden from mental disorders is slightly larger for women, with 20.0% of the disability burden for mental disorders among women associated with socioeconomic status compared with 17.5% of the burden among men (AIHW: Mathers et al. 1999).

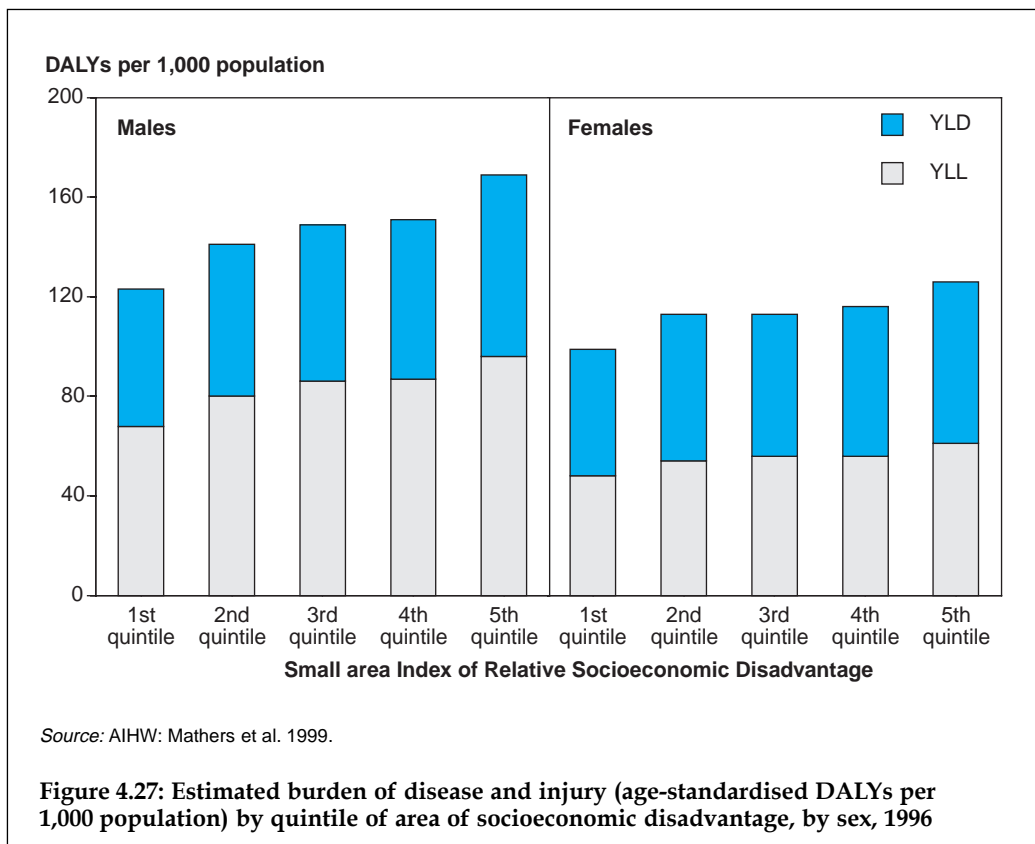
## Total disease burden

The lack of data on the burden of disability means that a comprehensive analysis of the total disease burden associated with inequalities in socioeconomic status cannot be completed. However, modelling techniques can be used to derive provisional total burden estimates (Figure 4.27).

The total burden (DALY) for the most disadvantaged is 37% higher for males and 27% higher for females than the total burden for the least disadvantaged (Table 4.12). The proportion of total burden associated with inequalities in socioeconomic disadvantage is 18.7% for males and 15.4% for females.

Findings from the 1995 National Health Survey reveal that a greater proportion of both males and females in the areas of greatest disadvantage rated their health as fair or poor (rather than good, very good or excellent) than did those from other areas. There was a clear gradient of more negative assessment of health with greater disadvantage of area.

Among all people aged 15 years and over, 17% rated their health as fair or poor, with this percentage ranging from 12% in the least disadvantaged areas to 22% of those in the most disadvantaged areas (ABS 1999f).



Of the fifteen most common non-minor illnesses recorded in the survey, five were more common in the most disadvantaged areas, including arthritis, asthma, bronchitis/emphysema, ulcer and diabetes. As found in earlier studies, the more socio-economically disadvantaged also made greater use of doctors and outpatient/casualty services, but were less likely to use preventive health services (ABS 1999f).

## 4.8 Rural and remote populations

The health of populations living in rural and remote areas of Australia is worse than of those living in capital cities and other metropolitan areas (AIHW 1998). Mortality and illness levels increase as the distance from metropolitan centres increases. Relatively poor access to health services, lower socioeconomic status and employment levels, exposure to comparatively harsher environments and occupational hazards contribute to and may explain most of these inequalities. Also, a large proportion of the population in the more remote parts of Australia are Aboriginal and Torres Strait Islander peoples, who generally have poorer health status.