# Chapter 2: Overview of child deaths in Queensland 1991–2003

## Background

This chapter provides an overview of trends in Queensland child mortality for the 13 year period from 1 January 1991 to 31 December 2003.

A summary of all causes of deaths of children and young people aged from birth to 17 years is provided, followed by a detailed breakdown of the following external and undetermined causes of death:

- transport fatalities
- sudden infant death syndrome (SIDS) and undetermined deaths
- accidental deaths
- drownings
- suicides
- homicide, fatal assault and neglect, and
- fires.

The causes are discussed in detail, as they represent deaths that are reportable to the Office of State Coroner and are potentially preventable deaths of Queensland's children and young people.

## Data source

The Office of Economic and Statistical Research (OESR) provided the Commission with the underlying cause of death for all Queensland children and young people, aged from birth to 17 years, who died between 1 January 1991 and 31 December 2003. The OESR also provided demographic descriptors, including gender, age and place of residence. The Commission conducted quality assurance and secondary analysis on this data.

## Coding

The Commission uses the International Classification of Diseases and Related Health Problems (ICD) to code causes of death. The ICD was developed by the World Health Organisation (WHO) for international consistency in the collection, processing, classification and presentation of morbidity and mortality statistics. The analysis presented in this chapter is based solely on the cause of death as coded using ICD[38].

Between 1991 and 2003 changes were made to the cause of death coding classifications. In 1998 the WHO's international classification system for coding mortality data, the ICD, changed from version 9 (ICD-9) to 10 (ICD-10) (WHO, 1992). This included several modifications at the chapter, code and definition levels.

## Limitations

The analysis of the deaths of Queensland children and young people between 1991 and 2003 has been undertaken to allow the Commission to compare trends and patterns with contemporary data (for example, data from 2004-05). As with all data sets that rely on secondary[39] sources, there may be some omissions. Additionally, there may be a small number of errors (in one example, the cause of death for a 15-year-old was listed as sudden infant death syndrome). The validity and reliability of data presented in this section has not been formally verified and should be interpreted with some caution. Further limitations within this chapter include:

### Data

Codes of multiple causes of death were not collected before 1997 (ABS, 2003). The 13 year data analysis is therefore based only on underlying cause of death and the corresponding ICD codes. Further, some specific causes of death of interest to the Commission, such as low speed driveway run-overs, are not specified in the ICD coding. However, the contemporary analysis - in chapters 4 to 11 of this report - are based on a number of data sources and are able to identify these specifics when classifying deaths[40].

38 The analysis of child deaths in 2004-05 (chapters 4 to 11 of this report) is based on the analysis of a number of data sources, including death registration data, police reports of death to the coroner, coronial findings and ICD.

39 Death registry information was provided to OESR and then to the Commission.

40 Refer to chapter 3 Methodology for data sources.

Rates presented in this section are based on projected population figures. This means that rates calculated may not always total accurately[41]. Finally, rates have not been calculated where deaths number less than four, as rates calculated on numbers smaller than this can be unreliable (that is, they may show an artificial increase or decrease). This is consistent with the Australian Bureau of Statistics (ABS), the Australian Institute of Health and Welfare (AIHW) and the Australian National Injury Surveillance Unit (ANISU).

### International Classification for Diseases coding

Direct mapping from ICD-9 to ICD-10 at the code level is not possible. The Commission's Health Information Manager has manually mapped the codes from ICD-9 to ICD-10 based on the ICD descriptions. For example, the category of drownings was extracted based on ICD-9 code range (E910) and ICD-10 (W65-W74).

### Drowning data

A flag that identified drowning in cause of death data was introduced by the ABS[42] in 1992 and operated until 2002. The drowning flag also captured information about the place of drowning and activity (such as swimming or diving) at the time of drowing. This information is not available for the drownings that occurred in the years 1991 and 2003. Drowning in these years were allocated to the 'other and unspecified' category. Consequently, the drowning analysis in this chapter most likely depicts an under-representation of certain activities and places of drownings and an overrepresentation of the other and unspecified category.

### Sudden infant death syndrome data

Changes to coding rules significantly affected the classification of SIDS. In ICD-9 SIDS was an ill-defined condition. For instance, if SIDS and another cause of death, such as bronchopneumonia, were both recorded on the death certificate, the bronchopneumonia would be coded as the underlying cause of death. However, ICD-10 classifies SIDS as a defined condition that may be coded as the underlying cause of death even when other conditions are listed on the death certificate (Anderson et al., 2001:18). The SIDS analysis presented in this chapter should therefore be read with caution.

### Aboriginal and Torres Strait Islander status

The Queensland Registrar-General of Births, Deaths and Marriages has included an Indigenous identifier on death certificates since 1996, but it is often not completed. The ABS has estimated only 54% of death certificates of Indigenous people completed the identifier between 1999 and 2003 (ABS, 2003:70). Therefore, mortality rates for Indigenous people are likely to be significantly underestimated.

Further, the Indigenous identifier has changed over time. For example, in the year 2000 the categories were divided into Indigenous, Aboriginal, Torres Strait Islander, Aboriginal and Torres Strait Islander and not Indigenous/unstated. Between 2001 and 2003, the Indigenous category was removed.

Due to the lack of Indigenous identifier data, national statistics and experimental[43] estimates and projections of the Indigenous population from the ABS and the AIHW have been used to discuss Indigenous child mortality in this chapter.

### Suicide

Discussion of suicide trends between 1991 and 2003 probably underestimate the number of suicides for this period. This is partly due to uncertainties about intent and the circumstances surrounding the death of the deceased (De Leo & Evans, 2002:19).

41 Where this occurs, it will be noted in the relevant tables.

42 Drowning flags were an internal ABS document and were not published for public use.

43 These statistics are regarded as experimental in that the standard approach to population estimation is not possible because satisfactory data on births, deaths and internal migration are not generally available.

Generally, in order for a death to be labelled a suicide, there needs to be a high standard of proof and substantial evidence to support the self-inflicted classification. Where uncertainties arise, these deaths may be classified as accidental or undetermined deaths. This is particularly an issue when intent surrounding a death may be ambiguous, such as in drug overdoses, single-vehicle crashes and falls (De Leo & Evans, 2002:19).

It is generally agreed that reported childhood suicide rates are likely to be artificially low, due to misclassification and conservative coding of causes of death (Wise & Spengler, 1997:319). In Queensland, official suicide statistics are based on the findings of the coroner. In other jurisdictions, some coroners are reluctant to classify child deaths as suicide due to a widespread belief that children under certain ages are incapable of fully understanding the concept of death, its finality and irreversibility (NSW CDRT, 2003:2; Wise & Spengler, 1997:320). The ICD coding procedure implies that where intent is not clear, death should be classified as accidental. Consequently, the number of accidental deaths, particularly for children aged 10 to 17 years, are likely to be over-represented and the true number of Queensland childhood suicides reported in this chapter is likely to be underestimated[44].

## General child death trends, 1991–2003

This section provides a broad overview of all causes of child death over 13 years. Demographics for all causes of child death are discussed by year, followed by a detailed analysis of external and undetermined child mortality trends and patterns.

### Summary of all causes of child death

The deaths of 6781 children and young people aged from birth to 17 years were recorded from January 1991 to December 2003. Of these, 3977 (58.7%) were male and 2804 (41.3%) were female.

#### International Classification of Diseases (ICD)

Table 2.1 shows all causes of death for children and young people based on the ICD-10 chapter levels. The most common causes of death were:

- 26.4% conditions originating in the perinatal period
- 24.6% external causes
- 18.4% congenital malformations, and
- 8.7% symptoms and signs not elsewhere classified.

Conditions originating in the perinatal period account for the largest proportion of children and young people's deaths nationally (ABS, 1996:2).

Over the 13 years examined, the number of male deaths was greatest in the external causes category (1100 deaths) while female deaths were highest in the conditions originating in the perinatal period (776 deaths).

44 For a more detailed description of the limitations regarding the classification of suicide among children, and the likelihood of under representation, refer to chapter 7 Suicide of this report.

**Table 2.1** All causes of death for children aged 0 to 17 years from 1991–2003

| Broad ICD code descriptions | Males *n* | Females *n* | Total *n* | Total % |
|---|---|---|---|---|
| Certain conditions originating in the perinatal period | 1013 | 776 | 1789 | 26.4 |
| External causes of morbidity and mortality | 1100 | 569 | 1669 | 24.6 |
| Congenital malformations, deformations and chromosomal abnormalities | 698 | 552 | 1250 | 18.4 |
| Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified | 356 | 231 | 587 | 8.7 |
| Neoplasms | 255 | 201 | 456 | 6.7 |
| Diseases of the nervous system | 183 | 136 | 319 | 4.7 |
| Diseases of the respiratory system | 97 | 94 | 191 | 2.8 |
| Certain infectious and parasitic diseases | 83 | 61 | 144 | 2.1 |
| Disease of the circulatory system | 73 | 67 | 140 | 2.1 |
| Endocrine, nutritional and metabolic diseases | 64 | 74 | 138 | 2.0 |
| Diseases of the digestive system | 24 | 20 | 44 | 0.6 |
| Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism | 16 | 9 | 25 | 0.4 |
| Mental and behavioural disorders | 10 | 3 | 13 | 0.2 |
| Diseases of the musculoskeletal system and connective tissue | 2 | 3 | 5 | 0.1 |
| Diseases of the ear and mastoid process | 1 | 3 | 4 | 0.1 |
| Diseases of the skin and subcutaneous tissue | 0 | 2 | 2 | * |
| Diseases of the genitourinary system | 2 | 0 | 2 | * |
| Pregnancy, childbirth and the puerperium | 0 | 2 | 2 | * |
| Disease of the eye and adnexa | 0 | 1 | 1 | * |
| **Total** | **3977** | **2804** | **6781** | **99.9** |

*Data source: OESR, Qld (1991–2003)*

** = numbers are too small to calculate percentages to the first decimal place.*
*Notes: 1. Causes of death are sorted by frequency and are not in chapter order.*
*2. The total percentage column does not sum to 100% due to rounding and uncalculated percentage values.*

## Yearly breakdown of all causes of death

Table 2.2 shows the number and rate of all causes of child death for each year. The number of deaths per year has decreased from 568 in 1991 to 386 in 2003. Similarly, the average annual rate has declined from 68.9 deaths per 100,000 children in 1991 to 40.1 per 100,000 in 2003, peaking at 74.7 fatalities per 100,000 in 1992. This decline has been fairly stable across time.

On average, 59 children and young people per 100,000 died each year in Queensland, approximately 522 deaths a year.

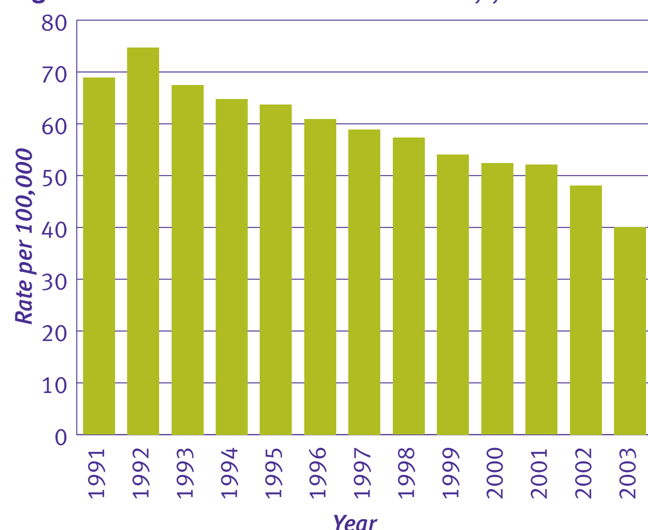
**Table 2.2** Number and rate of all child deaths by year

| Year of death | Child deaths *n* | Rate per 100,000 |
|---|---|---|
| 1991 | 568 | 68.9 |
| 1992 | 623 | 74.7 |
| 1993 | 572 | 67.5 |
| 1994 | 558 | 64.8 |
| 1995 | 558 | 63.7 |
| 1996 | 541 | 60.9 |
| 1997 | 528 | 58.9 |
| 1998 | 519 | 57.3 |
| 1999 | 495 | 54.1 |
| 2000 | 485 | 52.4 |
| 2001 | 490 | 52.1 |
| 2002 | 458 | 48.1 |
| 2003 | 386 | 40.1 |
| **Yearly Average** | **522** | **58.7** |

*Data source: OESR, Qld (1991–2003)*

Figure 2.1 shows the steady decrease in deaths of children and young people over the 13 years examined. The death rate has almost halved during this time.

**Figure 2.1** Rates of all children's deaths by year




*Data source: OESR, Qld (1991–2003)*

## Gender

Table 2.3 shows that on average, 67.1 per 100,000 male children died each year between 1991 and 2003 compared to 49.9 per 100,000 females. The average annual rate shows that approximately 17.2 per 100,000 more male children died than females each year.

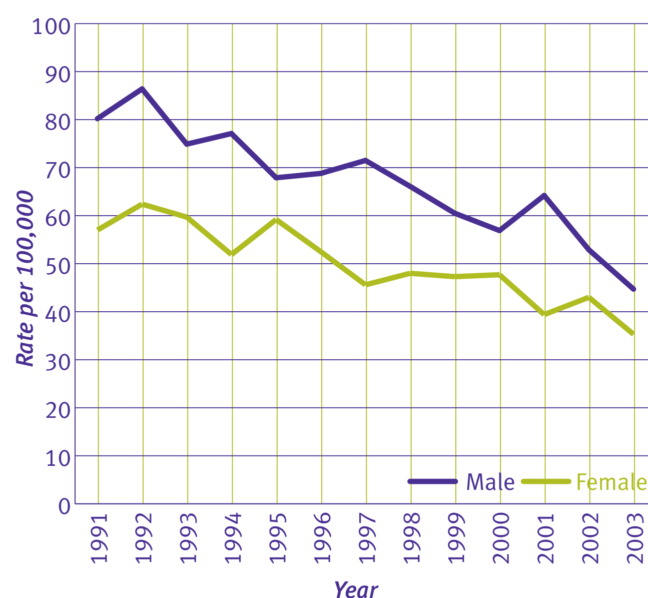
**Table 2.3** Number and rate of all child deaths by year and gender

| Year of death | Total *n* | | Average rate per 100,000 | |
|---|---|---|---|---|
| | Male | Female | Male | Female |
| 1991 | 340 | 228 | 80.2 | 57.0 |
| 1992 | 370 | 253 | 86.4 | 62.4 |
| 1993 | 326 | 246 | 74.9 | 59.7 |
| 1994 | 341 | 217 | 77.1 | 51.9 |
| 1995 | 306 | 252 | 67.9 | 59.2 |
| 1996 | 314 | 227 | 68.8 | 52.5 |
| 1997 | 329 | 199 | 71.5 | 45.6 |
| 1998 | 307 | 212 | 66.1 | 48.0 |
| 1999 | 284 | 211 | 60.5 | 47.3 |
| 2000 | 270 | 215 | 56.9 | 47.7 |
| 2001 | 310 | 180 | 64.2 | 39.4 |
| 2002 | 259 | 199 | 52.9 | 43.0 |
| 2003 | 221 | 165 | 44.7 | 35.3 |
| **Total** | **3977** | **2804** | **67.1** | **49.9** |

*Data source: OESR, Qld (1991–2003)*

Figure 2.2 shows that males have maintained a higher death rate in every year examined. This finding is consistent with the national rate for deaths of children and young people (Al-Yaman, Bryant & Sargeant, 2002:28).

**Figure 2.2** Rates of child deaths by gender




*Data source: OESR, Qld (1991–2003)*

## Age

Table 2.4 depicts the number of child deaths for all causes of mortality between 1991 and 2003 by age.

*Infants under 28 days*

In line with national infant fatality trends, more Queensland children under 28-days-old died than any other age group, with 2513 deaths over the 13 years examined (ABS, 1998).

*Infants under one year*

Infants between 28 days and one year of age had the second highest number of fatalities with 1337 deaths. The infant mortality rate for all children under one year[45] declined between 1991 and 2003. In 1991 the rate was 711.8 deaths per 100,000 infants, which fell to 447.4 per 100,000 in 2003, a 37.2% decrease.

45 This rate is for all children aged zero to one year as rates are unable to be calculated for children under 28 days.

*Toddlers one to four years*

Toddlers aged one to four years had the third highest number of fatalities, with 910 deaths, and the third highest average annual death rate of 36.2 per 100,000 toddlers. Deaths in this age group have almost halved with 44.7 deaths per 100,000 children recorded in 1991 compared to 22.6 in 2003, a 49.4% decrease.

*Children five to nine years*

Five to nine-year-olds had the lowest number of deaths, with 509 fatalities recorded, and had the lowest average annual rate (15.8 per 100,000 children). The mortality rate for children aged five to nine years has also declined from 18.3 in 1991 to 10.4 in 2003, a 43.2% decrease.

*Young people 10 to 14 years*

The number and rate of deaths was second lowest among children in the 10 to 14 year age category, averaging 606 deaths, or 18.7 deaths per 100,000 children.

*Young people 15 to 17 years*

Young people aged 15 to 17 years made up 904 of the deaths over the 13 years examined and had the second highest death rate compared to all other age categories, averaging 46.4 deaths per 100,000 young people per year[46]. Fifteen to 17-year-olds experienced a 43.7% decrease in fatalities over this period, with 55.9 deaths per 100,000 young people recorded in 1991, contrasting with 31.5 per 100,000 in 2003.

**Table 2.4** Numbers and rates for all causes of child deaths by age

| Year of death | Total *n* | | | | | | | | Rate per 100,000 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Under 28 days | 28 days–1 year | 1–4 years | 5–9 years | 10–14 years | 15–17 years | Total | | Under 1 year | 1–4 years | 5–9 years | 10–14 years | 15–17 years | Total |
| 1991 | 196 | 130 | 79 | 42 | 40 | 81 | 568 | | 711.8 | 44.7 | 18.3 | 17.7 | 55.9 | 68.9 |
| 1992 | 231 | 137 | 84 | 47 | 55 | 69 | 623 | | 798.1 | 46.3 | 20.2 | 23.8 | 48.3 | 74.7 |
| 1993 | 229 | 109 | 78 | 33 | 48 | 74 | 571 | | 721.0 | 41.7 | 14.1 | 20.2 | 52.2 | 67.4 |
| 1994 | 174 | 123 | 83 | 44 | 63 | 70 | 557 | | 624.8 | 43.3 | 18.6 | 25.9 | 49.2 | 64.7 |
| 1995 | 196 | 90 | 91 | 59 | 47 | 75 | 558 | | 593.1 | 46.7 | 24.5 | 18.9 | 52.1 | 63.7 |
| 1996 | 202 | 93 | 77 | 34 | 59 | 76 | 541 | | 610.0 | 39.1 | 13.9 | 23.4 | 51.9 | 60.1 |
| 1997 | 199 | 105 | 66 | 38 | 45 | 75 | 528 | | 634.9 | 33.3 | 15.2 | 17.8 | 50.3 | 58.9 |
| 1998 | 208 | 87 | 73 | 46 | 38 | 67 | 519 | | 620.8 | 36.8 | 18.1 | 15.1 | 43.8 | 57.3 |
| 1999 | 171 | 109 | 66 | 29 | 48 | 72 | 495 | | 585.8 | 33.3 | 11.2 | 18.9 | 46.3 | 54.1 |
| 2000 | 186 | 103 | 49 | 42 | 40 | 65 | 485 | | 597.6 | 24.7 | 16.0 | 15.5 | 41.4 | 52.4 |
| 2001 | 200 | 85 | 62 | 35 | 43 | 65 | 490 | | 571.0 | 30.9 | 13.1 | 16.3 | 41.0 | 52.1 |
| 2002 | 181 | 91 | 56 | 32 | 34 | 64 | 458 | | 562.7 | 27.6 | 11.9 | 12.5 | 39.8 | 48.1 |
| 2003 | 140 | 75 | 46 | 28 | 46 | 51 | 386 | | 447.4 | 22.6 | 10.4 | 16.5 | 31.5 | 39.9 |
| **Total** | **2513** | **1337** | **910** | **509** | **606** | **904** | **6779[a]** | **Ave.** | **621.5** | **36.2** | **15.8** | **18.7** | **46.4** | **58.7** |

*Data source: OESR, Qld (1991–2003)*

*[a] = Two deaths have been excluded from this table as their ages were not stated in the data received.*

*Notes: 1. Rates were not able to be calculated for the under 28 days age category as population statistics are not gathered for this group. Rates for the under one year category include deaths from the under 28 days category.*

*2. Rates for each age category are calculated on the population for each age category in the relevant year.*

*3. The total rates column represents the rate of death per 100,000 children and young people each year based on the entire population of children and young people aged from birth to 17 years for that year.*

46 The differences between the numbers of deaths and the rates for each age category are attributed to different population proportions between children's age categories. For example, the population data shows that there are approximately three times as many children aged 15 to 17 years in the population compared to the five to nine year category. Refer to Appendix One for the projected population rates for each age category.

## External and undetermined child death trends

This section examines causes of death for all external or undetermined fatalities of children in Queensland from 1991 to 2003. In total, 2254 children and young people died as a result of external and undetermined causes of death over this period.

Table 2.5 shows that transport fatalities were the leading cause of death for children under 18 years, with 764 deaths. SIDS was the second most common cause with 500 deaths. Accidents, drowning and suicides accounted for 283, 241 and 194 of children's deaths respectively. While 112 children died from homicide, fatal assault and neglect. Less frequent causes of mortality included undetermined fatalities (85 deaths), fires (51 deaths) and those of undetermined intent[47] (24 deaths).

### Gender

The top four causes of external fatalities are the same for males and females. However, the number of male fatalities was higher than female fatalities in each category. Compared to female deaths, male deaths were around twice as high in the transport, accidental and drowning categories, and one and a half times higher for SIDS. Suicide had the largest gender difference, with male suicide two and a half times higher than female suicide. Females were more likely to die from homicide, fatal assault and neglect. However, this difference was marginal with only two more females dying than males over the 13 years examined.

47 Undetermined intent is classified when available information is insufficient to enable a medical or legal authority to make a distinction between self-harm, accident and assault (e.g. falling, jumping or pushed from a high place, undetermined intent) (WHO, 1992:1095).

**Table 2.5** Number of external and undetermined causes of death by gender

| Specific child death trends | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| Transport | 508 | 256 | 764 |
| SIDS | 301 | 199 | 500 |
| Accidental and other causes | 191 | 92 | 283 |
| Drowning | 161 | 80 | 241 |
| Suicide | 139 | 55 | 194 |
| Homicide, fatal assault and neglect | 55 | 57 | 112 |
| Unexplained/undetermined | 54 | 31 | 85 |
| Fire | 31 | 20 | 51 |
| Undetermined intent | 15 | 9 | 24 |
| **Total** | **1455** | **799** | **2254[a]** |

*Data source: OESR, Qld (1991–2003)*

*[a] = Two deaths are included in the (ICD coding) chapter for 'symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified' but do not fit the scope for 'unexpected deaths' so have been excluded from this analysis.*

### Age

SIDS was the most common cause of external or undetermined deaths for children under one year. Drowning was the most common cause of death for one to four-year-olds, while children and young people aged between five and 17 years were most likely to die in transport incidents.

**Table 2.6** Number of external and undetermined causes of death by age

| Specific child death trends | Under 1 year | 1–4 years | 5–9 years | 10–14 years | 15–17 years | Total persons |
|---|---|---|---|---|---|---|
| Transport | 12 | 135 | 111 | 166 | 340 | 764 |
| SIDS | 486 | 13 | 0 | 0 | 1 | 500 |
| Accidental | 49 | 74 | 35 | 46 | 79 | 283 |
| Drowning | 25 | 160 | 27 | 14 | 15 | 241 |
| Suicide | 0 | 0 | 0 | 31 | 163 | 194 |
| Homicide, fatal assault and neglect | 28 | 28 | 22 | 15 | 19 | 112 |
| Undetermined | 54 | 15 | 5 | 6 | 5 | 85 |
| Fire | 1 | 31 | 7 | 6 | 6 | 51 |
| Undetermined intent | 3 | 3 | 1 | 1 | 16 | 24 |
| **Total** | **658** | **459** | **208** | **285** | **644** | **2254[a]** |

*Data source: OESR, Qld (1991–2003)*

*[a] = Two deaths are included in the (ICD coding) chapter for 'symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified' but do not fit the scope for 'unexpected deaths' so have been excluded from this analysis.*

*Note: 1. All numbers included in this table are representative of the n value.*

*Infants under one year*

The causes of external and undetermined death among infants under one year of age, ordered by frequency, were as follows for the 13 years examined:

- SIDS 73.9% (486 deaths)
- undetermined 8.2% (54 deaths)
- accidental 7.4% (49 deaths)
- homicide, fatal assault and neglect 4.3% (28 deaths)
- drownings 3.8% (25 deaths)
- transport 1.8% (12 deaths)

Infants were most likely to die from unknown causes with 82.1% dying from SIDS or unexplained causes.

*Toddlers one to four years*

Deaths from external and undetermined causes among one to four year olds, in order of frequency, were:

- drowning 34.9% (160 deaths)
- transport 29.4% (135 deaths)
- accidental 16.1% (74 deaths)
- fire 6.8% (31 deaths)
- homicide, fatal assault and neglect 6.1% (28 deaths)
- undetermined 3.3% (15 deaths)
- SIDS[48] 2.8% (13 deaths)

*Children five to nine years*

The following were the external and undetermined causes of deaths of children aged five to nine years between 1991 and 2003:

- transport 53.4% (111 deaths)
- accidental 16.8% (35 deaths)
- drowning 13.0% (27 deaths)
- homicide, fatal assault and neglect 10.6% (22 deaths)
- fire 3.4% (7 deaths)
- undetermined 2.4% (5 deaths)

*Young people 10 to 14 years*

External and undetermined deaths for young people aged 10 to 14 years were:

- transport 58.2% (166 deaths)
- accidental 16.1% (46 deaths)
- suicide 10.9% (31 deaths)
- homicide, fatal assault and neglect 5.3% (15 deaths)
- drowning 4.9% (14 deaths)
- undetermined 2.1% (6 deaths)
- fire 2.1% (6 deaths)

*Young people aged 15 to 17 years*

External and undetermined causes of death among young people aged 15 to 17 years were:

- transport 52.8% (340 deaths)
- suicide 25.3% (163 deaths)
- accidental 12.2% (79 deaths)
- homicide, fatal assault and neglect 3.0% (19 deaths)
- undetermined intent 2.5% (16 deaths)
- drowning 2.3% (15 deaths)
- fire 0.9% (6 deaths)
- undetermined 0.8% (5 deaths)

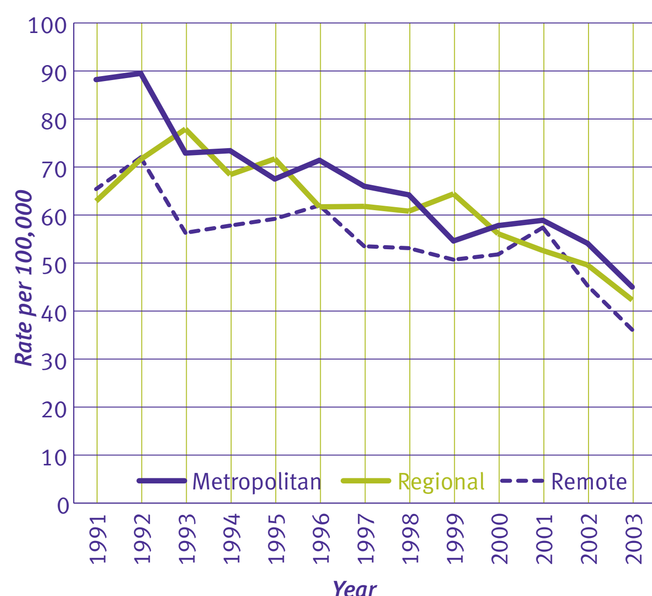
## Geographical distribution (ARIA)[49]

Figure 2.3 presents child mortality rates between 1991 and 2003 in metropolitan, regional and remote areas. The average annual rate of child fatalities was highest in metropolitan areas, with 66.4 deaths per 100,000 children, compared to 61.7 deaths per 100,000 children in regional areas and 55.4 deaths per 100,000 children in remote areas. This is inconsistent with other state and national data which has found that rates of child death in remote areas are generally higher than in metropolitan regions (Al-Yaman, Bryant & Sargeant, 2002:33; NSW CDRT, 2003:64). The fatality rates for each area decreased over time. The largest decline occurred in metropolitan areas.

48 Whilst SIDS deaths have been included in this category, as this is how the cause of death was recorded in the data, the SIDS definition only includes children under 1 year of age. For further information relating to definitional changes in this category of mortality, refer to chapter 11 Sudden unexpected deaths in infancy.

49 Based on Accessibility/Remoteness Index of Australia (ARIA). Refer to chapter 3 Methodology for a detailed description of ARIA and how it is calculated.

**Figure 2.3** All causes of child death by metropolitan, regional and remote areas of Queensland, 1991–2003




*Data source: OESR, Qld (1991–2003)*

## Death trends for Indigenous children

An Indigenous identifier has only been included on death certificates since 1996 so it has not been possible to analyse death trends for Indigenous children during the 13 year period examined.

Between 1996 and 2003, 3902 children and young people died. The data provided to the Commission identifies only 281 of these children as Indigenous[50]. This figure represents a significant under-reporting of Indigenous child mortality. Due to this limitation, key statistics on Indigenous mortality from other sources have been included in this section.

## Key statistics on Indigenous childhood mortality

Both Queensland and national statistics consistently report that the Indigenous child mortality rate is two to three times that of the non-Indigenous population (Al-Yaman, Bryant & Sargeant, 2002:31; ABS, 1997; ABS, 2004).

### Queensland

- The infant mortality rate in Queensland decreased from 5.4 deaths per 1000 live births in 1998 to 5.0 deaths per 1000 in 2003. Over the same five year period, the Indigenous infant mortality rate also decreased from 11.7 to 11.2 deaths per 1000 live births, but remains at more than twice that of the general population (ABS, 1997; ABS, 2004).
- Between 1999 and 2003, 114 Indigenous children and young people aged from birth to 17 years died in Queensland, a mortality rate of 46 per 100,000 children (based on Census 2001). This is more than twice the mortality rate of the general population, of 22 deaths per 100,000 children (ABS, 2004).
- Queensland Health (2004) estimates that Indigenous infants in Queensland have a perinatal mortality rate more than twice as high as other Queensland infants. In 1998 to 2000, the Indigenous perinatal mortality rate in Queensland was 20.1 per 1000 live births compared to 9.6 non-Indigenous perinatal deaths per 1000 live births.

### National

- Between 1998 and 2000 the average national rate of death for Aboriginal and Torres Strait Islander children was two and a half times higher than for other Australian children aged one to 14 years (Al-Yaman, Bryant & Sargeant, 2002:31).
- Between 1998 and 2000 Indigenous boys died at a rate of 48.1 per 100,000 compared to 19.5 deaths per 100,000 non-Indigenous boys aged one to 14 years (Al-Yaman, Bryant & Sargeant, 2002:31). Indigenous girls died at a rate of 39.9 per 100,000, while the rate for non-Indigenous girls was 15.1 per 100,000.

50 Refer to the limitations section at the beginning of this chapter for a detailed discussion of the restrictions within this data.

- From 1991 to 2000, the death rate for Indigenous infants aged under one year was approximately three times higher than for other Australian infants[51](AIHW, 1999; Al-Yaman, Bryant & Sargeant, 2002:25).
- The estimated mortality rate from diseases of the respiratory system for Indigenous infants (233 deaths per 100,000 live births) was more than 23 times higher than for non-Indigenous infants (10 deaths per 100,000 live births) (ABS, 1998).
- The estimated child death rate for Indigenous toddlers between 1994 and 1996 (131 deaths per 100,000 children) was 4.5 times higher than for non-Indigenous children (29 deaths per 100,000 children). Between 1998 and 2000, Indigenous children aged one to four years had a death rate 2.1 times that of other Australian children the same age (Al-Yaman, Bryant & Sargeant, 2002:31).
- Between 1998 and 2000 Indigenous children aged five to nine years had a death rate 3.2 times higher than that of non-Indigenous children the same age (Al-Yaman, Bryant & Sargeant, 2002:31).
- Indigenous children aged 10 to 14 years had a death rate 2.8 times higher than that of other Australian children from 1998 to 2000 (Al-Yaman, Bryant & Sargeant, 2002:31).
- The fatality rates for teenage Indigenous males are 2.4 times higher than for non-Indigenous teenagers, and the rate is 2.8 times higher for teenage Indigenous females. The major causes of teenage death were suicides, transport related incidents, assaults and poisoning (Queensland Government, 2005).

## Summary

The following key findings for all causes of child death in Queensland between 1 January 1991 and 31 December 2003 were identified:

- during this period 6781 children and young people died, 58.7% of them male
- there has been a steady decrease in the total number of child deaths
- conditions originating in the perinatal period were the most common cause of death, followed by external causes
- on average, 58.7 children and young people per 100,000 died in Queensland each year, approximately 552 deaths a year
- the greatest number of deaths occurred in infants aged under 28 days. Children under one had the greatest rate of death compared to all other age categories
- the most common type of external and undetermined causes of death for all children under 18 were transport accidents, followed by SIDS
- males had higher numbers of fatalities for every category of external and undetermined causes of death except homicide, fatal assault and neglect
- infants under one year were most likely to die from SIDS, toddlers one to four years died most commonly from drownings and children aged five to 17 years most frequently died in transport accidents
- the rate of child mortality in metropolitan areas was higher than those in regional and remote areas, and
- on average, Indigenous children were two and a half to three times more likely to die from all causes of death compared to non-Indigenous children.

51 The rate from 1991-1996 is based on information from South Australia, Western Australia and the Northern Territory.

## Transport accident fatality trends, 1991–2003

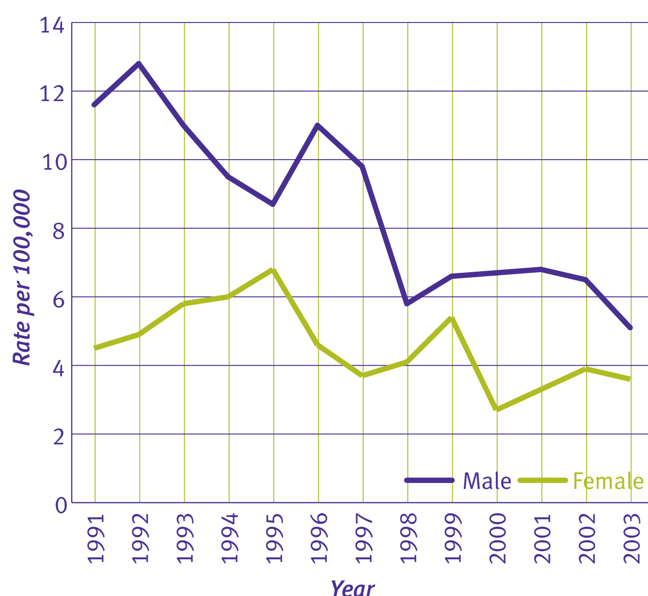
Between January 1991 and December 2003, 754 children and young people aged from birth to 17 years died in Queensland as a result of transport related incidents.

### Gender

Consistent with national findings, more males died in transport accidents compared to females (AIHW, 1999). Figure 2.4 illustrates a decrease in transport fatalities over the 13 year period, with notable fluctuations in certain years. For males, a significant decrease in transport deaths occurred between 1992 and 1995, followed by a sharp increase in 1996 and then another steep decrease from 1996 to 1998. Rates for males between 1998 and 2002 remained relatively steady with a slight decrease in 2003. Conversely, female transport fatalities increased steadily between 1991 and 1995, before decreasing in 1996 and 1997. Female rates increased again in 1999 followed by another sharp decrease in 2000 and have increased steadily since this time.

Figure 2.4 shows that the decline in transport related fatalities over this period is far more prominent for males than females.

**Figure 2.4:** Rate of transport related fatalities by gender




*Data source: OESR, Qld (1991–2003)*

### Age

Table 2.7 depicts the age breakdown for the number of transport deaths among children and young people for each year over the 13 year period examined. In order of frequency, the number of deaths occurring in each age group is:

- 15 to 17 years 340 deaths
- 10 to 14 years 166 deaths
- 1 to 4 years 135 deaths
- 5 to 9 years 111 deaths
- under 1 year 12 deaths

Transport related fatalities for 15 to 17-year-olds were more than double the transport deaths of any other age category.

**Table 2.7:** Number of transport fatalities by age and year

| Year of Death | Under 1 year | 1–4 years | 5–9 years | 10–14 years | 15–17 years | Total |
|---|---|---|---|---|---|---|
| 1991 | 1 | 10 | 13 | 12 | 31 | 67 |
| 1992 | 2 | 14 | 17 | 20 | 22 | 75 |
| 1993 | 0 | 11 | 11 | 14 | 36 | 72 |
| 1994 | 3 | 13 | 9 | 14 | 28 | 67 |
| 1995 | 0 | 15 | 13 | 16 | 24 | 68 |
| 1996 | 2 | 12 | 7 | 18 | 31 | 70 |
| 1997 | 0 | 14 | 3 | 13 | 31 | 61 |
| 1998 | 1 | 9 | 10 | 7 | 18 | 45 |
| 1999 | 1 | 11 | 2 | 11 | 30 | 55 |
| 2000 | 1 | 6 | 7 | 10 | 20 | 44 |
| 2001 | 0 | 7 | 7 | 8 | 26 | 48 |
| 2002 | 0 | 7 | 7 | 10 | 26 | 50 |
| 2003 | 1 | 6 | 5 | 13 | 17 | 42 |
| **Total** | **12** | **135** | **111** | **166** | **340** | **764** |

*Data source: OESR, Qld (1991–2003)*

*Note: 1. All numbers included in the table are representative of the n value.*

Average annual transport fatality rates, broken down by age, and in order of frequency, were:

- 15 to 17 years — 17.5 deaths per 100,000
- 1 to 4 years — 5.4 deaths per 100,000
- 10 to 14 years — 5.1 deaths per 100,000
- 5 to 9 years — 3.5 deaths per 100,000
- under 1 year — 1.9 deaths per 100,000

### Infants under one year

Infants under one year were least likely to die in traffic related fatalities, with an average 1.9 deaths per 100,000 infants each year between 1991 and 2003. Transport fatality rates for infants under one decreased over the 13 years examined. No infants died in transport fatalities in 1993, 1995, 1997, 2001 or 2002.

### Toddlers one to four years

Figure 2.5 shows that the rate of transport deaths among toddlers declined only slightly over this period. Since 2000, the rate of toddlers dying in transport accidents has plateaued.

### Children five to nine years

Five to nine year olds had the second lowest annual transport mortality rate for the 13 years examined.

### Young people 10 to 14 years

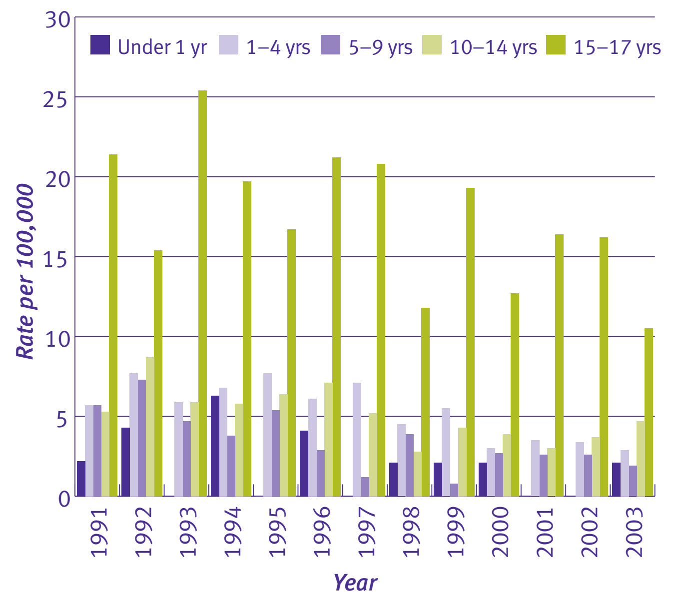
Figure 2.5 depicts an increase in transport deaths for young people aged 10 to 14 years in 1992 and a significant fall in 1998. Overall, rates for 10 to 14 year olds only varied slightly from year to year.

### Young people 15 to 17 years

Transport related deaths for 15 to 17 year olds declined significantly between 1991 and 2003. However, this rate has fluctuated from year to year.

Overall, Figure 2.5 shows a decrease in the transport fatality rates across all age groups from 1991 to 2003.

**Figure 2.5:** Rate of transport related fatalities by age




*Data source: OESR, Qld (1991–2003)*

## Nature of transport fatality

Table 2.8 breaks down the number of transport deaths by nature of fatality, age and gender between 1991 and 2003.

### Gender

Males died more frequently than females in every category examined. Overall, 512 males died in transport accidents, more than double the 257 female deaths.

### Motor vehicles

The greatest number of children's transport fatalities occurred in motor vehicles, with 407 deaths recorded for children aged from birth to 17 years. Of those, the vast majority (337 deaths) were passengers compared to 70 driver deaths. Both passengers and drivers who died in traffic accidents were more likely to be aged 15 to 17 years than in any other age group (43.6%, 147 passenger deaths and 97.1%, 68 driver deaths). The number of 15 to 17-year-olds killed in motor vehicle accidents was three times higher than in any other age category.

## Pedestrians

Of the 173 pedestrian fatalities, the greatest proportion occurred in children aged one to four years (70 deaths). Male children and young people were almost twice as likely as females to die in pedestrian fatalities (112 males, 61 females). Based on national statistics, it is estimated that about half of the pedestrian fatalities among toddlers may be attributed to low-speed driveway run-overs[52] (Hockey et al., 2003)[53].

## Other[54]

The third most common transport fatalities occurred in the 'other' category. Young people in the 10 to 14 and 15 to 17 year age groups were most frequently killed in these transport accidents (45 and 40 deaths respectively). In this period, the 79 male deaths from 'other' transport accidents more than doubled the 34 female deaths.

## Motorcycles

Motorcycle accidents were responsible for the death of 47 children and young people between 1991 and 2003. The vast majority of these deaths were 15 to 17-year-olds and were all males (30 deaths). Just over a quarter of all children and young people who died in motorcycle accidents were aged 10 to 14 years (12 deaths). Only one of these was female. Males accounted for almost all motorcycle fatalities with only three females dying in motorcycle accidents over the period examined.

## Bicycles

Twelve children in the 10 to 14 year age category died in bicycle accidents, accounting for half of all bicycle deaths of children and young people. Fifteen to 17 years was the age category with the second highest rate of bicycle fatalities (nine deaths) followed by children aged five to nine years (three deaths). Males were more likely to die in bicycle accidents, with 21 male deaths compared to only three female deaths in the 13 years examined.

**Table 2.8:** Number of transport deaths by nature of fatality, age and gender, 1991–2003.

| Type of death | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| Motor Vehicles – Drivers/Passengers | | | |
| Under 1 year | 5 | 4 | 9 |
| 1 – 4 years | 26 | 28 | 54 |
| 5 – 9 years | 35 | 17 | 52 |
| 10 – 14 years | 41 | 36 | 77 |
| 15 – 17 years | 145 | 70 | 215 |
| **Subtotal** | **256** | **156** | **407** |
| Pedestrian | | | |
| Under 1 year | 2 | 0 | 2 |
| 1 – 4 years | 45 | 25 | 70 |
| 5 – 9 years | 16 | 19 | 35 |
| 10 – 14 years | 18 | 7 | 25 |
| 15 – 17 years | 31 | 10 | 41 |
| **Subtotal** | **112** | **61** | **173** |
| Other Transport Accidents[a] | | | |
| Under 1 year | 0 | 1 | 1 |
| 1 – 4 years | 9 | 0 | 9 |
| 5 – 9 years | 11 | 7 | 18 |
| 10 – 14 years | 29 | 11 | 40 |
| 15 – 17 years | 30 | 15 | 45 |
| **Subtotal** | **79** | **34** | **113** |
| Motorcycle | | | |
| Under 1 year | 0 | 0 | 0 |
| 1 – 4 years | 1 | 1 | 2 |
| 5 – 9 years | 2 | 1 | 3 |
| 10 – 14 years | 11 | 1 | 12 |
| 15 – 17 years | 30 | 0 | 30 |
| **Subtotal** | **44** | **3** | **47** |
| Bicycle | | | |
| Under 1 year | 0 | 0 | 0 |
| 1 – 4 years | 0 | 0 | 0 |
| 5 – 9 years | 3 | 0 | 3 |
| 10 – 14 years | 11 | 1 | 12 |
| 15 – 17 years | 7 | 2 | 9 |
| **Subtotal** | **21** | **3** | **24** |
| **Total** | **512** | **257** | **764** |

*Data source: OESR, Qld (1991–2003)*

*[a] = The 'other' category includes all rail, watercraft, aircraft and all terrain vehicle accidents.*

52 The underlying cause of death data does not identify specific location of incident. As a result, we are unable to determine the number of low-speed run-overs which occurred over this period.

53 Refer to chapter 5 Transport for a detailed discussion relating to low-speed driveway run-overs.

54 The 'other' category includes all rail, watercraft, aircraft and all terrain vehicle accidents.

## Geographical distribution (ARIA)

Between 1991 and 2003 the average annual rate of child deaths in transport accidents was highest in regional areas, with 8.1 deaths per 100,000 children. Children in remote areas also experienced a high rate of transport fatalities, with 7.0 deaths per 100,000, and metropolitan regions experienced the lowest mortality rates with 6.3 deaths per 100,000 children.

## Summary

The following key findings regarding transport related deaths of children and young people, between 1 January 1991 and 31 December 2003, were identified:

- traffic accidents caused the death of 764 children and young people
- the rate of transport related fatalities has decreased considerably over time; this decrease has been more prominent for males than females
- more than double the number of 15 to 17-year-olds died in transport accidents than in any other age category
- fifteen to 17-year-olds had the highest average annual rate of transport related deaths, followed by one to four-year-olds
- males were almost twice as likely to die in transport accidents than females
- children and young people were more likely to die as passengers than drivers in motor vehicles
- the number of 15 to 17-year-olds who died in motor vehicle accidents almost tripled all other age categories
- one to four-year-olds were more likely to die in pedestrian accidents than children in other age groups
- males died in 94.0% of motorcycle and 87.5% of bicycle fatalities
- ten to 14-year-olds accounted for half of all bicycle deaths
- infants under one year were less likely to die in transport accidents than children in any other age group, and
- children and young people living in regional areas of Queensland experienced the highest rate of transport related fatalities.

# Sudden unexpected death trends, 1991–2003

Unexpected deaths of children and young people accounted for 585 deaths over the 13 years examined. Infants aged one year and under accounted for 96.1% (562) of these deaths[55].

## Sudden infant death syndrome trends

Five hundred children died from SIDS between 1991 and 2003. As mentioned previously, SIDS was the single most common cause of death amongst infants under one year of age. SIDS was also the second most common cause of death of all external and unexpected causes (refer to Table 2.6).

SIDS has declined markedly across the 13 year period examined. The rate of deaths from SIDS has decreased from 1.2 deaths per 1000 live births in 1991 to 0.2 deaths per 1000 live births in 2003.

### Gender

The majority of SIDS deaths occurred in males, with 301 male SIDS deaths (60.2%) compared to 199 females deaths (39.8%). This is not surprising since studies have consistently identified males to be at a statistically increased risk of SIDS[56] (Byard, 2004:497).

## Undetermined or unascertained death trends

Between 1991 and 2003 the deaths of 85 children and young people were classified as being of ‘undetermined’ or ‘unascertained’ cause[57].

55 For Section 2.3 only, the term ‘infant’ refers to children aged one year and under. This is because throughout the 13 year period SIDS had been listed as the underlying cause of death for 14 child deaths one year of age or older. Since the publication of the 1989 definition of SIDS in 1991 (see chapter 11 Sudden unexpected deaths in infancy) the syndrome has been defined as applying only to infants under the age of one year.

56 See chapter 11 Sudden unexpected deaths in infancy for a more detailed discussion of known risk factors of SIDS.

57 Ill-defined and unknown causes of mortality, ICD-10 codes R96 to R99.

Undetermined causes represented the seventh most common category of death of children and young people (within the external and unexpected causes of mortality examined; refer to Table 2.6).

### Gender

Children and young people who died as a result of undetermined causes were mostly males, with 54 deaths (63.5%) compared to females with 31 deaths (36.5%).

### Age

Most deaths from undetermined causes occurred among children aged under one year (54 deaths, 65.5%). The average annual rate of undetermined infant deaths was 0.08 per 1000 live births. Fifteen toddlers, aged between one and four years, were classified as having died of undetermined causes. Other age categories had an almost equal number of deaths from undetermined causes, with deaths of five children aged between five and nine years and five young people aged 15 to 17 years. In the 10 to 14 year age category, six young people died from undetermined causes in the 13 year period examined.

## Geographical distribution (ARIA)[58]

The rate of infants who died from SIDS is similar across all regions, with an annual average of 5.0, 4.7 and 4.5 deaths per 100,000 children in regional, metropolitan and remote areas respectively[59]. The rate of SIDS deaths in remote areas peaked significantly in 1997, 1999 and 2001 with deaths in metropolitan and regional areas decreasing over time.

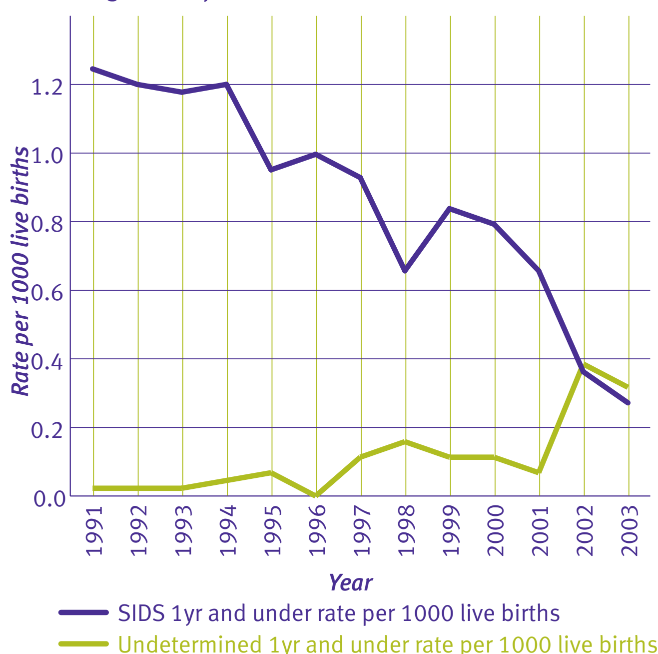
## Sudden infant death syndrome and undetermined infant deaths

Figure 2.6 compares the rate of SIDS with deaths from undetermined or ill-defined causes for infants aged one year and under, for the period between January 1991 and December 2003.

This figure shows a steep, consistent decline in the rate of SIDS deaths over the 13 years examined. Conversely, the number of undetermined infant deaths has increased predominantly from 1996 onwards, with a sharp increase occurring in 2002. The rate of SIDS is considerably higher than undetermined deaths for all years before 2002. Since 2002 the number of undetermined infant deaths has exceeded the number of deaths from SIDS.

Overall, the rate of deaths from SIDS and other ill-defined causes has decreased from 1.3 per 1000 live births in 1991 to 0.5 deaths per 1000 live births in 2003.

**Figure 2.6:** Rate of SIDS and undetermined deaths for infants aged one year and under.




*Data source: OESR, Qld (1991–2003)*

58 Numbers are too small to look at the geographical distribution of 'undetermined' deaths.

59 Rates per 1000 live births were not available for geographical distribution.

## Explaining the decrease in sudden infant death syndrome[60]

The general decline in SIDS throughout the western world has been attributed to a number of different factors, including, but not limited to:

- improved access to prenatal and paediatric preventative health care
- increased public awareness of SIDS risk factors through the 'Back to Sleep' (United States) and 'Reducing the Risk of SIDS' (Australia) campaigns
- increase in the proportion of full paediatric autopsies routinely performed, leading to the identification of non-SIDS cases previously missed
- the 1960s definitions of SIDS, applied until the early 1990s, did not impose specific age limits and relied solely on known clinical history and autopsy findings
- the 1989 definition, which was adopted in 1991, limited the age to under one and added the requirement of a thorough death scene examination
- a detailed death scene examination was not introduced by the Queensland Police Service until December 2003, and
- 'diagnostic transfer' whereby some deaths that would have been previously classified as SIDS have been increasingly certified as undetermined or unascertained due to the changes in the definition of SIDS.

In 2002 Queensland Health issued a 'Circular from the Chief Health Officer' to staff reiterating the 1989 definition of SIDS and emphasising the importance of conducting a death scene examination in all cases of sudden unexpected death in infancy. The sharpest increase in the number of undetermined deaths occurred in 2002 and undetermined deaths have exceeded the number of SIDS deaths since then.

In line with the changed definition of SIDS, analysis of the 13 year period examined shows that:

- since 1996 only infants under the age of one year have been certified as dying from SIDS
- the number of infant deaths attributed to SIDS has decreased most predominantly since the early to mid 1990s, and
- the number of undetermined infant deaths increased most predominantly from 1996 onwards.

## Summary

The following key findings regarding unexpected deaths of children and young people between January 1991 and December 2003 were identified:

- five hundred children died from SIDS and 85 children died from undetermined causes
- the SIDS rate has decreased, there are a number of possible explanations
- the rate of undetermined deaths exceeded the rate of SIDS deaths in 2002 and 2003
- SIDS was the single most common cause of death among infants
- the vast majority of undetermined deaths of children and young people occurred among infants
- the number of undetermined deaths was almost equal for each of the other age categories
- males are more likely to die from both SIDS and unexplained deaths compared to females, and
- the average annual rate of SIDS deaths was similar across all regions within Queensland.

60 For a detailed analysis of SIDS, see chapter 11 Sudden unexpected deaths in infancy.

## Accidental and other[61] death trends, 1991–2003

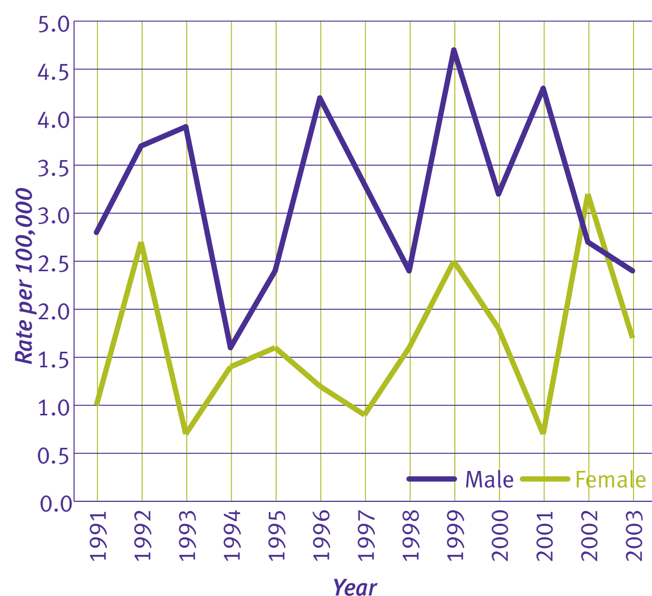
Between January 1991 and December 2003, 283 children and young people died as a result of accidental causes in Queensland[62]. On average, slightly more than two accidental deaths occurred per 100,000 children and young people each year.

### Gender

Figure 2.7 illustrates that the rate of accidental and other deaths has been considerably variable from year to year for both males and females. Male accidental fatality rates were higher than female rates for every year except 2002.

Figure 2.7 does not show any consistent decrease in the rates of either male or female accidental deaths during the 13 years examined.

**Figure 2.7:** Rate of accidental and other deaths by gender




*Data source: OESR, Qld (1991–2003)*

Male children were more than twice as likely to die from an accident as female children, with 191 accidental male deaths (67.5%) compared to 92 female deaths (32.5%).

Table 2.9 shows the number of different types of accidental deaths by gender for the period 1991 to 2003. The most common category of accidental deaths was 'other' with 136 deaths (48.0%). One quarter of fatal accidents were asphyxia related (71 deaths), including accidental suffocations and strangulations. Poisoning was the next most frequent type of accidental death (33 deaths, 11.7%) followed by falls (28 deaths, 9.9%). Accidental electrocutions accounted for the least number of accidental deaths (15 deaths, 5.3%).

**Table 2.9:** Number of specific accidental related deaths by gender

| Type of death | Male *n* | Female *n* | Total *n* | Total % |
|---|---|---|---|---|
| Other[63] | 88 | 48 | 136 | 48.0 |
| Asphyxia Related | 50 | 21 | 71 | 25.1 |
| Poisonings | 20 | 13 | 33 | 11.7 |
| Falls | 21 | 7 | 28 | 9.9 |
| Electrocutions | 12 | 3 | 15 | 5.3 |
| **Total** | **191** | **92** | **283** | **100** |

*Data source: OESR, Qld (1991–2003)*

*Notes: 1. Percentage totals are based on the total number of specific accidents which occurred as a proportion of all accident related deaths.*
*2. Specific accidental death categories have been sorted by frequency.*

### Geographical distribution (ARIA)

Over the 13 years examined, the rate of accidental deaths was highest in remote areas, with 3.2 deaths per 100,000 children, followed by regional areas, with 2.9 deaths per 100,000. The annual rate of accidental deaths for metropolitan fatalities averaged 2.2 deaths per 100,000 children.

61 Refer to Appendix Two for a list of all 'other' accidental causes of death which includes fatal injuries caused by animals, exposure to forces of nature, adverse sequelae of medical procedures etc.

62 It is possible that a number of accidental deaths may have been suicide related (refer to suicide limitations discussed earlier in this chapter). In order for a death to be labelled a suicide, a considerable amount of proof and evidence is required. Where uncertainties arise, these deaths may be classified as accidental or undetermined.

63 Refer to Appendix Two for a list of all 'other' accidental causes of death.

## Accidental suffocations and strangulations (asphyxia related) death trends

During the 13 year period examined, 71 children died as a result of accidental suffocation and strangulation.

Table 2.10 illustrates an increase in the number of asphyxia related deaths between 1991 and 2003. In particular, while the accidental suffocation and strangulation of children and young people was low between 1991 and 1995, the number of deaths in this category almost tripled in 1996 and has remained high since 1998.

### Gender

Table 2.10 shows that the number of male deaths resulting from asphyxia related accidents is more than double that of females. Males represent 70.4% (50 deaths) of all accidental suffocation and strangulation deaths compared to 29.6% (21 deaths) for females.

**Table 2.10:** Number of accidental asphyxia related deaths by gender

| Type of death | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| 1991 | 1 | 0 | 1 |
| 1992 | 3 | 0 | 3 |
| 1993 | 1 | 0 | 1 |
| 1994 | 0 | 1 | 1 |
| 1995 | 1 | 1 | 2 |
| 1996 | 7 | 1 | 8 |
| 1997 | 1 | 1 | 2 |
| 1998 | 6 | 3 | 9 |
| 1999 | 8 | 3 | 11 |
| 2000 | 7 | 1 | 8 |
| 2001 | 6 | 1 | 7 |
| 2002 | 4 | 5 | 9 |
| 2003 | 5 | 4 | 9 |
| **Total** | **50** | **21** | **71** |

*Data source: OESR, Qld (1991–2003)*

### Age

In order of frequency, the numbers and percentages of children accidentally suffocated or strangled over the 13 years examined were:

- under 1 year 23 deaths (32.4%)
- 15 to 17 years 19 deaths (26.8%)
- 1 to 4 years 15 deaths (21.1%)
- 10 to 14 years 9 deaths (12.7%)
- 5 to 9 years 5 deaths (7.0%)

## Accidental poisoning death trends

Between 1991 and 2003, 33 children and young people died from accidental poisonings. As shown in Table 2.11, the number of deaths varied slightly from year to year with no obvious fluctuations.

### Gender

Male children were more likely to die from accidental poisoning, with 20 deaths during the 13 years, compared to 13 female deaths.

**Table 2.11:** Number of accidental poisonings by gender

| Type of death | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| 1991 | 2 | 0 | 2 |
| 1992 | 1 | 0 | 1 |
| 1993 | 3 | 1 | 4 |
| 1994 | 0 | 2 | 2 |
| 1995 | 3 | 1 | 4 |
| 1996 | 3 | 0 | 3 |
| 1997 | 1 | 1 | 2 |
| 1998 | 0 | 1 | 1 |
| 1999 | 1 | 1 | 2 |
| 2000 | 2 | 3 | 5 |
| 2001 | 2 | 1 | 3 |
| 2002 | 0 | 2 | 2 |
| 2003 | 2 | 0 | 2 |
| **Total** | **20** | **13** | **33** |

*Data source: OESR, Qld (1991–2003)*

### Age

The percentages of accidental poisoning deaths between 1991 and 2003 by age were:

- 15 to 17 years 19 deaths (57.6%)
- 1 to 4 years 9 deaths (27.3%)
- 10 to 14 years 3 deaths (9.1%)
- 5 to 9 years 2 deaths (6.1%)
- under 1 year 0 deaths (0.0%)

## Accidental fall death trends

Between 1991 and 2003, 28 children and young people died from accidental falls.

The number of deaths from accidental falls varied only very slightly over the 13 years. Each year the number of children who died from accidental falls was relatively small, ranging from zero to four deaths.

### Gender

Male children were more likely to die from accidental falls than females, with 21 deaths (75.0%) compared to seven deaths (15.0%).

**Table 2.12:** Number of accidental falls by gender

| Type of death | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| 1991 | 3 | 1 | 4 |
| 1992 | 2 | 2 | 4 |
| 1993 | 3 | 0 | 3 |
| 1994 | 1 | 0 | 1 |
| 1995 | 2 | 1 | 3 |
| 1996 | 2 | 0 | 2 |
| 1997 | 0 | 1 | 1 |
| 1998 | 0 | 0 | 0 |
| 1999 | 2 | 0 | 2 |
| 2000 | 0 | 0 | 0 |
| 2001 | 4 | 0 | 4 |
| 2002 | 2 | 2 | 4 |
| 2003 | 0 | 0 | 0 |
| **Total** | **21** | **7** | **28** |

*Data source: OESR, Qld (1991–2003)*

### Age

In order of frequency, the numbers and percentages of children who died from accidental falls were:

- 15 to 17 years 11 deaths (39.3%)
- 1 to 4 years 6 deaths (21.4%)
- 5 to 9 years 5 deaths (17.9%)
- 10 to 14 years 4 deaths (14.3%)
- under 1 year 2 deaths (7.1%)

## Accidental electrocution death trends

Fifteen children died from accidental electrocutions over the 13 years examined.

Table 2.13 shows a small peak in electrocutions between 1996 and 1999 and either zero or one accidental electrocution in other years. No accidental electrocutions occurred between 2000 and 2003.

### Gender

Male children were more likely to die from accidental electrocution than females with 12 deaths (80.0%) compared to three deaths for females (20.0%).

**Table 2.13:** Number of accidental electrocutions by gender

| Type of death | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| 1991 | 0 | 0 | 0 |
| 1992 | 1 | 0 | 1 |
| 1993 | 1 | 0 | 1 |
| 1994 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 |
| 1996 | 2 | 2 | 4 |
| 1997 | 2 | 0 | 2 |
| 1998 | 2 | 1 | 3 |
| 1999 | 4 | 0 | 4 |
| 2000 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 |
| 2003 | 0 | 0 | 0 |
| **Total** | **12** | **3** | **15** |

*Data source: OESR, Qld (1991–2003)*

### Age

The percentages of accidental electrocutions for each age category in order of frequency was:

- 15 to 17 years 6 deaths (40.0%)
- 10 to 14 years 4 deaths (26.7%)
- 1 to 4 years 4 deaths (26.7%)
- 5 to 9 years 1 death (6.7%)
- under 1 year 0 deaths (0.0%)

Two accidental electrocutions, both of 15 to 17-year-olds, occurred in the workplace.

## Summary

The following key findings regarding accidental and other deaths of children and young people between January 1991 and December 2003 were identified:

- during this period, 283 children and young people died from accidents
- the most common type of accidental death was 'other' causes (48.0%), followed by accidental asphyxia (25.1%), poisonings (11.7%), falls (9.9%) and electrocution (5.3%)
- accident related deaths have not decreased, but rates have fluctuated considerably from year to year
- males died in 67.5% of accident related fatalities
- the rate of children and young people who died from accidental causes was highest in remote and regional areas
- infants under one had the highest number of accidental asphyxia related fatalities, and
- young people aged 15 to 17 years were more likely to die from accidental poisonings, falls and electrocutions than other children.

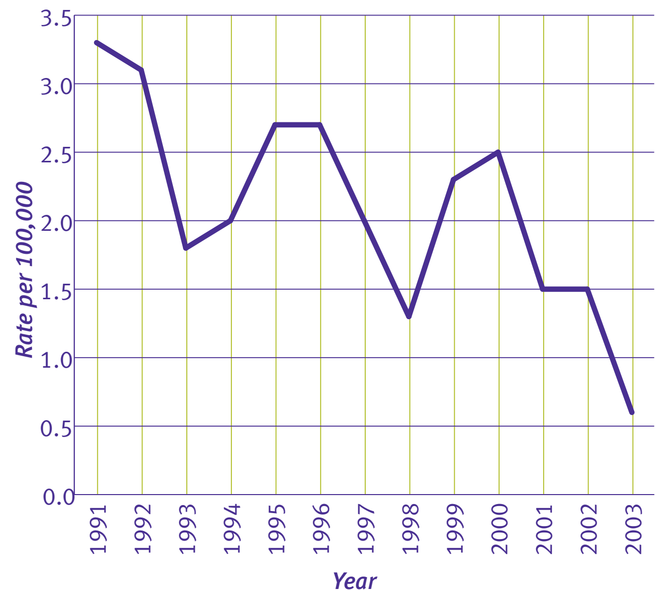
## Drowning trends, 1991–2003

Between January 1991 and December 2003, 241 children and young people drowned in Queensland.

As shown in Figure 2.8, the decline in the rate of drownings between 1991 and 2003 was quite significant. However, this decrease has not been without fluctuations. Drowning rates peaked in 1995, 1996, 1999 and 2000 and decreased in 1993, 1998 and from 2001 onwards.

Overall, the drowning rate has dropped off, particularly in more recent years. This finding is consistent with both the decline in the number of drowning deaths since the 1920s as well as the decline in drowning of children and young people nationally (ABS, 2000:1).

**Figure 2.8:** Rate of drownings for all children and young people in Queensland




*Data source: OESR, Qld (1991–2003)*

Table 2.14 shows that the number of drownings has decreased from 27 deaths in 1991 to only seven in 2003 (a 74.1% decrease).

### Gender

Male children were more than twice as likely to die from drowning as females, with 161 male deaths (66.8%) compared to 80 female deaths (33.2%). While there has been a decrease in drownings for both genders, this decline has not been consistent over the years.

**Table 2.14:** Number of drownings by gender

| Year of Death | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| 1991 | 17 | 10 | 27 |
| 1992 | 14 | 12 | 26 |
| 1993 | 10 | 5 | 15 |
| 1994 | 12 | 5 | 17 |
| 1995 | 16 | 8 | 24 |
| 1996 | 14 | 10 | 24 |
| 1997 | 14 | 4 | 18 |
| 1998 | 9 | 3 | 12 |
| 1999 | 15 | 6 | 21 |
| 2000 | 20 | 3 | 23 |
| 2001 | 7 | 7 | 14 |
| 2002 | 10 | 3 | 13 |
| 2003 | 2 | 3 | 7 |
| **Total** | **161** | **80** | **241** |

*Data source: OESR, Qld (1991–2003)*

## Age

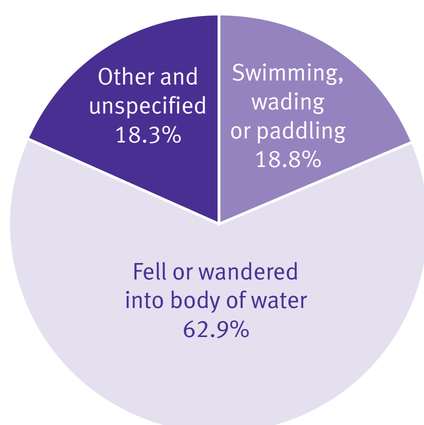
The average annual rate of drownings for all children and young people over this period was 2.1 per 100,000 children aged from birth to 17 years. Toddlers were more likely to drown than children in any other age group. Average annual rates for each age category, ordered by frequency, were:

- 1 to 4 years — 6.4 deaths per 100,000
- under 1 year — 4.2 deaths per 100,000
- 5 to 9 years — 0.9 deaths per 100,000
- 15 to 17 years — 0.8 deaths per 100,000
- 10 to 14 years — 0.4 deaths per 100,000

## Circumstances surrounding drowning[64]

Figure 2.9 demonstrates that most children and young people who drowned between 1991 and 2003 died after they fell or wandered into a body of water (62.9%, 134 deaths). The next most common activity was swimming (18.8%, 40 deaths) followed by 'other and unspecified means'[65] (18.3%, 39 deaths[66]).

**Figure 2.9:** Pecentages of deaths by activity prior to drowning




*Data source: OESR, Qld (1991–2003)*

### Gender

Table 2.15 depicts that males were more likely to drown in every circumstance than females. The gender difference was particularly significant in the swimming category with males four times more likely to drown than females (32 deaths compared to eight).

Male children were also twice as likely to drown as a result of falling or wandering into a body of water, with 91 deaths compared to 43. The finding that males are considerably more likely to drown than females is consistent with national data (ABS, 2000:2).

### Age

Significantly, toddlers aged one to four years, who drowned as a result of falling or wandering into a body of water, accounted for 116 deaths (54.5%) over the 13 years examined. No other age group accounted for such a substantial proportion of drowning deaths.

**Table 2.15:** Number of deaths by circumstances surrounding drowning by age and gender[67]

| Circumstances surrounding drowning | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| **Fell or wandered into body of water** | | | |
| Under 1 year | 3 | 2 | 5 |
| 1–4 years | 77 | 39 | 116 |
| 5–9 years | 7 | 1 | 8 |
| 10–14 years | 1 | 1 | 2 |
| 15–17 years | 3 | 0 | 3 |
| **Subtotal** | **91** | **43** | **134** |
| **Swimming, wading or paddling** | | | |
| 1–4 years | 6 | 2 | 8 |
| 5–9 years | 12 | 1 | 13 |
| 10–14 years | 6 | 3 | 9 |
| 15–17 years | 8 | 2 | 10 |
| **Subtotal** | **32** | **8** | **40** |
| **Other and unspecified** | | | |
| Under 1 year | 16 | 10 | 26 |
| 1–4 years | 4 | 0 | 4 |
| 5–9 years | 1 | 2 | 3 |
| 10–14 years | 1 | 1 | 2 |
| 15–17 years | 2 | 2 | 4 |
| **Subtotal** | **24** | **15** | **39** |
| **Total** | **147** | **66** | **213** |

*Data source: OESR, Qld (1991–2003)*

64 Twenty-eight children were excluded from this analysis as they drowned in a bathtub. These drownings will be analysed in the place of drowning section later in this chapter.

65 Most drownings in this category had unspecified codes. Other codes included drownings from 'using under water breathing equipment' and 'non-motorised craft – river'.

66 Thirty-four of these deaths occurred in 1991 and 2003 when drowning flags did not exist.

67 This table does not include bathtub drownings.

## Place of drowning[68]

### Swimming pools

- Between 1991 and 2003, 98 children and young people drowned in either public or private swimming pools, accounting for 40.7% of all child drowning deaths.
- Toddlers represented 85.7% of all children and young people to drown in swimming pools, with 84 deaths.
- Most children who drowned in swimming pools fell or wandered into the pool.
- The rate of drownings in swimming pools was extremely variable over the 13 years examined. A significant peak in pool drownings occurred in 1995 followed by decreases in 1993, 1998 and 2003. Overall, pool drownings declined over time. In Queensland a mandatory requirement for all pools to be fenced was introduced in 1992. Decreases may partly be attributed to this legislation as Australian studies have shown that pool fencing is highly effective in reducing child drownings (Pitt & Hockey, 2000:1).

### Dams and lakes

- Fifty-three children and young people drowned in dams, lakes and related areas, representing 22.0% of all child drownings over 13 years.
- Toddlers represented 66.0% of all children and young people to drown in dams and lakes, with 35 deaths.
- Most children who drowned in dams or lakes fell or wandered into the water.
- The number of dam and lake related drownings has varied considerably over the 13 years examined.

### Bathtubs

- Between 1991 and 2003, 28 children and young people died in bathtubs, accounting for 11.6% of child drownings.
- Infants under one year accounted for 67.9% of all bathtub drownings (19 deaths) followed by toddlers aged one to four years (nine deaths, 28.6%).
- An equal number of males and females died from drowning in a bathtub.

### Beach and ocean

- Twenty children and young people drowned at the beach or in the ocean, accounting for 8.3% of all child drowning deaths.
- Eight young people aged 15 to 17 years drowned at the beach or in the ocean, accounting for 40.0% of all drownings, followed by six deaths of children aged five to nine years (30.0%) and four deaths of children aged 10 to 14 years (20.0%).
- Beach and ocean drownings have consistently decreased over the 13 years examined.

### Objects containing water (e.g. buckets)

- Twelve drownings occurred when a child fell or wandered into an object containing water, accounting for 4.9% of all child drownings.
- Toddlers aged one to four years were more likely to drown in objects containing water (10 deaths, 83.3%) followed by infants under one year (two deaths, 16.6%).

### Other and unspecified

- Thirty drowning deaths occurred in other and unspecified places, accounting for 12.4% of all child drownings.
- Toddlers were the victims in 70.0% of all other and unspecified drownings, with 21 deaths in the 13 year period.

## Geographical distribution (ARIA)

The greatest average annual rate of drowning deaths was found in regional areas of Queensland, with 2.7 deaths per 100,000 children. Metropolitan regions averaged 2.0 deaths per 100,000, followed by remote areas, with 1.4 deaths per 100,000 children. The greatest number of fluctuations in the number of drownings occured in remote areas while the most significant decreases in drownings occurred in metropolitan areas.

## Summary

The following key findings regarding drowning deaths of children and young people between 1 January 1991 and 31 December 2003 were identified:

- during this period, 241 children and young people drowned

68 Place of drowning was unavailable for 1991 and 2003 as drowning flags were not used in these years. The numbers in this section will therefore under represent the number of drownings which occurred at each place of drowning discussed (see the limitations section of this chapter).

- more than twice as many males drowned as females
- drownings decreased significantly between 1991 and 2003 and particularly in more recent years
- toddlers aged one to four years have the highest average annual rate of drownings with approximately 6.4 deaths per 100,000 children in the population
- most child drownings (62.9%) were from falling or wandering into a body of water
- toddlers who drowned by wandering or falling into water represented 54.5% of all drowning deaths
- swimming pools were the most common sites of drownings, followed by dams and lakes
- most children who drowned in a bathtub were infants under one year of age, and
- the largest average annual rate of drownings occurred in regional areas, while metropolitan areas had the most significant decrease in drowning deaths.

## Suicide trends, 1991–2003

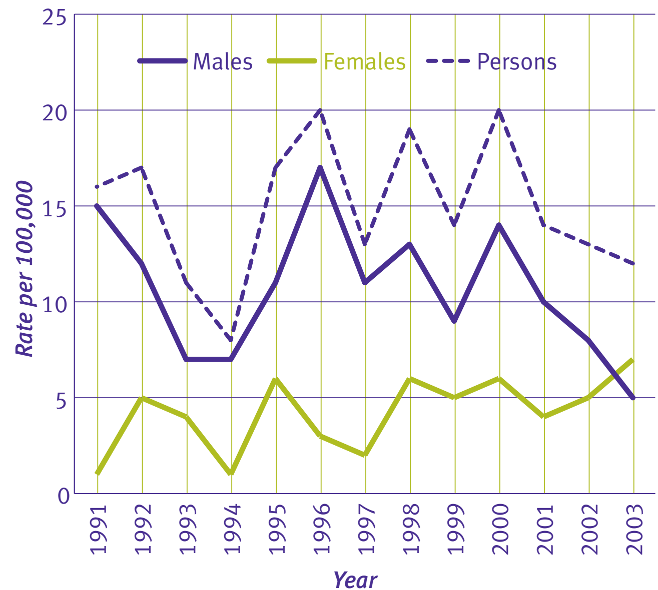
In the 13 years between January 1991 and December 2003, 194 children and young people suicided in Queensland[69]. The number of suicides has decreased slightly over this period.

Figure 2.10 demonstrates that the annual average suicide rate (see the 'persons' line) has varied notably from year to year. This graph also shows that while the suicide rate has fluctuated considerably, the overall rate has decreased 25.0%.

### Gender

Male suicide rates are considerably higher than female rates in every year. In general, male suicide rates have decreased while female numbers have increased. However, these variations have not been consistent. Male suicide rates were highest in 1991, 1996, 1998 and 2000 with a marked decrease occurring in 1994 and 2003. In contrast, the rates of female suicides were lowest in 1991, 1994 and 1997 with rates peaking in 1992 and 1995. The female suicide rate has remained relatively steady from 1998 onwards.

**Figure 2.10:** Rate of suicide by gender




*Data source: OESR, Qld (1991–2003)*

As shown in Table 2.16, males were two and a half times more likely to commit suicide than females. Over the 13 years examined, 139 males (71.6%) and 55 females (28.4%) died from suicide.

**Table 2.16:** Number of suicides by gender

| Year of Death | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| 1991 | 15 | 1 | 16 |
| 1992 | 12 | 5 | 17 |
| 1993 | 7 | 4 | 11 |
| 1994 | 7 | 1 | 8 |
| 1995 | 11 | 6 | 17 |
| 1996 | 17 | 3 | 20 |
| 1997 | 11 | 2 | 13 |
| 1998 | 13 | 6 | 19 |
| 1999 | 9 | 5 | 14 |
| 2000 | 14 | 6 | 20 |
| 2001 | 10 | 4 | 14 |
| 2002 | 8 | 5 | 13 |
| 2003 | 5 | 7 | 12 |
| **Total** | **139** | **55** | **194** |

*Data source: OESR, Qld (1991–2003)*

69 It is highly likely that this number is an under representation of suicides amongst children and young people. Where uncertainties arise surrounding intent, these deaths may have been coded as accidental or undetermined deaths. Refer to the limitations section earlier in this chapter and chapter 7 Suicide.

## Age

The age and gender distribution of children and young people who died from suicide is shown in Table 2.17. Over this period, the likelihood of a child or young person committing suicide increased with age. Seventeen-year-olds were most likely to suicide, accounting for 42.3% (82 deaths) of all suicides among children and young people. Male 17-year-olds were more than three times more likely to commit suicide than females of the same age.

Young people aged 16 were the next most frequent age category to suicide (30.4%, 59 deaths) followed by 15-year-olds (11.3%, 22 deaths) and 14-year-olds (9.8%, 19 deaths). Thirteen-year-olds accounted for 3.6% (7 deaths) of all suicides and 12-year-olds 2.1% (4 deaths). No suicides were recorded among 11-year-olds. However, one death was recorded as suicide for a 10-year-old.

**Table 2.17:** Number of suicides by age and gender

| Year of Death | Male *n* | Female *n* | Total *n* | Total % |
|---|---|---|---|---|
| 10 | 1 | 0 | 1 | 0.5 |
| 11 | 0 | 0 | 0 | 0.0 |
| 12 | 4 | 0 | 4 | 2.1 |
| 13 | 4 | 3 | 7 | 3.6 |
| 14 | 8 | 11 | 19 | 9.8 |
| 15 | 12 | 10 | 22 | 11.3 |
| 16 | 46 | 13 | 59 | 30.4 |
| 17 | 64 | 18 | 82 | 42.3 |
| **Total** | **139** | **55** | **194** | **100** |

*Data source: OESR, Qld (1991–2003)*

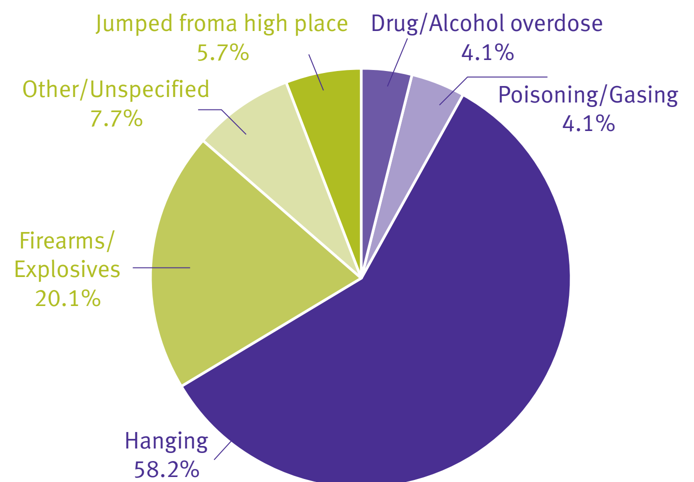
## Geographical distribution (ARIA)

Remote areas in Queensland had the highest average annual rate of suicide between 1991 and 2003, with 2.5 deaths per 100,000 children. Suicide rates in remote areas have also fluctuated the most over this period, peaking in the year 2000 with 6.6 deaths per 100,000 children. The high rate of suicide among smaller, rural areas is consistent with national findings. The general movement of young people from inland to coastal areas may have resulted in greater social disadvantage for those who remain in rural areas, and contributed to a higher suicide rate (ABS, 1994) . The average annual suicide rate for children and young people in metropolitan and regional areas were similar (1.8 and 1.7 deaths per 100,000 children respectively).

## Method of suicide

As illustrated in Figure 2.11, hanging was by far the most common method of suicide used by children and young people, representing 58.2% (113 deaths) of all modes of suicide. Firearms was the next most frequent method, used in 20.1% (39 deaths) of child suicides.

**Figure 2.11:** Pecentages of suicide method




*Data source: OESR, Qld (1991–2003)*

*Note: 1. The other/unspecified category includes suicides by drowning, submersion and sharp objects. Numbers are too small to include these categories separately in this graph.*

### Age and gender

Hanging was the most commonly used means of suicide for both males and females. Males also frequently used firearms or explosives to suicide. These two methods caused death in 81.3% of male suicides. In contrast, females were more likely to suicide from drug and alcohol overdoses and firearms, after hanging. These three methods caused 81.8% of all suicide in females. Drug and alcohol overdose was the only method of suicide that females were more likely to use than males.

**Table 2.18:** Number of suicides by method, gender and age

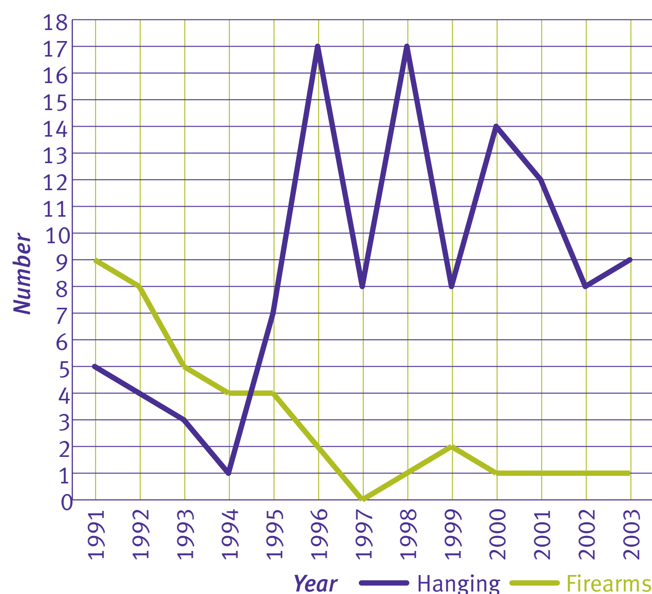
| Method of suicide | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| **Hanging** | | | |
| 10–14 years | 15 | 11 | 26 |
| 15–17 years | 65 | 22 | 87 |
| **Subtotal** | **80** | **33** | **113** |
| **Firearms/explosives** | | | |
| 10–14 years | 2 | 1 | 3 |
| 15–17 years | 31 | 5 | 36 |
| **Subtotal** | **33** | **6** | **39** |
| **Other/unspecified** | | | |
| 15–17 years | 8 | 4 | 12 |
| **Jumping from a high place** | | | |
| 15–17 years | 9 | 2 | 11 |
| **Drug/alcohol overdose** | | | |
| 10–14 years | 0 | 2 | 2 |
| 15–17 years | 2 | 4 | 6 |
| **Subtotal** | **2** | **6** | **8** |
| **Poisoning/gasing** | | | |
| 15–17 years | 5 | 3 | 8 |
| **Drowning/submersion** | | | |
| 15–17 years | 1 | 1 | 2 |
| **Sharp object** | | | |
| 15–17 years | 1 | 0 | 1 |
| **Total** | **139** | **55** | **194** |

*Data source: OESR, Qld (1991–2003)*

*Note: 1. All methods of suicide were ICD coded intentional.*

Figure 2.12 shows that the number of hanging and firearm suicides has changed substantially over the 13 years examined. Particularly significant is the large shift away from the use of firearms, which were the most frequent method of suicide until 1995, and the rapid increase in hangings from 1996 onwards. This is consistent with Queensland suicide findings for individuals of all ages (De Leo & Evans, 2002:45). Reductions in the use of firearms may be attributed to moves restricting firearm ownership over the past decade (De Leo & Evans, 2002:89).

**Figure 2.12:** Number of suicides by hanging and firearms




*Data source: OESR, Qld (1991–2003)*

*Note: 1. The numbers are provided for these two methods of suicide only as numbers in other categories are too small.*

## Summary

The following key findings regarding suicides by children and young people between 1 January 1991 and 31 December 2003 were identified:

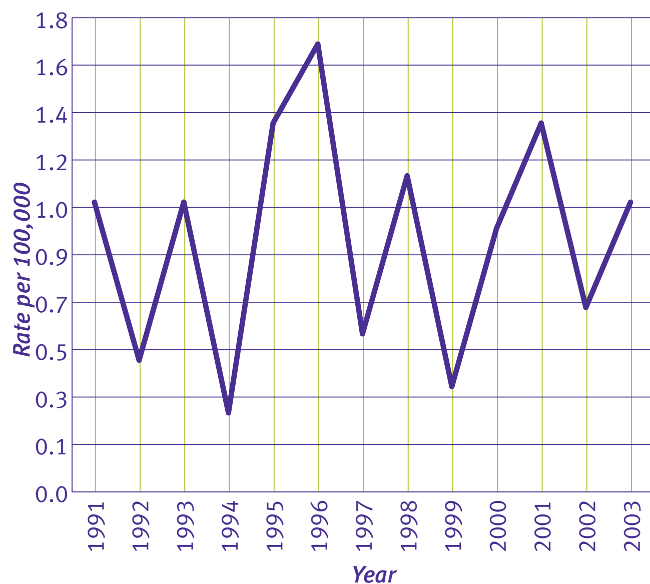
- during this period, 194 children and young people suicided – all aged between 10 and 17 years
- suicide rates have decreased marginally between 1991 and 2003, but have fluctuated considerably over this time
- in general, the male suicide rate appears to have decreased while the female rate increased
- males were more than two and a half times more likely to suicide than females
- the likelihood of a young person suiciding increases with age, with 17-year-olds the most likely to suicide
- the rate of suicides was greatest in remote areas of Queensland, and
- hanging was the method most frequently used by young people who suicided, followed by the use of firearms and explosives; hanging has increased significantly over the 13 years for both males and females.

## Homicide, fatal assault and neglect trends, 1991–2003

Between January 1991 and December 2003, 112 children and young people died from homicide, fatal assault and/or neglect.

According to Figure 2.13, the homicide rate has fluctuated extremely from year to year. Peaks in the numbers of these deaths occurred in 1996 and 2001.

**Figure 2.13:** Rate of fatal assaults by year




*Data source: OESR, Qld (1991–2003)*

### Gender

Table 2.19 shows that two more female children died from homicide, fatal assault or neglect (50.9%, 57 deaths) than males (49.1%, 55 deaths). There does not appear to be a significant gender difference in the number of homicides of children and young people. However, homicide, fatal assault and neglect is the only external cause of death category with a higher number of female deaths than male deaths.

**Table 2.19:** Number of fatal assault and neglect deaths by gender

| Method of suicide | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| 1991 | 4 | 5 | 9 |
| 1992 | 1 | 3 | 4 |
| 1993 | 5 | 4 | 9 |
| 1994 | 2 | 1 | 3 |
| 1995 | 3 | 9 | 12 |
| 1996 | 8 | 7 | 15 |
| 1997 | 4 | 1 | 5 |
| 1998 | 4 | 7 | 11 |
| 1999 | 1 | 3 | 4 |
| 2000 | 5 | 4 | 9 |
| 2001 | 8 | 5 | 13 |
| 2002 | 6 | 1 | 7 |
| 2003 | 4 | 7 | 11 |
| **Total** | **55** | **57** | **112** |

*Data source: OESR, Qld (1991–2003)*

## Type of fatal assault

The most frequent type of fatal assault on children and young people was with a sharp object, such as a stabbing (23 deaths, 20.5%) followed by child battering and other maltreatment (17 deaths, 15.2%). The third most common type of fatal assault was with a firearm, with 15 deaths (13.4%). Fatal assaults as a result of gases and vapours, and involving blunt objects such as a baseball bat, were equally the fourth most likely type of fatal assault (10 deaths each, 8.9%).

**Table 2.20** Number and percentages of fatal assaults (homicides) among children

| Homicide categories (assault by) | Total *n* | Total % |
|---|---|---|
| Sharp object (stabbing) | 23 | 20.5 |
| Child battering and other maltreatment | 17 | 15.2 |
| Rifle, shotgun and other firearms | 15 | 13.4 |
| Gases and vapors | 10 | 8.9 |
| Blunt object | 10 | 8.9 |
| Unspecified/other specified means | 9 | 8.0 |
| Hanging, strangulation and suffocation | 7 | 6.3 |
| Bodily force (fight or brawl) | 7 | 6.3 |
| Smoke, fire, or flames | 6 | 5.4 |
| Neglect and abandonment | 3 | 2.7 |
| Drowning and submersion | 3 | 2.7 |
| Drugs/poisoning | 2 | 1.8 |
| **Total** | **112** | **100.1** |

*Data source: OESR, Qld (1991–2003)*

*Note: 1. The percentage column does not equal 100 due to rounding.*

### Gender

While gender differences are not significant for homicide, fatal assault and neglect deaths, the types of assault differed considerably for male and female children. For example, males were almost twice as likely to be fatally assaulted with a sharp object (15 male, eight female deaths). While females were four times as likely to be killed with a blunt object (eight female, two male deaths). Males and females were almost equally as likely to die from child battering and other maltreatment (nine male, eight female deaths).

Assaults with sharp objects were the most common form of fatal assault on male children (15 deaths) followed by child battering and other maltreatment (nine deaths). Female children were most often killed in assaults involving guns (nine deaths) followed equally by assaults with a sharp object, child battering and other maltreatment and assaults with a blunt object (eight deaths in each category).

**Table 2.21:** Number of types of fatal assaults (homicides) by gender

| Homicide categories (assault by) | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| Sharp object (stabbing) | 15 | 8 | 23 |
| Child battering and other maltreatment | 9 | 8 | 17 |
| Rifle, shotgun and other firearms | 6 | 9 | 15 |
| Gases and vapors | 4 | 6 | 10 |
| Blunt object | 2 | 8 | 10 |
| Unspecified/other specified means | 6 | 3 | 9 |
| Hanging, strangulation and suffocation | 4 | 3 | 7 |
| Bodily force (fight or brawl) | 3 | 4 | 7 |
| Smoke, fire, or flames | 3 | 3 | 6 |
| Neglect and abandonment | 2 | 1 | 3 |
| Drowning and submersion | 1 | 2 | 3 |
| Drugs/poisoning | 0 | 2 | 2 |
| **Total** | **55** | **57** | **112** |

*Data source: OESR, Qld (1991–2003)*

### Age

Table 2.22 depicts the different types of fatal assault for each age group:

- under 1 year 25.0% (28 deaths)
- 1 to 4 years 25.0% (28 deaths)
- 5 to 9 years 19.6% (22 deaths)
- 15 to 17 years 17.0% (19 deaths)
- 10 to 14 years 13.4% (15 deaths)

Infants under one and toddlers aged one to four years were equally vulnerable to fatal assault. These two age groups accounted for 50.0% of all homicides.

Table 2.22 illustrates that within each age category, certain types of fatal assaults were particularly prevalent. The most frequent types of fatal assaults for each age category were:

- under 1 year — child battering and other maltreatment (10 deaths)
- 1 to 4 years — assault by sharp object (seven deaths)
- 5 to 9 years — assault using gases and vapours (six deaths)
- 10 to 14 years — assault by sharp object (four deaths)
- 15 to 17 years — assault by sharp object (10 deaths)

**Table 2.22:** Number of types of fatal assaults (homicides) by age

| Homicide category (assault by) | Under 1 year | 1-4 years | 5-9 years | 10-14 years | 15-17 years | Total |
|---|---|---|---|---|---|---|
| Sharp object (stabbing) | 2 | 7 | 2 | 2 | 10 | 23 |
| Child battering and other maltreatment | 10 | 6 | 1 | 0 | 0 | 17 |
| Rifle, shotgun and other firearms | 2 | 2 | 4 | 3 | 4 | 15 |
| Gases and vapors | 0 | 3 | 6 | 1 | 0 | 10 |
| Blunt object | 1 | 1 | 3 | 4 | 1 | 10 |
| Unspecified/ other specified means | 6 | 1 | 1 | 0 | 1 | 9 |
| Hanging, strangulation and suffocation | 1 | 1 | 3 | 1 | 1 | 7 |
| Bodily force (fight or brawl) | 3 | 0 | 0 | 2 | 2 | 7 |
| Smoke, fire, or flames | 1 | 2 | 2 | 1 | 0 | 6 |
| Neglect and abandonment | 1 | 2 | 0 | 0 | 0 | 3 |
| Drowning and submersion | 1 | 1 | 0 | 1 | 0 | 3 |
| Drugs/poisoning | 0 | 2 | 0 | 0 | 0 | 2 |
| **Total** | **28** | **28** | **22** | **15** | **19** | **112** |

*Data source: OESR, Qld (1991–2003)*

## Geographical distribution (ARIA)

The average annual rate of homicides was greatest in metropolitan regions with 1.3 deaths per 100,000 children. Rates in remote and regional areas were similar, accounting for 0.9 and 0.8 deaths per 100,000 children respectively. A peak in the number of deaths in remote areas occurred in 1996 with 4.6 per 100,000 children fatally assaulted.

## Summary

The following key findings regarding the homicide, fatal assault and neglect of children and young people between 1 January 1991 and 31 December 2003 were identified:

- in total, 112 children and young people were fatally assaulted
- the homicide rate of children has increased slightly since the mid 1990s
- males and females were almost equally as likely to be killed by another person
- children and young people were most commonly killed with a sharp object (20.5%) followed by child battering and other maltreatment (15.2%)
- infants under one year and toddlers aged one to four years were more likely to be fatally assaulted than children in any other age group, and
- the average annual rate of homicide, fatal assault and neglect was highest in metropolitan areas.

# Fire death trends, 1991–2003

During the 13 years examined, 51 children and young people died in Queensland fires.

Fire deaths have generally decreased since 1991, particularly in recent years. However, a significant peak in the number of fires occurred in 1994 and 1995.

## Gender

Male children and young people were more likely to die in fires, with 31 deaths (60.7%) compared to females with 20 deaths (39.2%).

**Table 2.23:** Number of fire deaths by gender

| Year of death | Male *n* | Female *n* | Total *n* |
|---|---|---|---|
| 1991 | 3 | 2 | 6 |
| 1992 | 2 | 0 | 2 |
| 1993 | 3 | 2 | 5 |
| 1994 | 6 | 5 | 11 |
| 1995 | 6 | 4 | 10 |
| 1996 | 3 | 0 | 3 |
| 1997 | 2 | 0 | 2 |
| 1998 | 1 | 0 | 1 |
| 1999 | 2 | 3 | 5 |
| 2000 | 1 | 2 | 3 |
| 2001 | 0 | 0 | 0 |
| 2002 | 1 | 0 | 1 |
| 2003 | 1 | 2 | 3 |
| **Total** | **31** | **20** | **51** |

*Data source: OESR, Qld (1991–2003)*

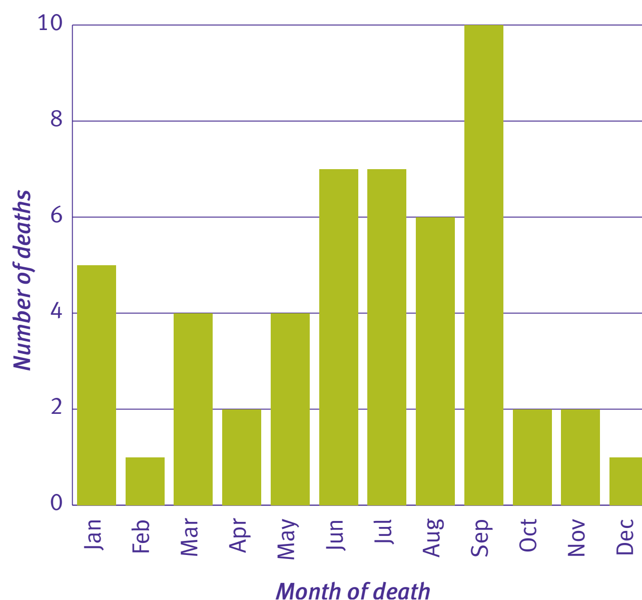
## Age

Toddlers aged one to four years experienced the highest number of fire fatalities, with 31 deaths (60.8%). The five to nine-year-old age category had the second highest number of fatalities, with seven deaths (13.7%), followed by both 10 to 14 and 15 to 17-year-olds with six deaths each (11.8% each). Only one infant died in a fire between 1991 and 2003.

## Month of fire

As shown in Figure 2.14, fire fatalities among children and young people were most likely to occur in the winter months, with 58.8% of deaths occurring between June and September (30 deaths). This finding is consistent with the Queensland fire literature (see chapter 10) and has been attributed to an increase in the number of electrical accidents during the winter months (Department of Emergency Services, 1998:27).

**Figure 2.14:** Number of fire deaths by month of the year




*Data source: OESR, Qld (1991–2003)*

## Geographical distribution (ARIA)

The average annual rate of deaths from fires was similar across all areas. Regional and remote areas had only slightly higher rates of fire deaths, with 0.6 deaths per 100,000 children in regional areas, 0.5 per 100,000 in remote areas and 0.4 per 100,000 children in metropolitan areas.

## Summary

The following key findings regarding the deaths of children and young people from fires between 1 January 1991 and 31 December 2003 were identified:

- during this period, 51 children and young people died in fires
- child deaths from fires have decreased in recent years
- males were more likely to die in fires than females
- toddlers aged one to four years were more likely to die in fires (60.7%)
- fires are most likely to occur in the winter months (June to September), and
- the rate of deaths from fires was similar across all Queensland regions.