

# 4 Injury prevention and control

*Primary goal:*

**“ Reduce the incidence, and impact on health, of injury in the Australian population ”**

- Overview
- Highlights
- Priority indicators
- Priority indicators not reported due to incomplete information
- Strategies, initiatives and interventions



### Overview

Injury is a leading cause of premature mortality in Australia. It is also the cause of much morbidity and often is preventable. In terms of health impact, injury encompasses severe and often life-threatening conditions (such as multiple trauma due to a road crash), which sometimes lead to death, and sometimes to survival with severe persisting conditions (such as spinal cord injury, or brain damage). Injury also includes many more cases which do not pose great threat to life, but result in significant dysfunction, pain, cost, and other consequences. Poisoning is also classified with injury.

Many injuries heal, leaving little or no residual dysfunction. In a significant proportion of cases, however, recovery is incomplete, and injury results in a greater or lesser degree of ongoing dysfunction, or the onset of secondary conditions (such as osteoarthritis in previously injured joints). The importance of these less dramatic consequences of injury is reflected in the finding of the 1993 Disability, Ageing and Carers Survey that 15.2% of people with a disability reported injury or accident as the underlying cause of their main disabling condition (ABS 1996a).

Injury is the predominant threat to life for children and young adults. While injury accounted for 5.7% of all deaths in Australia in 1994, it accounted for 62% of deaths at ages 1–24 years (males 72%; females 48%) (ABS 1995). The prominence of injury as a cause of mortality in early life is reflected in indicators of premature mortality such as Years of Potential Life Lost. In 1994, for example, deaths attributed to accidental injury accounted for 14.7% of all years of potential life lost at ages 1–75 years, and suicide accounted for another 8.6%.

A total of 7,187 injury deaths were registered in 1994. Two major causes of death were suicides (31%) and motor vehicle traffic accidents (27%) (ABS 1995). Only a small minority of injuries are fatal. About 40 hospital admissions due to injury occur for every death, about seven emergency department attendances occur for every admitted case, and about the same number of people visit a general practitioner as visit an emergency department.

### Prevention

Primary prevention is the best means of injury control. Causal mechanisms and risk factors for many types of injury are understood well enough to enable effective preventive measures to be designed. The most striking example of the success of this approach in Australia is road injury mortality. Petrol rationing ended in the late 1940s and, until 1970, road injury death rates and case numbers rose steadily. Systematic analysis of the problem in terms of risk factors, causal sequences and specific opportunities for intervention began during the 1960s. Major interventions included legislative requirements concerning use of seat belts and motorcycle helmets, a system of vehicle design rules and (later) programs to reduce drink driving and speeding. Road injury death rates have now dropped to about one-third of the peak rates, despite increasing road travel. Similar public health approaches can be used for many other types of injury.

'Injury' encompasses diverse conditions and circumstances of occurrence. A characteristic shared by them all is that a physical or chemical object or substance, external to the body of the person concerned, is a direct cause of the condition.

## Injury prevention and control

From the point of view of primary prevention, classes of injury which arise in similar circumstances are of interest because they may be amenable to the same preventive intervention. Examples of such classes are toddlers drowning in swimming pools, injuries resulting from housefires, poisoning by pharmaceuticals, and neck injuries in rugby. Successful prevention generally depends on intersectoral collaboration, involving sectors which have responsibility for, or special interest in, the setting in which a particular type of injury occurs.

### Trends and differentials

As stated above, injury is diverse. This diversity is reflected in complex patterns of injury differentials, and in different time trends. Only a few of these can be mentioned here.

Long-term trend data are only available for injury mortality. Ignoring brief fluctuations, age-adjusted injury mortality remained fairly constant for the 50 years to 1970, and has declined since then by about one-half. However, major categories of injury have shown varied patterns. As noted above, the twentieth-century epidemic of road deaths increased until 1970, and then declined. In contrast, overall suicide rates have shown greater stability through the century, and rates for the remaining group of 'all other' injuries have declined for many decades.

For nearly all types of injury, rates are higher for males than females (Bordeaux & Harrison 1996). In general, injury rates are highest for adolescent and young adult males, and for both genders in old age. Injury rates tend to be higher in rural and remote areas (Moller 1994), in areas having lower indicators of socioeconomic status (Mathers 1994), and among Indigenous people (Harrison & Moller 1994; Bordeaux & Harrison 1996). Some of these factors are interrelated.

Different injuries predominate at different ages. For example, drowning is prominent in early childhood, transport injury in late childhood and adolescence, suicide through much of adult life, and falls in old age (Bordeaux & Harrison 1996).

Explanations for injury differentials vary, and not all are well understood. Differential exposure to hazards is an important factor. For example, people who live in remote areas tend to be more exposed to the hazards associated with long-distance, high-speed motor travel, and travel on unsurfaced roads. However, this factor is likely to be complicated by remoteness from services which might result in a worse outcome following injury than in a comparable crash in an urban setting because of slower retrieval and later initiation of treatment.

As more comprehensive and reliable injury morbidity data become available, attention is shifting to characterising and preventing non-fatal injury, as well as continuing efforts to reduce injury mortality.

### Highlights

- Injury and poisoning are the fourth leading cause of death in Australia. In 1994, there were 7,187 deaths due to injury with an age-standardised death rate of 39.4 per 100,000 persons.
- Between 1986 and 1994, the age-standardised death rate for all injuries declined by an average of 3.4% per year. Given this trend, the year 2000 target for reducing the injury death rate to 33.6 per 100,000 will be possible to achieve.

## Injury prevention and control

- Death rates for injuries are much higher in the Indigenous than in the non-Indigenous population. The standardised mortality ratio (SMR) for all injuries between Indigenous and non-Indigenous males in 1992–94 was 3.6; the ratio for Indigenous females was higher, at 4.4.
- Between 1989–91 and 1992–94, no reduction in the SMR was noted between Indigenous and non-Indigenous males. However, a 5% reduction in SMR was noted for females in the period.
- The gap between male and female injury death rates did not reduce between 1986 and 1994. On current projections, the target rate ratio of 2.1:1 may not be achieved by the year 2000.
- Road transport-related accidents continue to be a large contributor to injury deaths, particularly among 15–24 year old males, but have declined considerably since 1988. Based on current trends, the targets of 10.7 deaths per 100,000 in the total population and 23.6 deaths per 100,000 persons aged 15–24 years are expected to be reached—several years before 2000.
- The age-standardised death rate for falls among people aged 65 years and over declined by 3.5% annually between 1986 and 1994. It fell substantially below the year 2000 target in 1993, but rose again in 1994.
- Recent declines in homicide rates among those aged 20–39 years suggest that the year 2000 target for women (2.4 deaths per 100,000) is likely to be met. However, no clear trend has emerged for the male homicide rate.
- There has been a slight upward trend in the homicide rate (1.5% annually between 1986 and 1994) for children aged 0–9 years, often as a result of child battering or maltreatment, that must be reversed if the year 2000 target of 0.5 deaths per 100,000 is to be reached.
- A steady reduction in the rate of death from fire, burns and scalds has taken place among those aged 55 years and over (3.6% per year between 1986 and 1994). If this rate of decline continues, the year 2000 target of 1.2 deaths per 100,000 is likely to be met.
- The rate for drowning among children aged 0–4 years declined at an average of 4.7% annually between 1986 and 1994. On current indications, the target for the year 2000 to reduce the rate for drowning among 0–4 year-olds is likely to be achieved.
- Reliable data are currently unavailable for a number of priority injury indicators. Baseline information for several of these indicators is likely to become available in 1997–98. However, further data development and target setting are required for a number of priority indicators.



## Priority indicators

This section covers indicators for which adequate data are available for reporting progress

- 4.1.1 Death rate for injury and poisoning in the total population
- 4.1.2 Hospital separation rate for injury and poisoning in the total population
- 4.2.1 Death rate ratio comparing the injury status of Indigenous and non-Indigenous populations
- 4.2.2 Death rate ratio comparing the injury status of males and females
- 4.3.1 Death rate for road transport-related injury in the total population<sup>1</sup>
- 4.3.2 Death rate for road transport-related injury among males aged 15–24 years<sup>1</sup>
- 4.3.3 Hospital separation rate for road transport-related injury in the total population<sup>2</sup>
- 4.3.4 Hospital separation rate for road transport-related injury among males aged 15–24 years<sup>2</sup>
- 4.5.1 Death rate due to falls among people aged 65 years and over
- 4.5.2 Hospital separation rate due to falls among people aged 65 years and over
- 4.5.5 Hospital separation rate due to falls among children aged 0–4 and 5–9 years
- 4.7.1 Death rate for homicide among people aged 20–39 years
- 4.7.2 Death rate for homicide among children aged 0–9 years
- 4.9.1 Death rate for injury resulting from fire, burns and scalds among people aged 55 years and over
- 4.9.2 Hospital separation rate for injury resulting from fire, burns and scalds among children aged 0–4 years
- 4.10.1 Hospital separation rate due to poisoning among children aged 0–4 years
- 4.11.1 Death rate for drowning in the total population and among children aged 0–4 years
- 4.11.2 Hospital separation rate for near-drowning among children aged 0–4 years

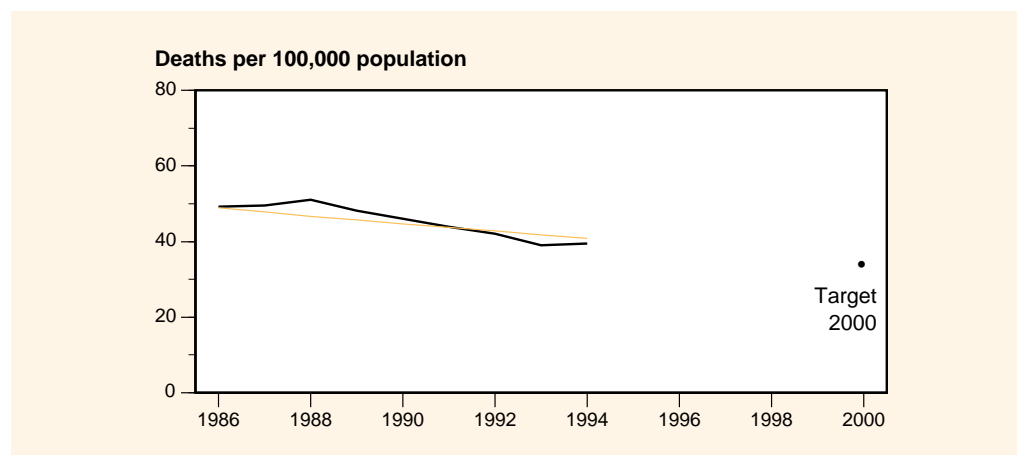
Note: <sup>1, 2</sup> Information presented jointly.

## Injury prevention and control

### INDICATOR 4.1.1 Death rate for injury and poisoning in the total population

*Primary goal: Reduce the incidence, and impact on health, of injury in the Australian population*

#### National trends



Population group	1986	1987	1988	1989	1990	1991	Baseline 1992	1993	1994	Target 2000
Total population	49.2	49.5	51.0	48.2	46.1	43.9	42.0	39.1	39.4	33.6

*Note:* The target reflects a 20% reduction in the baseline, as indicated in the BHO report.

*Source:* AIHW mortality database.

- Injury and poisoning are the fourth leading cause of death in Australia. In 1994, there were 7,187 deaths due to injury with an age-standardised death rate of 39.4 per 100,000 persons.
- Injury death rates vary dramatically with age and sex, reflecting differences in activities, behaviours and injury threshold. The age-specific death rate is lowest between the ages of 5 and 14 years and highest at ages 75 years and over. Those between the ages of 15 and 24 years of age are also at high risk of dying from an injury.
- Males are at greater risk of dying from an injury than females. In 1994, there were 5,089 male and 2,100 female deaths due to injury with a death rate ratio between males and females of 2.8.
- Injury death rates have declined substantially over the past two decades. Between 1986 and 1994, the age-standardised death rate for all injuries in the total population declined by an average 3.4% per year. Much of the decline, however, took place between 1988 and 1994.
- Given the current trend, the year 2000 target for reducing the 1992 injury death rate by 20% is achievable.

## All injuries (ICD-9 E800–869, E880–929, E950–999)

### State comparisons

- A large variation, more than two-fold, occurs in the death rate for injury and poisoning among States and Territories. The Australian Capital Territory and the Northern Territory, respectively, had the lowest and the highest injury death rates, in both periods (1986–88 and 1992–94).
- Between the two periods, mortality from injuries declined in all States and Territories. Greater rates of decline in death rate were recorded for the Australian Capital Territory (36.2%), Victoria (28.6%) and the Northern Territory (26.2%). Rates of decline substantially lower than the national average occurred for Tasmania (5.0%), Western Australia (6.7%) and South Australia (9.6%).
- Despite the high rate of decline in the Northern Territory, the average age-standardised death rate recorded for all injury deaths in 1992–94 (87.0 deaths per 100,000) was more than double the national average (40.1 deaths per 100,000).
- In comparison, the largest decline in death rate for all injuries was noted in the Australian Capital Territory, with the lowest death rate in 1986–88, which resulted in a rate of 27.7 deaths per 100,000

### Number of deaths per 100,000 population

State/Territory	Average 1986–88	Average 1992–94	Per cent change
NSW	48.7	39.0	-19.9
VIC	48.4	34.6	-28.6
QLD	56.3	45.6	-19.1
WA	45.7	42.6	-6.7
SA	46.1	41.7	-9.6
TAS	53.2	50.6	-5.0
ACT	43.4	27.7	-36.2
NT	117.8	87.0	-26.2
<b>Australia</b>	<b>49.9</b>	<b>40.1</b>	<b>-19.6</b>

Source: AIHW mortality database.

### Data issues

#### Definitions

- Deaths data are based on year of registration rather than year of death.
- Number of deaths per 100,000 persons, age standardised to the 1991 total Australian population

#### Data availability

- Deaths data for injury and poisoning are sourced from the Registrars of Births, Deaths and Marriages in each State and Territory, and are usually based on the records of coroners.

#### Data reliability

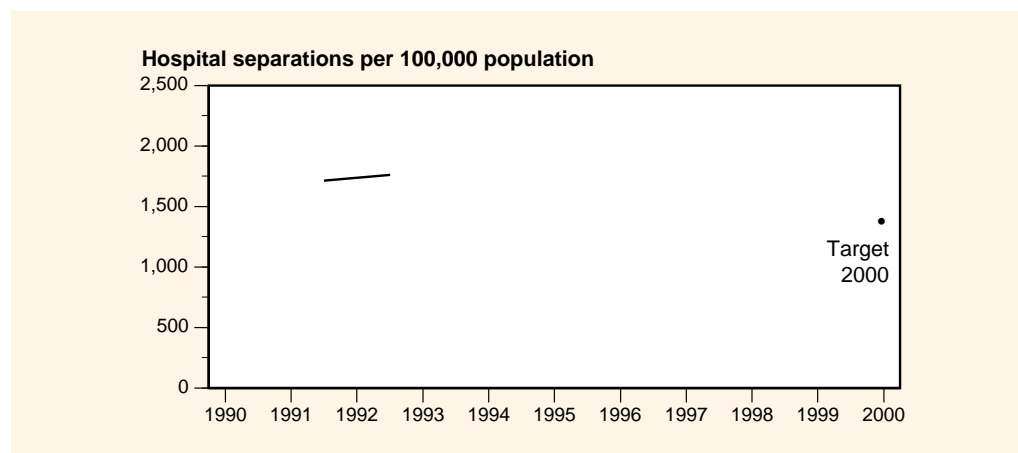
- The reliability of deaths data depends principally on the information available in coroners' records and on the reliability of the application of ICD-9 E-codes, generally based on that information. There is considerable potential for factors to do with information recording or coding to affect data quality. Beginning with 1993 registrations, data coding has been centralised at the Brisbane office of the Australian Bureau of Statistics. This arrangement should improve comparability of the information.

## Injury prevention and control

### INDICATOR 4.1.2 Hospital separation rate for injury and poisoning in the total population

**Primary goal: Reduce the incidence, and impact on health, of injury in the Australian population**

#### National trends



Population group	Baseline 1991-92	1992-93	Target 2000
Total population	1,714	1,760	1,371

*Note:* The baseline figure of 1,826 hospital separations per 100,000 in 1991-92, given in the BHO report, was based on New South Wales hospital separation data, and has been revised to reflect the national rate. The Target 2000, set at 20% below the 1991-92 baseline, has also been revised accordingly.

*Source:* AIHW National Injury Surveillance Unit.

- About 40 hospital separations occur for every death due to injury; however, significant variation occurs for the type of injury sustained.
- The age-standardised hospital separation rate for all injuries among males is higher than the female rate. In 1992-93, approximately three males were treated for an injury in Australian hospitals for every two females.
- Not all persons are at equal risk of being injured; the severity of injury requiring hospitalisation also varies with age and location.
- Between 1991-92 and 1992-93, the age-standardised hospital separation rate for all injuries in the total population increased by 2.7%. This increase will need to be checked if the year 2000 target of 1,371 hospital separations per 100,000 is to be met.
- Only two data points are currently available to monitor progress towards the target. Further data are, however, required to determine the trend clearly.
- Hospital separations are a reasonable indicator of acute injuries, but are not a precise measure of injury incidence. About seven emergency department attendances occur for every admitted case, and about the same number of people visit a general practitioner as an emergency department for all injuries.

## All injuries (ICD-9 E800–869, E880–929, E950–999)

### Data issues

#### Definitions

- A hospital separation occurs when a patient leaves the care of an acute hospital. This includes discharge, transfer or death.
- The direct method of age standardisation was used to estimate hospital separation rates.

#### Data coverage

- State and Territory rates for hospital admission due to injury and poisoning are subject to large variability in coverage.

- Updated State and Territory estimates of hospital separations are not yet available.

#### Data reliability

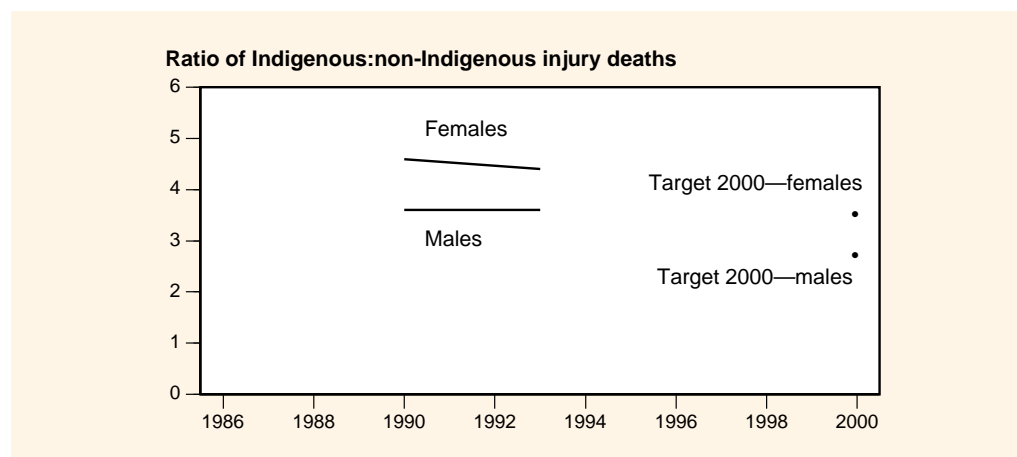
- Hospital separation rates are not a precise measure of severe injury incidence. Variation in hospital separation rates may be caused by changing admission procedures, information capturing and processing methods, extent of coverage of public and private hospitals and the relative utilisation of hospitals.

## Injury prevention and control

### INDICATOR 4.2.1 Death rate ratio comparing the injury status of Indigenous and non-Indigenous populations

**Goal: Reduce injury-related health inequalities among priority populations and the whole community**

#### National trends



Death rate ratio	Baseline 1989-91	1992-94	Target 2000
Males	3.6	3.6	2.7
Females	4.6	4.4	3.5

#### Notes

1. Data from Western Australia, South Australia and the Northern Territory only.
2. The baseline given in the BHO report (2.9:1 in 1990-92, both sexes combined) was based on deaths data from all States and Territories except Queensland. In light of incompleteness of Indigenous identification in deaths data in some jurisdictions, the baselines and targets have been revised. Accordingly, the Target 2000 reflect a 25% reduction from the baseline, as indicated in the BHO report.

Source: Anderson et al. (1996).

- Injuries are one of the leading causes of death among Indigenous people, with an age-standardised death rate of 223 per 100,000 males and 101 deaths per 100,000 females in 1992-94 (Anderson et al. 1996).
- The death rates for injuries are much higher among the Indigenous population than in the non-Indigenous population. The death rate ratio, or standardised mortality ratio (SMR), for all injuries between Indigenous and non-Indigenous males in 1992-94 was 3.6; the ratio for Indigenous females was 4.4.
- The injury death rate for Indigenous people compared with non-Indigenous people is greatest for transport-related causes in middle age, drowning in adulthood, poisoning with non-pharmaceutical substances (particularly petroleum products and solvents), effects of fire in late adulthood, suicide in early adulthood and particularly interpersonal violence throughout adulthood (Harrison & Cripps 1994).
- A mean annual reduction of 2.3% occurred in the death rate for injuries among Indigenous males during 1985-94. The decline in the death rate over the same period was much smaller among Indigenous females (Anderson et al. 1996).
- Between 1989-91 and 1992-94, no reduction in the SMR was noted between Indigenous and non-Indigenous males. However, a 5% reduction in SMR was noted for females between the two periods.
- The BHO target of reducing the death rate ratio was stated in terms of reducing the Indigenous rate towards the non-

## All injuries (ICD-9 E800–869, E880–929, E950–999)

### Data issues

#### Definitions

- An indirect method of age standardisation was used to estimate the death rate ratio, or standardised mortality ratio (SMR).
- Estimates of SMR are based on data from Western Australia, South Australia and the Northern Territory only. Indigenous deaths data for New South Wales and South Australia were of variable quality for this analysis.
- The baseline ratios given in the BHO report were based on deaths data for New South Wales, Victoria, South Australia, Western Australia and the Northern Territory. In view of the incompleteness of Indigenous deaths data from New South Wales and Victoria, new baseline values were obtained using deaths data from South Australia, Western Australia and the Northern Territory only. Target 2000 was modified accordingly to reflect the revised baseline.

#### Data availability

- AIHW data based on information collected by State and Territory Registrars of Births, Deaths and Marriages

#### Data coverage

- Annual and national; States and Territories. Identification of Indigenous deaths in Queensland was introduced beginning 1996.

#### Data reliability

- Only mortality data for Western Australia, South Australia, the Northern Territory and the Australian Capital Territory are considered to be of publishable standard by the Australian Bureau of Statistics and the Australian Institute of Health and Welfare (Anderson et al. 1996).
- The analysis of trends in mortality is usually done by year of registration, rather than year of occurrence, in order to utilise data for the latest year of registration. For Australia as a whole this makes little difference because the proportion of deaths not registered in the year of occurrence is fairly constant from year to year. However, the proportion of Indigenous deaths not recorded in the year of occurrence varies by year and jurisdiction. An analysis of Indigenous mortality by year of registration could be misleading; the estimates used in this report are therefore based on year of occurrence of death.

#### Data deficiencies

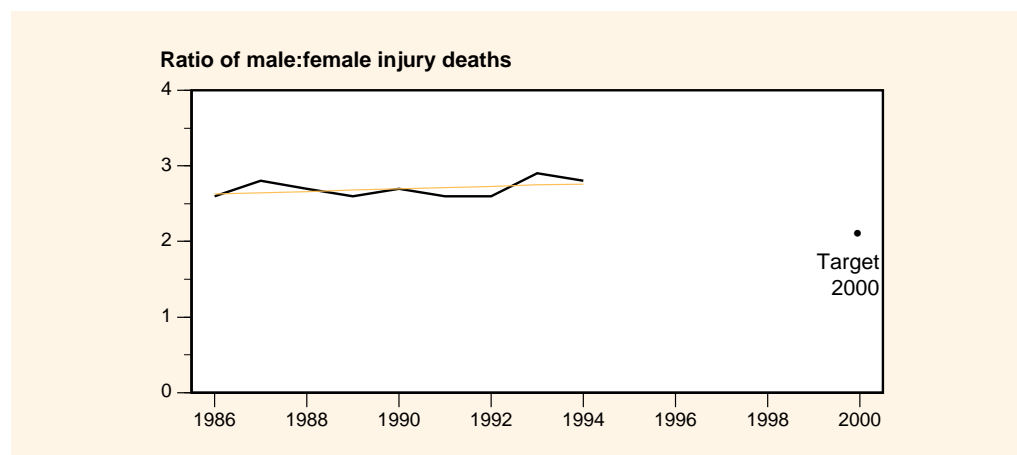
- Indigenous deaths data from New South Wales, Victoria and Tasmania are incomplete and of indeterminate quality.

## Injury prevention and control

### INDICATOR 4.2.2 Death rate ratio comparing the injury status of males and females

*Goal: Reduce injury-related health inequalities between priority populations and the whole community*

#### National trends



Death rate ratio	1986	1987	1988	1989	1990	1991	Baseline 1992	1993	1994	Target 2000
Male:female	2.6	2.8	2.7	2.6	2.7	2.6	2.6	2.9	2.8	2.1

*Note:* Target 2000 reflects a 20% reduction in the baseline, as indicated in the BHO report.  
*Source:* AIHW mortality database.

- Death rates for injury have been historically much higher among males than females. In 1994, there were 5,087 male deaths and 2,100 female deaths, with an age standardised death rate ratio of 2.8.
- There has been a steady decline in injury mortality over the past several decades, due mainly to a reduction in the death rate among females. As a result, a widening of the gap in the male:female injury death rates occurred during the 1960s and 1970s.
- The decline in injury death rates has continued over the past decade (see 'Death rate for injury and poisoning in the total population', on page 88), but the decline has not been accompanied by reductions in the male:female death rate ratio.
- Differences in male:female suicide rates are a large contributor to this high death rate ratio. Significant differences also exist in the rate ratios for transport-related injuries and homicides.
- Differences in injury mortality between males and females are greatest in the age group 15–29 years, with males experiencing more than four times the injury mortality of young females.
- If current trends continue, it appears unlikely that the Target 2000 death rate ratio of 2.1:1.0 between males and females will be achieved.
- The BHO target of reducing the death rate ratio was stated in terms of reducing the male rate towards the female rate.

## All injuries (ICD-9 E800–869, E880–929, E950–999)

### Data issues

#### Definitions

- The direct method of age standardisation was used to estimate the death rates. The death rate ratios were obtained using these age-standardised rates.

#### Data availability

- Deaths data for injury and poisoning are sourced from the Registrars of Births, Deaths and Marriages in each State and Territory, and are usually based on the records of coroners.

#### Data reliability

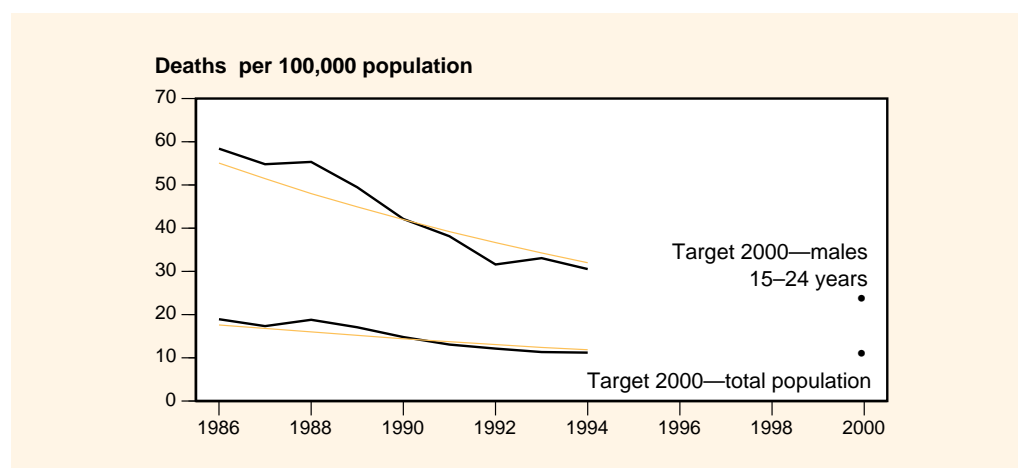
- The reliability of deaths data depends principally on the information available in coroners' records and on the reliability of the application of ICD-9 E-codes, generally based on that information. There is considerable potential for factors to do with information recording or coding to affect data quality.

## Injury prevention and control

### INDICATORS 4.3.1 and 4.3.2 Death rate for road transport- related injury in the total population, and among males aged 15–24 years

**Goal: Reduce transport-  
related mortality**

#### National trends



Population group	1986	1987	1988	1989	1990	1991	Baseline 1992	1993	1994	Target 2000
Total population	18.9	17.3	18.8	17.0	14.8	13.0	12.0	11.2	11.1	10.7
Males aged 15–24 years	58.3	54.8	55.3	49.4	42.1	38.1	31.5	33.0	30.5	23.6

#### Notes

1. The baseline values differ slightly from the rates published in the BHO report due to differing populations used for age standardisation.

2. Target 2000 for males aged 15–24 years reflects a 25% reduction from the 1992 baseline, as indicated in the BHO report.

Source: AIHW mortality database.

- Road transport-related accidents are a major cause of injury deaths. The death rates are particularly high among 15–24 year old males. In 1994, as many as 1,979 people (1,379 males and 600 females) died as a result of an accident on Australian roads.
- The decline in road deaths, particularly since 1988, has contributed substantially to the overall decline in injury mortality. The age-standardised death rate for road transport-related injury among males aged 15–24 years has also fallen substantially. However, road vehicle accidents remain a leading cause of injury deaths in Australia, equalled only by suicide.
- According to the Federal Office of Road Safety (1996), between July 1994 and June 1995, 42% of fatalities were drivers of vehicles, 25.9% were passengers in vehicles, 19.2% were pedestrians and 10.0% were motorcyclists (including pillion riders).
- Based on current trends, the targets of 10.7 deaths per 100,000 total population and 23.6 deaths per 100,000 population aged 15–24 years are expected to be reached—several years before 2000. However, road safety agency data for the period to mid-1996 show a levelling off in road fatality numbers, and a small increase after mid-

## Transport injury (ICD-9 E810–819, E826–829)

### State comparisons

- The age-standardised death rate for road vehicle accidents declined between 1986–88 and 1992–94 in all States and Territories. The decline was almost 60% in the Australian Capital Territory, followed by the Northern Territory, Victoria and New South Wales with declines ranging from 40% to 48%. The rate of decline was much lower in other States.
- The death rate in the Australian Capital Territory was the lowest among all States and Territories, both in 1986–88 and 1992–94. In comparison, the death rate in the Northern Territory (27.8 per 100,000), over the period 1992–94, was much higher than the national average (11.5 per 100,000), despite a 47.3 reduction between 1986–88 and 1992–94.
- The age-standardised death rate for road vehicle accidents among males aged 15–24 years also declined in all States and Territories between the two periods. A more than 60% reduction in the death rate from road transport accidents was noted in the Northern Territory in this age group.
- Recent declines notwithstanding, the death rate in the Northern Territory over the period 1992–1994 (61.5 per 100,000) among males in the age group 15–24 years was twice the national average (31.7 per 100,000). The death rates among 15–24-year-old males were also considerably higher in Western Australia (41.3 per 100,000) and Tasmania (42.6 per 100,000). In comparison, in the Australian Capital Territory, the transport injury-related death rate among young males (15–24 years) in

### Number of deaths per 100,000 population

State/Territory	Total population			Males aged 15–24 years		
	Average 1986–88	Average 1992–94	Per cent change	Average 1986–88	Average 1992–94	Per cent change
NSW	17.9	10.7	–40.5	54.8	27.4	–50.0
VIC	18.2	9.6	–47.3	57.1	27.1	–52.5
QLD	19.0	13.6	–28.2	52.8	37.0	–30.0
WA	16.1	13.0	–19.2	53.8	41.3	–23.3
SA	18.6	12.5	–32.7	63.4	36.7	–42.1
TAS	18.6	13.5	–27.5	51.9	42.6	–18.0
ACT	16.0	6.5	–59.4	46.0	15.3	–66.8
NT	52.8	27.8	–47.3	115.4	61.5	–46.8
<b>Australia</b>	<b>18.3</b>	<b>11.5</b>	<b>–37.4</b>	<b>56.1</b>	<b>31.7</b>	<b>–43.6</b>

Source: AIHW mortality database.

### Data issues

#### Definitions

- Mortality data are based on year of registration, rather than year of death.
- The direct method of age standardisation was used.

#### Data availability

- State mortality data are provided by the Registrars of Births, Deaths and Marriages in each State and Territory, and for injuries are usually based on the records of coroners.

#### Data reliability

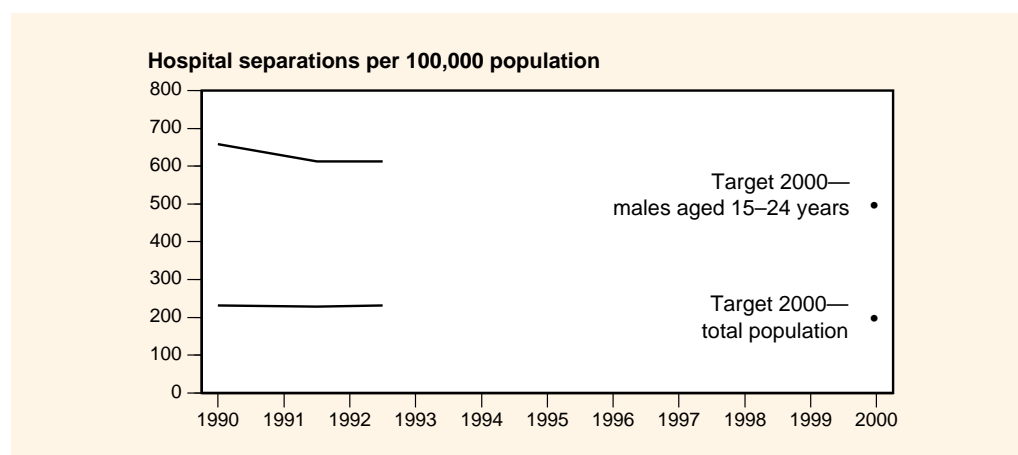
- The reliability of deaths data depends principally on the information available in coroners' records, and on the reliability of the application of ICD-9 E-codes, generally based on that information. There is considerable potential for factors to do with information recording or coding to affect data in different ways for different States and Territories. Hence, apparent differences between jurisdictions should be interpreted with caution.

## Injury prevention and control

### INDICATORS 4.3.3 and 4.3.4 Hospital separation rate for road transport-related injury in the total population, and among males aged 15–24 years

*Goal: Reduce transport-related morbidity*

#### National trends



Population group	Baseline 1990	1991–92	1992–93	Target 2000
Total population	232	228	231	194
Males aged 15–24 years	658	612	612	494

#### Notes

1. The baseline values given in the BHO report are for the calendar year 1990, and are not age standardised. ICD-9 codes E827–829 were also not included; these codes represent approximately 11% of total cases and 6% of cases for males aged 15–24 years.
2. Targets for the year 2000 reflect a 25% reduction in the baselines, as indicated in the BHO report.

Source: AIHW National Injury Surveillance Unit.

- In 1992–93, there were over 40,000 hospital separations due to road transport-related injuries (approximately 25,000 male and 15,000 female separations), with an age-standardised rate of 231 per 100,000 persons.
- Males aged between 15 and 24 years experience nearly three times the rate of road injury-related hospitalisation than occurs in the total population. This differential is similar to the road transport death rates comparing young males with the total population (see 'Death rate for road transport-related injury in the total population, and among males aged 15–24 years', on page 100).
- The baseline rates for this particular indicator require revision. The 1990 baselines were based on calendar year data, and were not age standardised. Besides, the rates were underestimated because of the non-inclusion of E-codes 827–829. Therefore, the 1991–92 rates should be used as baselines, with targets set at 20% to 25% below these rates.

## Transport injury (ICD-9 E810–819, E826–829)

### Data issues

#### Definition

- Hospital separations per 100,000 population

#### Data coverage

- State and Territory rates for hospital admission due to road transport-related injury are subject to large variability in coverage.
- Updated State and Territory estimates of hospital separations are not yet available.

#### Data reliability

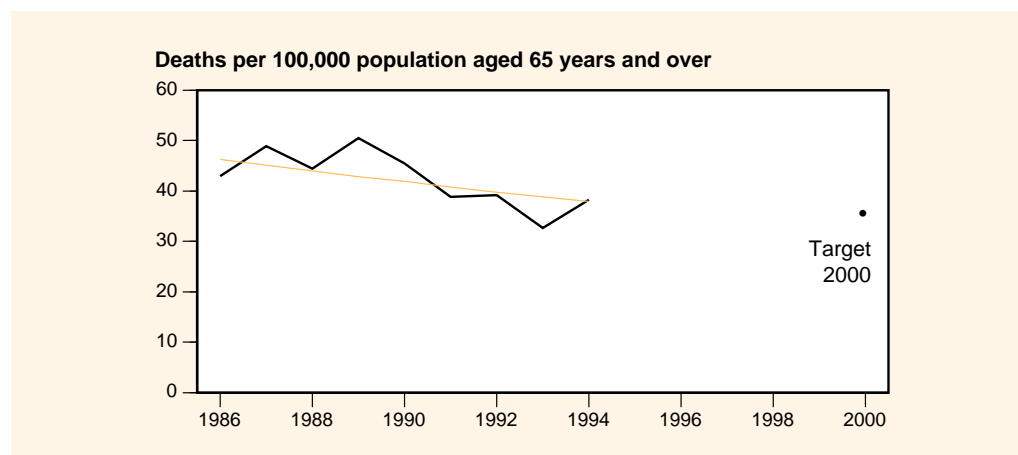
- Hospital separations constitute a reasonable indicator of acute injuries, but are not a precise measure of injury incidence. Year-by-year variations may be caused by changes in admission procedures, information capture and processing, and inclusion of a particular hospital in the database.

## Injury prevention and control

### INDICATOR 4.5.1 Death rate due to falls among people aged 65 years and over

**Goal: Reduce mortality  
associated with falls among  
older people**

#### National trends



Population group	1986	1987	1988	1989	1990	1991	Baseline 1992	1993	1994	Target 2000
Aged 65 years and over	43.0	48.9	44.5	50.5	45.4	38.9	39.3	32.7	38.3	35.4

#### Notes

1. The baseline value differs slightly from the rate published in the BHO report due to differing populations used for age standardisation.
2. Target 2000 reflects a 10% reduction in the baseline, as indicated in the BHO report.

Source: AIHW mortality database.

- A large proportion of deaths from external causes in old age result from falls, primarily due to complications developed after the fall. The proportion rises with age, from about 15% of deaths from all external causes among people aged 65–69 years, to about 75% at age 85 years and above.
- Fractures are the most common serious injury resulting from falls, with hip fractures the most significant in terms of mortality and serious functional impairment (Fildes 1994). About half of the older people who sustain a fractured hip never regain their pre-fall level of functioning (Cummings et al. 1985).
- More women than men die as a result of a fall, osteoporosis in post-menopausal women greatly increasing the risk of fracture and complications. In 1994, 510 women and 333 men, aged 65 years and over, died of this cause. Of the 510 female fatalities, more than half were aged 85 years and over.
- The age-standardised death rate for falls among people aged 65 years and over declined by 10.9% between 1986 and 1994, falling substantially below the year 2000 target in 1993 but rising back again in 1994.

## Accidental falls (ICD-9 E880–888)

### State comparisons

- Large variability is noted in the death rates from falls in persons aged 65 years and over among States and Territories, due probably to small numbers in some jurisdictions. While the death rate in New South Wales reflected the national average both in 1986–88 and 1992–94, the rates were below the national rate in Western Australia and South Australia.
- The decline in the age-standardised death rate for falls among people aged 65 years and over between 1986–88 and 1992–94 was observed in all States and Territories, except the Northern Territory and Tasmania.
- The greatest decline in death rates was noted in the Australian Capital Territory but the drop was from a higher than average base. In 1992–94, the death rate in the Australian Capital Territory was below the national rate.

### Number of deaths per 100,000 population, aged 65 years and over, due to falls

State/Territory	Average 1986–88	Average 1992–94	Per cent change
NSW	43.6	36.6	-16.0
VIC	53.1	37.1	-30.2
QLD	52.8	42.6	-19.3
WA	36.9	29.7	-19.4
SA	29.6	29.1	-1.6
TAS	39.0	45.0	15.4
ACT	61.8	28.2	-54.4
NT	41.9	50.2	19.9
<b>Australia</b>	<b>45.5</b>	<b>36.7</b>	<b>-19.2</b>

Source: AIHW mortality database.

### Data issues

#### Definitions

- Mortality data are based on year of registration rather than year of death.
- The direct method of age standardisation was used to determine death rates.

#### Data availability

- State mortality data are provided by the Registrars of Births, Deaths and Marriages in each State and Territory.

#### Data reliability

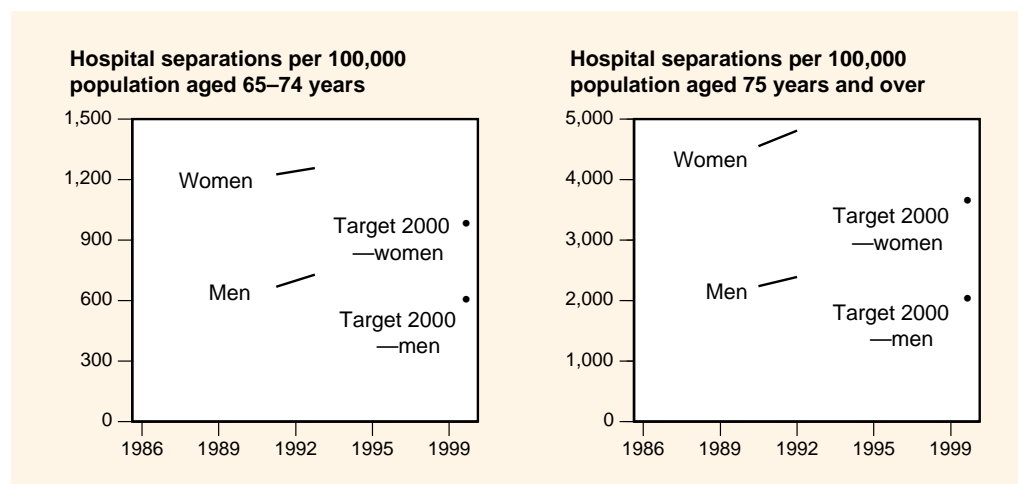
- Unlike most other types of injury, a high proportion of deaths attributed to a fall are registered by a medical practitioner rather than a coroner. This practice may influence the comparability of deaths data.

## Injury prevention and control

### INDICATOR 4.5.2 Hospital separation rate due to falls among people aged 65 years and over

**Goal: Reduce morbidity associated with falls among older people**

#### National trends



Age group	Sex	Baseline 1991–92	1992–93	Target 2000
65–74 years	Men	668	730	601
	Women	1,225	1,256	980
75 years and over	Men	2,242	2,391	2,018
	Women	4,554	4,814	3,643

#### Notes

1. The baselines given in the BHO report were based on Victorian data for 1986–91. The 1991–92 baselines have been revised and are national rates. The targets have also been adjusted accordingly.

2. The targets reflect a 10% reduction in the baseline for men and a 20% reduction in the baseline for women.

Source: AIHW National Injury Surveillance Unit.

- Fall injuries contribute substantially to hospitalisation for all external causes, among those aged 65 years and over. Older women are more at risk than older men for hospitalisation after the fall.
- Risk of hospitalisation from a fall also increases substantially with age. In 1992–93, men and women aged 75 years and over were respectively hospitalised at 3.3 and 3.8 times the rate for their counterparts aged 65–74 years.
- The age-standardised hospital separation rate for fall injury among older men and women increased between 1991–92 and 1992–93. The increase was noted in both age groups, 65–74 years and those aged 75 years and over. It is not clear whether these increases were due to changes in incidence, reduction in the fatality rate, admission practice or counting. Several more years of data will be required to build a useful time series.
- The rate of hospitalisation for fall injury among older people will need to decline substantially if the year 2000 targets are to be reached.

## Accidental falls (ICD-9 E880–888)

### Data issues

#### Definition

- Hospital separations per 100,000 population, aged 65–74 years, and those aged 75 years and over

#### Data coverage

- State and Territory rates for hospital admission due to falls are subject to large variability in coverage.
- Updated State and Territory estimates of hospital separations are not yet available.

#### Data reliability

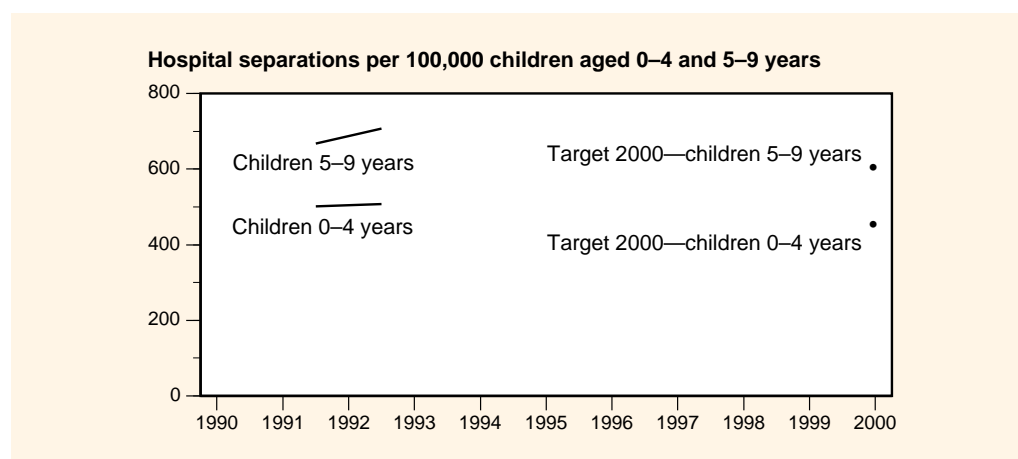
- Hospital separations constitute a reasonable indicator of acute injuries, but are not a precise measure of injury incidence. Year-by-year variations may be caused by changes in admission procedures, information capture and processing, and inclusion of a particular hospital in the database.

## Injury prevention and control

### INDICATOR 4.5.5 Hospital separation rate due to falls among children aged 0–4 and 5–9 years

*Goal: Reduce mortality and morbidity associated with falls among children*

#### National trends



Age group	Baseline 1991–92	1992–93	Target 2000
0–4 years	550	502	452
5–9 years	634	668	601

#### Notes

- The baseline figures for hospital admission rates among 0–4 year olds (550 per 100,000) and among 5–9 year olds (634 per 100,000) given in the BHO report were based on New South Wales only and have been revised to reflect national rates.
- The targets reflect a 10% reduction in the baselines, as indicated in the BHO report.

Source: AIHW hospital morbidity database.

- Falls are the leading cause of admissions to hospital for children. Among 0–4 year olds, falls frequently occur in the home, whereas among 5–9 year olds they are more common in playgrounds.
- Falls are more common among boys, particularly among 5–9 year olds, although there is gender difference even at younger ages.
- Between 1991–92 and 1992–93, the hospital separation rate for falls among 0–4 year olds and among 5–9 year olds increased.
- Although a time trend cannot be accurately determined from only two data points, the apparent increase in the rate of hospitalisation for fall injury among children between 1991–92 and 1992–93 will need to be reversed if the year 2000 targets are to be reached.
- Fall injury reduction can be achieved by a combination of measures, such as reducing the likelihood of falling, incorporating safety features in the design of the environment (e.g. slip-resistant surfaces on floors), and increasing the use of protective

## Accidental falls (ICD-9 E880–888)

### Data issues

#### Definition

- Hospital separations per 100,000 population, aged 0–4 years and 5–9 years

#### Data coverage

- State and Territory estimates for hospital separation for falls are subject to large variability in coverage.
- Updated State and Territory estimates of hospital separations are not yet available.

#### Data reliability

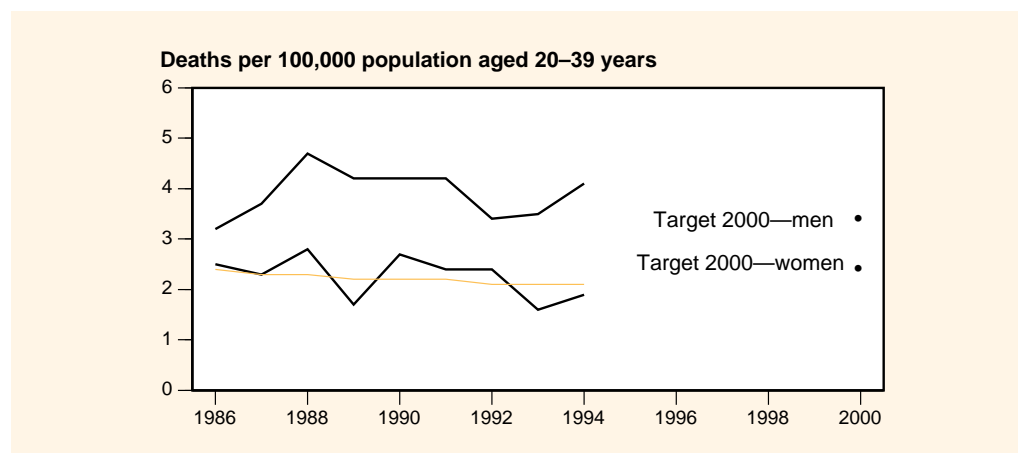
- Hospital separations are a reasonable indicator of acute injuries, but are not a precise measure of injury incidence. Year-by-year variations may be caused by changes in admission procedures, information capture and processing, and inclusion of a particular hospital in the database.

## Injury prevention and control

### INDICATOR 4.7.1 Death rate for homicide among people aged 20–39 years

*Goal: Reduce mortality due  
to interpersonal violence*

#### National trends



Population group (20–39 years)	1986	1987	1988	1989	1990	1991	Baseline 1992	1993	1994	Target 2000
Men	3.2	3.7	4.7	4.2	4.2	4.2	3.4	3.5	4.1	3.4
Women	2.5	2.3	2.8	1.7	2.7	2.4	2.4	1.6	1.9	2.4

Note: The data for men did not support the fitting of a trend.

Source: AIHW mortality database.

- Fatal outcomes from intentional injuries, or homicides, provide a practical indicator of the nature and extent of interpersonal violence in the population. However, homicides are not distributed evenly throughout the population and take much greater toll among men, the young and Indigenous people, particularly those living in rural and remote areas.
- In 1994, 117 men and 54 women aged 20–39 years died as a result of interpersonal violence, with a death rate ratio of 2.2:1.0. The indirectly standardised homicide ratios for Indigenous men and women in 1992–94 were 15.4 and 17.1 respectively, when compared to their non-Indigenous counterparts (Anderson et al. 1996).
- Until 1992, the year on which the year 2000 targets for homicide among men and women aged 20–39 were based, the homicide rates were on the rise. The targets set at that point were therefore aimed at stabilising the homicide rates.
- Among men aged 20–39 years, no clear trend is discernible in the time series 1986–94, but a comparison of death rates between 1986–88 and 1992–94 revealed a small decline (5.3%). It is difficult to make a prediction about the year 2000 target for men (3.4 per 100,000) in the absence of a clear trend.
- Recent declines in the homicide rate for women suggest that, barring a late change in the trend, the year 2000 target for women (2.4 per 100,000) is likely to be met.

## Homicide (ICD-9 E960–978; 990–999)

### State comparisons

- State and Territory comparisons reveal some differences in homicide rates. In particular, the 1992–94 homicide rates in the Northern Territory for both men and women, aged 20–39 years, were seven to eight times the national average.
- Small numbers do not allow in-depth interpretation of changes in the rate between 1986–88 and 1992–94. In Western Australia, however, the increase in the rate was substantial, more than 100% between the two periods.
- The age-standardised death rate among women for interpersonal violence declined in all States and Territories between 1986–88 and 1992–94, except in South Australia which showed an increase of over 25%.

### Number of homicide deaths per 100,000 persons aged 20–39 years

State/Territory	Men			Women		
	Average 1986–88	Average 1992–94	Per cent change	Average 1986–88	Average 1992–94	Per cent change
NSW	3.6	3.1	–13.0	2.3	2.1	–8.7
VIC	4.2	3.2	–23.7	2.3	1.3	–44.0
QLD	4.5	4.3	–3.7	2.9	2.1	–28.1
WA	1.8	3.7	>100	2.5	2.3	–4.7
SA	3.4	3.6	6.7	1.6	2.1	25.5
TAS	3.4	1.8	–45.5	1.0	0.4	–53.8
ACT	2.0	1.7	–15.2	4.1	0.0	–100.0
NT	20.4	26.4	29.9	16.7	16.4	–1.4
<b>Australia</b>	<b>3.9</b>	<b>3.7</b>	<b>–5.3</b>	<b>2.5</b>	<b>2.0</b>	<b>–21.6</b>

Source: AIHW mortality database.

### Data issues

#### Definition

- Number of deaths per 100,000 persons aged 20–39 years.

#### Data availability

- State and Territory mortality data are provided by the Registrars of Births, Deaths and Marriages in each State and Territory, and are usually based on the records of coroners.
- Homicide data are based on year of registration rather than year of death.

#### Data reliability

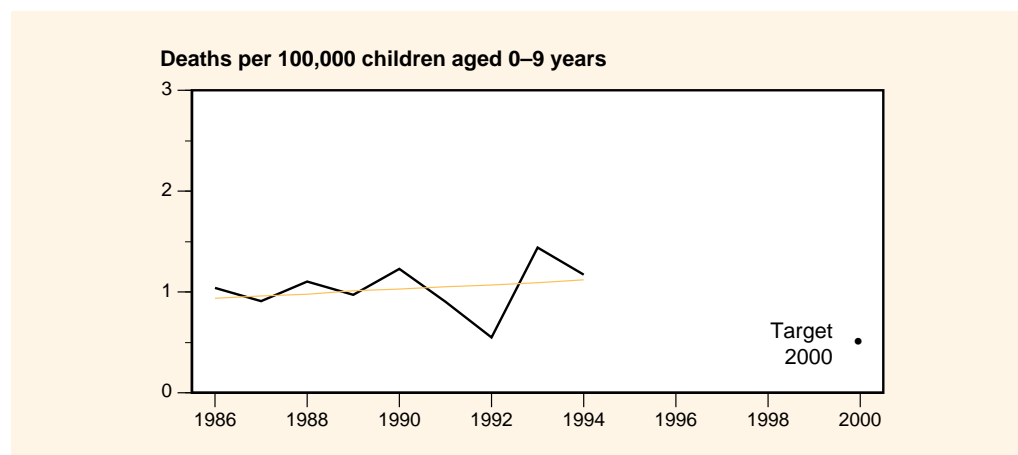
- Intentional injury resulting from interpersonal violence encompasses a range of injury types including homicide, sexual assault and assault, and domestic violence. Better data are available for fatal outcomes of interpersonal violence than non-fatal injuries; it is therefore likely that the death rate from these causes represents only a small proportion of the injury problems resulting from interpersonal violence.

## Injury prevention and control

### INDICATOR 4.7.2 Death rate for homicide among children aged 0–9 years

*Goal: Reduce mortality due  
to interpersonal violence*

#### National trends



Children	1986	1987	1988	1989	1990	1991	Baseline 1992	1993	1994	Target 2000
Aged 0–9 years	1.0	0.9	1.1	1.0	1.2	0.9	0.6	1.4	1.2	0.5

*Note:* The target reflects a 25% reduction in the baseline, as indicated in the BHO report.  
*Source:* AIHW mortality database.

- A number of structural, cultural and psychosocial factors contribute to child battering and maltreatment. Injury deaths inflicted by others on children have been specifically targeted under the NHPA initiative.
- Babies and toddlers are at greater risk from death due to abuse and violence than older children. Children aged 0–4 years accounted for 6% of all homicide deaths in the period 1992–1994; children aged 5–9 years constituted an additional 2% of all homicides.
- There has been a slight upward trend in the homicide rate for this age group (1.5% annually between 1986 and 1994) which must be reversed if the year 2000 target of 0.5 deaths per 100,000 is to be reached.

## Homicide (ICD-9 E960–978; 990–999)

### Data issues

#### State comparisons

- The numbers are too small for useful comparisons.

#### Definition

- Number of deaths per 100,000 children aged 0–9 years.

#### Data availability

- State and Territory mortality data are provided by the Registrars of Births, Deaths and Marriages in each State and Territory,

and are usually based on the records of coroners.

- Homicide data are based on year of registration rather than year of death.

#### Data reliability

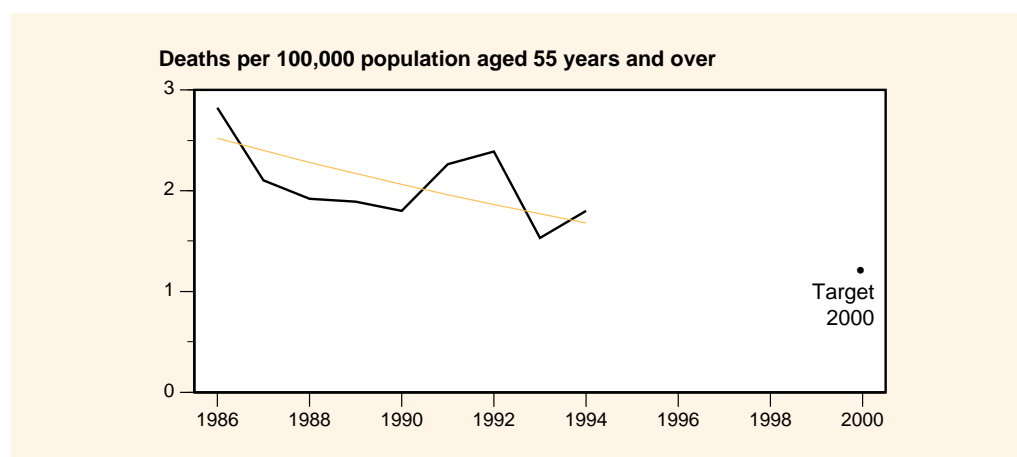
- Child battering and maltreatment results in a variety of injuries, some with fatal consequences. Better data are available for fatal outcomes than non-fatal injuries. It is therefore likely that the death rate from these causes represents only a small

## Injury prevention and control

### INDICATOR 4.9.1 Death rate for injury resulting from fire, burns and scalds among people aged 55 years and over

*Goal: Reduce mortality and morbidity associated with burns and scalds*

#### National trends



Population group	1986	1987	1988	1989	1990	1991	Baseline 1992	1993	1994	Target 2000
Aged 55 years and over	2.8	2.1	1.9	1.9	1.8	2.3	2.4	1.5	1.8	1.2

*Note:* The target reflects a 50% reduction in the baseline, as indicated in the BHO report.

*Source:* AIHW mortality database.

- Accidents due to fire, burns and scalds account for a relatively small proportion of injury incidents. However, the economic and long-term physical and psychosocial implications of serious burn and scald injuries are enormous and highlight the need for more extensive preventive action.
- Older people and children aged 0–4 years are particularly at risk of serious injury and death due to fire, burns and scalds (see 'Hospital separation rate for injury resulting from fire, burns and scalds among children aged 0–4 years', on page 116). Overall, about 2% of external causes of death are attributed to this form of injury. Among 0–4 year olds the proportion is about 8%, and among people aged 55 years and over the proportion is approximately 3%.
- There has been a steady decrease in the age-standardised death rate for fire, burns and scalds among men and women aged 55 years and over. The trend indicates an annual rate of decline of 3.6% per year among persons aged 55 years and over. At this rate of decline, the year 2000 target of 1.2 deaths per 100,000 is likely to be met.

## Burns and scalds injury (ICD-9 E890–899, E924.0)

### State comparisons

- There are considerable differences among the States in the death rate for fire, burns and scalds among those aged 55 years and over. Except in South Australia, declines in death rates were noted between 1986–88 and 1992–94 in all States.
- The death rates in the two Territories are based on small numbers and have been excluded from comparisons.

### Number of deaths per 100,000 population aged 55 and over

State/Territory	Average 1986–88	Average 1992–94	Per cent change
NSW	2.4	1.7	-26.8
VIC	3.1	2.1	-31.1
QLD	1.4	1.3	-8.4
WA	1.4	1.5	5.6
SA	1.5	3.0	>100
TAS	3.0	2.9	-4.0
ACT	3.4	0.7	>-100
NT	0.0	6.1	>100
<b>Australia</b>	<b>2.3</b>	<b>1.9</b>	<b>-16.4</b>

Source: AIHW mortality database.

### Data issues

#### Definitions

- Number of deaths per 100,000 persons aged 55 and over
- Age standardised to the 1991 Australian population

#### Data availability

- State mortality data are obtained from the Registrars of Births, Deaths and Marriages in each State and Territory, and are usually based on the records of coroners.

#### Data reliability

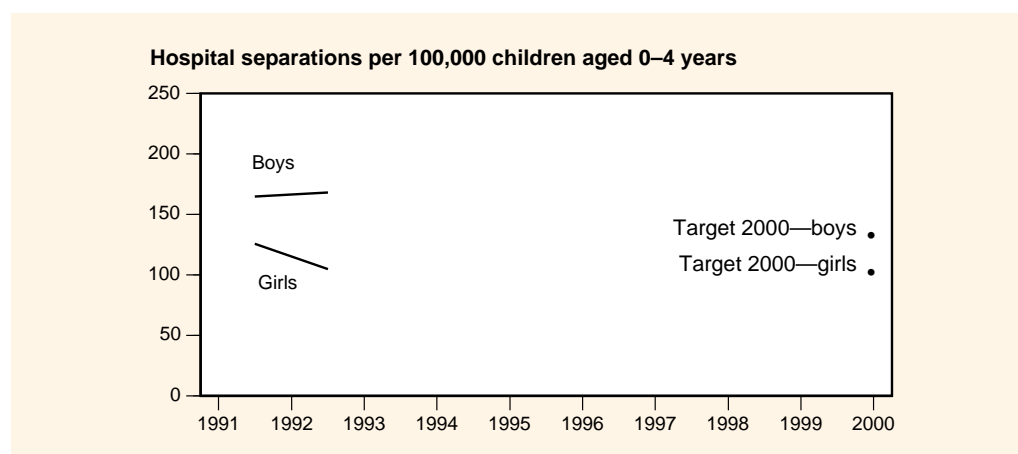
- The reliability of mortality data depends principally on the information available in coroners' records and on the reliability of the application of ICD-9 E-codes, generally based on that information. There is considerable potential for factors to do with information recording or coding to affect data in different ways for different States and Territories. Hence, apparent differences between jurisdictions should be interpreted with caution.

## Injury prevention and control

### INDICATOR 4.9.2 Hospital separation rate for injury resulting from fire, burns and scalds among children aged 0–4 years

*Goal: Reduce the mortality  
and morbidity associated  
with burns and scalds*

#### National trends



Children aged 0–4 years	Baseline 1991–92	1992–93	Target 2000
Boys	167	169	132
Girls	127	106	101

#### Notes

1. The baseline values given in the BHO report were based on New South Wales data only; the values given above were updated to reflect national rates.

2. The targets reflect a 20% reduction in the baselines, as indicated in the BHO report.

Source: AIHW National Injury Surveillance Unit.

- It has been estimated that by the age of five years, one in every 200 children will have been scalded severely enough to require admission to hospital.
- In 1992–93, 1,757 children aged 0–4 years were admitted to a hospital for injuries resulting from fire, burns or scalds, with boys outnumbering girls by 1.7:1.0.
- Although the hospital separation rate increased for boys and decreased for girls between 1991–92 and 1992–93, there are insufficient data to determine a trend.

## Burns and scalds injury (ICD-9 E890–899, E924.0)

### Data issues

#### Definition

- Hospital separations per 100,000 population, aged 0–4 years

#### Data coverage

- State and Territory estimates for hospital separation for injury resulting from fire, burns and scalds are subject to large variability in coverage.
- Updated State and Territory estimates of hospital separations are not yet available.

#### Data reliability

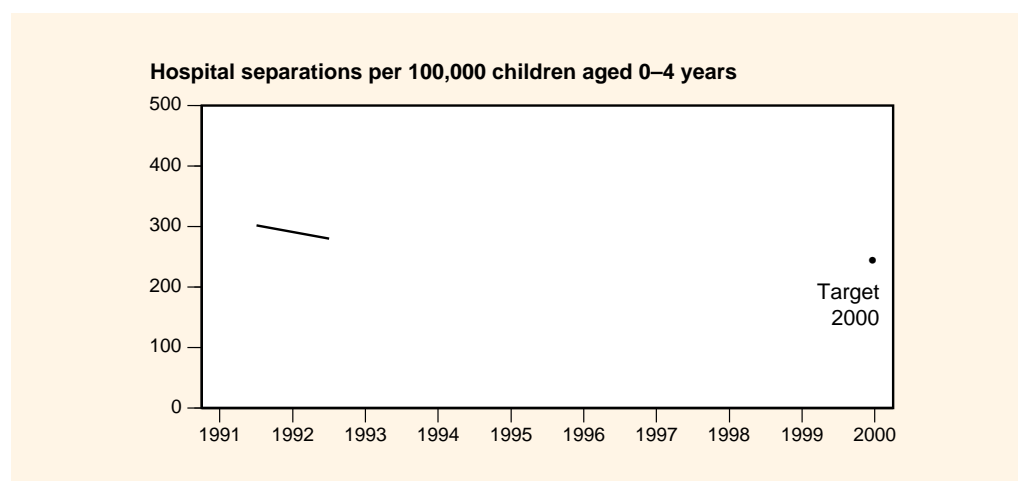
- Hospital separations are a reasonable indicator of acute injuries, but are not a precise measure of injury incidence. Year-by-year variations may be caused by changes in admission procedures, information capture and processing, and inclusion of a particular hospital in the database.

## Injury prevention and control

### INDICATOR 4.10.1 Hospital separation rate due to poisoning among children aged 0–4 years

*Goal: Reduce the morbidity in children due to poisoning*

#### National trends



Children	Baseline 1991–92	1992–93	Target 2000
Aged 0–4 years	302	280	242

#### Notes

1. The baseline value given in the BHO report was based on New South Wales data; the baseline given above was updated to reflect national rates.

2. The target reflects a 20% reduction in the baseline, as indicated in the BHO report.

Source: AIHW National Injury Surveillance Unit.

- The number of deaths from accidental poisoning by drugs (overdose) is rising overall, but childhood poisoning deaths are comparatively rare.
- Poisoning remains a significant cause of hospital admission for young children. Most of the poisoning cases are caused by the ingestion of drugs and medications (60%), followed closely by domestic chemicals (Victorian Injury Surveillance 1989).
- In 1992–93, 3,575 episodes of poisoning-related hospitalisation (2,023 boys and 1,552 girls) occurred. This is almost twice the number of hospitalisations for burns and scalds (see 'Hospital separation rate for injury resulting from fire, burns and scalds among children aged 0–4 years', on page 112).
- Although the hospital separation rate due to poisoning among children aged 0–4 years decreased between 1991–92 and 1992–93, there are insufficient data to

## Accidental poisoning in children (ICD-9 E850–858, E860–869)

### Data issues

#### Definition

- Hospital separations per 100,000 children, aged 0–4 years

#### Data coverage

- Estimates for hospital separation due to accidental poisoning are subject to variability in coverage.
- Updated State and Territory estimates of hospital separations are not yet available.

#### Data reliability

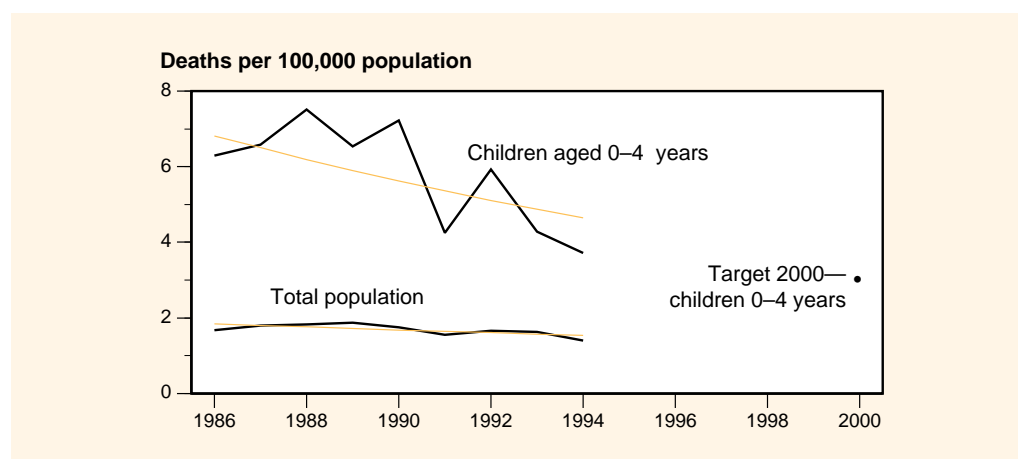
- Hospital separations are a reasonable indicator of acute injuries, but are not a precise measure of injury incidence. Year-by-year variations may be caused by changes in admission procedures, information capture and processing, and inclusion of a particular hospital in the database.

## Injury prevention and control

### INDICATOR 4.11.1 Death rate for drowning in the total population and among children aged 0–4 years

*Goal: Reduce the rate of drowning*

#### National trends



Population group	1986	1987	1988	1989	1990	1991	Baseline 1992	1993	1994	Target 2000
Total population	1.7	1.8	1.8	1.9	1.8	1.6	1.7	1.6	1.4	No target set
Children aged 0–4 years	6.3	6.6	7.5	6.5	7.2	4.3	5.9	4.3	3.7	3.0

*Note:* The target for children aged 0–4 years reflects a 50% reduction in the baseline, as indicated in the BHO report.  
*Source:* AIHW mortality database.

- Drowning is the most common cause of death among 0–4 year olds in Australia. It accounted for 42% (n=35) of all injury deaths to children in that age group. Of these, 25 drowned in a swimming pool in 1994.
- The death rate for drowning among babies and toddlers is higher than at any other age. In 1994, there were 250 deaths by drowning for all ages; 48 of these were children aged 0–4 years.
- Even at this early age, boys are at greater risk of drowning than girls. In 1994, the differential among 0–4 year olds was 3:1.
- The death rate for drowning among children aged 0–4 years declined at a rate of 4.7% per year between 1986 and 1994. In comparison, during that period, the age-standardised death rate due to accidental drowning in the total population declined by 2.2% per year.
- On current indications, the target for the year 2000 to reduce the death rate for drowning among 0–4 year olds is likely to be achieved.

## Accidental drowning (ICD-9 E910)

### State comparisons

- The Northern Territory experienced a substantially higher rate of drowning among 0–4 year olds in both 1986–88 (18.9 per 100,000) and 1992–94 (19.7 per 100,000) than any other State or Territory. These very high rates were also noted for the Territorians in other age groups.
- All States and Territories recorded a decline in the age-standardised death rate for drowning in the total population between 1986–88 and 1992–94. However, the change in drowning rates among 0–4 year olds was not uniform across the various jurisdictions. Tasmania, the Northern Territory and the Australian Capital Territory experienced an increase, although it is difficult to infer a trend based on the small numbers of deaths. Decreases ranging between 17.7% and 50.5% were recorded between the two periods in other

### Number of deaths per 100,000 population

State/Territory	Total population			Children aged 0–4 years		
	Average 1986–88	Average 1992–94	Per cent change	Average 1986–88	Average 1992–94	Per cent change
NSW	1.8	1.7	–3.6	5.6	3.6	–35.9
VIC	1.1	1.1	–4.4	5.1	4.2	–17.7
QLD	2.5	1.9	–23.0	11.7	5.8	–50.5
WA	1.9	1.8	–7.9	7.9	4.8	–39.5
SA	1.9	1.5	–21.1	6.4	4.7	–26.6
TAS	2.0	1.7	–14.8	1.9	5.7	>100
ACT	0.9	0.4	–50.8	3.1	5.9	88.3
NT	5.9	4.8	–19.2	18.9	19.7	4.0
<b>Australia</b>	<b>1.8</b>	<b>1.6</b>	<b>–11.5</b>	<b>6.8</b>	<b>4.6</b>	<b>–31.7</b>

Source: AIHW mortality database.

### Data issues

#### Definitions

- Number of deaths from drowning per 100,000 children aged 0–4 years
- The direct method of age standardisation has been used to determine age-standardised death rates.

#### Data availability

- State mortality data are provided by the Registrars of Births, Deaths and Marriages

in each State and Territory, and are usually based on the records of coroners.

#### Data reliability

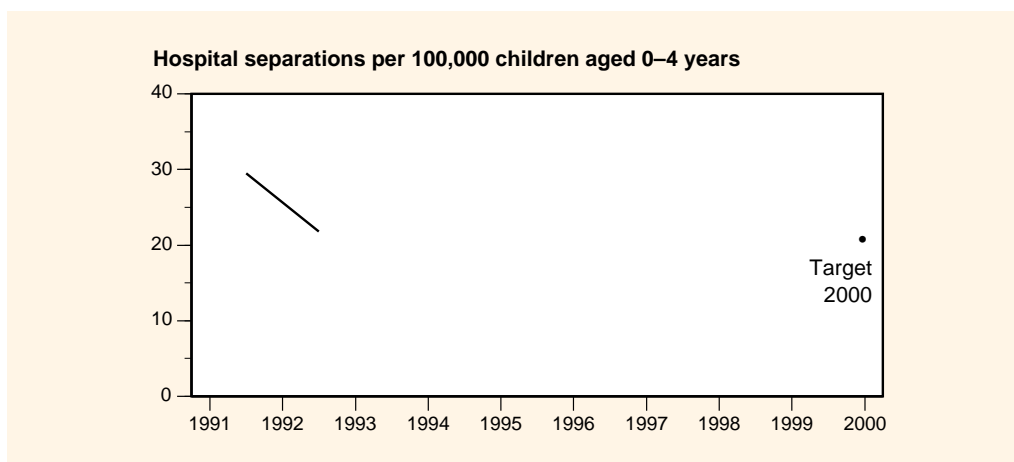
- ICD-9 E-codes for drowning do not identify major categories of interest in Australia, most notably drowning in swimming pools. A more informative classification has been used for drowning deaths registered from 1992 onwards.

## Injury prevention and control

### INDICATOR 4.11.2 Hospital separation rate for near-drowning among children aged 0–4 years

*Goal: Reduce the rate of  
near-drowning and  
associated morbidity*

#### National trends



Children	Baseline 1991–92	1992–93	Target 2000
Aged 0–4 years	29.5	21.8	20.7

#### Notes

1. A baseline of 12 separations per 100,000 population is given in the BHO report, a figure based on research by Nolan & Penny (1992). The baseline given above has been updated using information extracted from the National Hospital Morbidity Database.

2. The target reflects a 30% reduction in the baseline, as indicated in the BHO report.

Source: AIHW National Injury Surveillance Unit.

- For every death from drowning among 0–4 year olds (see 'Death rate for drowning in the total population and among children aged 0–4 years', on page 120) there are 4 to 5 babies and toddlers hospitalised for near-drowning.
- Most young children surviving a near-drowning are unaffected by the experience. However, the experience can cause severe disability (such as quadriplegia) in a minority of cases (Waugh et al. 1994).
- Between 1991–92 and 1992–93, the hospital separation rate for near-drowning declined substantially, although there is insufficient information to determine a trend from these data.
- Over the past several years, much has been achieved through the introduction of legislation to require pool fencing which isolates the child from the pool. However, there is a need to increase the proportion of existing pools with adequate fencing to make further headway in drowning.

## Accidental drowning (ICD-9 E910)

### Data issues

#### Definition

- Hospital separations per 100,000 children, aged 0–4 years

#### Data coverage

- Updated State and Territory estimates of hospital separations are not yet available. No State and Territory comparisons for injury hospitalisation are therefore provided in this report.

#### Data reliability

- Hospital separations are a reasonable indicator of acute injuries, but are not a

precise measure of injury incidence. Year-by-year variations may be caused by changes in admission procedures, information capture and processing, and inclusion of a particular hospital in the database.

- ICD-9 E-codes for drowning do not identify major categories of interest in Australia, most notably drowning in swimming pools.

## Injury prevention and control

### Priority indicators not reported due to incomplete information

Priority indicators for which the availability of data and/or the target status are presently incomplete, but which will be reported in future reports, are listed below.

Indicator	Data availability	Target status
4.2.3 Death rate ratio comparing the injury status among men aged 25–54 years from low socioeconomic groups with men from high socioeconomic groups	1997–98	Requires revision
4.2.4 Death rate ratio comparing the injury status among people living in rural and remote areas and the general population	Now	Possible
4.2.5 Hospital separation rate ratio comparing the injury status among the Indigenous and non-Indigenous populations	Now	Requires revision
4.2.6 Hospital separation rate ratio comparing the injury status among men aged 25–54 years from low socioeconomic groups with men from high socioeconomic groups	1997–98	Requires revision
4.4 Work-related injury	Not available by 1997–98	Not set
4.6.1 Hospital separation rate for sport- and recreation-related injuries	1997–98	Requires revision
4.6.2 Non-hospital admitted sport- and recreation-related injuries	Not available by 1997–98	Not set
4.8.2 Emergency department attendances resulting from product-related injury	1997–98	Not set
4.9.3 The proportion of houses equipped with smoke detectors and earth leakage breakers	Not available by 1997–98	Not set
4.11.3 Number of States and Territories requiring separation of domestic pools from houses	1997–98	Not set
4.11.4 The proportion of domestic pools with approved child-resistant fences, gates and barriers	Not available by 1997–98	Not set
4.11.5 The proportion of children and young people aged 10–16 years who have successfully completed a water safety and lifesaving course	Not available by 1997–98	Not set
4.12.1 Access of injured patients to optimal trauma care	Not available by 1997–98	Not set
4.13.1 Access of people with trauma injuries to comprehensive rehabilitation programs and appropriate long-term care and community support	Not available by 1997–98	Not set
4.14 Spinal cord injury	1997–98	Not set
4.15 Brain injury	Now	Not set

#### Notes

1. Data availability: 'Now'—monitoring data are currently available, and in many cases are up-to-date; '1997–98'—monitoring data are expected to become available by 1997–98; 'Not available by 1997–98'—monitoring data will not become available by 1997–98, but the indicator is considered to be of a sufficiently high priority for future reporting.
2. Target status: 'Not set'—no target has been set due to lack of baselines or trends data; 'Possible'—no target set, but is possible given available monitoring data (or the likelihood of these data becoming available soon); 'Requires revision'—target has been set but is based on poor quality, insufficient or non-existent monitoring data.
3. The indicator 'Morbidity due to interpersonal violence' has been excluded from the priority list due to lack of a clear definition.

## Strategies, initiatives and interventions

The following section deals with a selection of the activities that are occurring at the Commonwealth, State and Territory levels, with the broad aim of reducing the impact of injury on the community. The information below is far from comprehensive; rather, it gives a few examples of the activities that are considered to have contributed to, or to have the potential to contribute to, changed health status. It is provided to facilitate the exchange of information about activity which is deemed to be particularly useful, and which may have potential to be adapted for use by other States/Territories.

Prevention	Management	Maintenance	Research/Information
NSW burns and scalds prevention and management	Trauma Service Accreditation Standards	ACT Injury Task Force	Queensland Injury Surveillance System
Injury prevention for older persons—South Australian Make it Safe Program			
West Australian Injury Prevention Resource Package			
The Northern Territory Living With Alcohol Program			
Victorian SAFE Program for child injury prevention			
Queensland scalds prevention campaign			

## Prevention

### NSW burns and scalds prevention and management

This is a local multi-sectoral program with specific targets set by the Area Health Service and subject to evaluation through the Area's Performance Agreement with the Department. These include commitments to:

- implement best practice for burns and scalds prevention at the local level;
- reduce injuries from fires;
- increase the number of homes with smoke alarms;
- reduce injuries from scalds in infants (0–4 years);
- decrease the number of homes with bathroom hot water at a greater temperature than 50°C;
- provide optimal management for burns and scalds based on evidence-based guidelines; and
- implement best practice guidelines for patients with burns, to collect agreed indicators.

## **Injury prevention and control**

### **Injury prevention for older persons—South Australian Make it Safe Program**

This program is aimed at assisting elderly people in their homes, with the objective of reducing hazards that cause falls. The program reaches individuals through presentations about falls prevention made to organisations to which they belong, e.g. elderly citizens clubs and church fellowships. Individuals are recruited to the program through these presentations. The program has served over 5,000 people in South Australia to date. Home safety advisers are carefully selected and trained to provide expert assistance to the elderly participants in their homes. They offer free home safety audits, night lights, smoke detectors and information pamphlets, and arrange for home modifications if required. Modifications include floor treatments and handrails.

A thorough evaluation of this initiative has been undertaken which concludes that this program provides the most cost-efficient way of reducing hazards that cause falls. The risk of fall injury in the home has been halved at a cost of around \$60 to \$70 per household, including all overhead costs.

### **West Australian Injury Prevention Resource Package**

A comprehensive manual for the education and support of injury prevention officers was published by the Injury Control Program in September 1996. The resource package contains information on strategies for preventing a wide range of common injuries, and a guide to resources available and groups working in the area. There is a simple guide to the development of community-based injury prevention committees and how to harness local resources. The package is available free to people attending training courses, and otherwise is available for purchase.

### **The Northern Territory Living With Alcohol Program**

The Living With Alcohol Program is based on the principles that the community values alcohol when it is used in a responsible manner, and that total abstinence is appropriate for some individuals. The program involves a multi-faceted approach to preventing, and reducing harm done by, alcohol abuse, through integrated action in the areas of health services, legislation, community development and education, the liquor and hospitality industries, sport and leisure, domestic violence, the law enforcement and criminal justice systems, research and evaluation, and professional education and training.

Improvements since the program commenced include a 17% reduction in per capita pure alcohol consumption, an increase in light beer sales from 1% to 28% of the beer market, a 28% reduction in alcohol-related road accidents and fatalities, a 35% reduction in arrests for driving under the influence of alcohol, and particularly changes in community attitudes, such as the community-initiated weekly 'alcohol-free day' in Tennant Creek, the People's Alcohol Action Group in Alice Springs and increased local action in Aboriginal communities.

### Victorian SAFE Program for child injury prevention

Child injury prevention targets are prioritised in the statewide injury prevention strategy, *Taking Injury Prevention Forward*. The Safe Accident Free Environment (SAFE) Program aims to reduce injuries to children in low-income and non-English-speaking communities in inner Melbourne. It is currently funded by the Department of Human Services, is managed by the Safety Centre at the Royal Children's Hospital, and is operating in the cities of Moreland and Yarra.

The SAFE Program has two major focuses:

- a peer education program that trains community representatives to present safety information in their own language to existing community groups; and
- a program focusing on changing local government policy and practice to reflect current injury prevention philosophies.

Achievements so far include a reduction of hazards and injuries among children in the municipalities targeted, compared with the statewide injury rates among children, commitment to the maintenance of the SAFE Program in municipal public health plans, changes to open spaces maintenance contracts and inclusion of safety policies in children's services specifications.

### Queensland scalds prevention campaign

In 1996, Queensland Health commenced a scalds prevention campaign to reduce the incidence of hot water scalds to young children. The campaign encourages parents and carers to install hot water temperature control devices and to adopt safety practices that can greatly reduce the chance of a child being seriously burnt. The campaign to date has included the following measures:

- collaboration with manufacturers, distributors and plumbing merchants to increase the accessibility of hot water temperature control devices;
- extensive media education campaigns;
- provision of resource kits and parent information resources distributed statewide; and
- negotiation of support from electricity authorities.

## Management

### Trauma Service Accreditation Standard

The Australian Council of Healthcare Standards (ACHS) is soon to finalise Trauma Service Accreditation Standards. The ACHS received support from the Australian Health Ministers' Advisory Council and the Commonwealth Department of Health and Family Services. The standards are designed to be incorporated into the ACHS Charter for Change accreditation process, and are designed to encourage best practice in the provision of trauma services. The standards cover information management, access to services, human resource management and care procedures. The development of these guidelines is a national initiative.

## Injury prevention and control

### Maintenance

#### ACT Injury Task Force

In September 1995, the ACT Health Outcomes Reference Group recommended that injury be taken up as a priority area, due to its multi-sectoral nature and the fact that there is no existing program structure to address injury issues.

An Injury Prevention Symposium was held in March 1996 to coincide with the release of the publication *The Epidemiology of Injury in the ACT* (Gilbert & Gordon 1996). Participants recommended the establishment of an Injury Task Force to oversee the implementation of goals and targets in this area, and to encourage intersectoral links. The task force will have its inaugural meeting in December 1996.

### Research/information

#### Queensland Injury Surveillance System

Queensland Health is supporting the extension of the Injury Surveillance System to cover selected rural areas, and is also introducing trauma registries in teaching hospitals.