Griffith UNIVERSITY

Suicide in Queensland

1999 – 2001

Mortality rates and related data

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Australian Institute for Suicide Research and Prevention

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- ### Offices of the Coroner throughout Queensland

  Staff have provided the documentation that is necessary to maintain the project, and provided prompt clarification on specific deaths.

- ### Queensland Police Service

  Officers frequently deal with the consequences of suicides and, in the course of duty, collect invaluable information related to completed suicides.

- ### Queensland Health Scientific Services

  Staff have provided an important service in the delivery of crucial documentation.

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Key findings

While this report should be considered in its entirety, some of the key findings are highlighted below.

General overview:

- Suicide has been on the decline in most Western Countries for the 1999–2001 period, for both young people and the elderly.
- 1494 suicides were registered for Queensland during the 1999–2001 period, representing a mortality rate of 13.7 per 100 000 (21.8 per 100 000 for males and 5.6 per 100 000 for females).
- Males completed suicide four times as often as females.
- The highest suicide rates were witnessed in the 25–34 year age group for both males (36.8 per 100 000) and females (10.4 per 100 000 persons), after which a subsequent decline was experienced.
- For males only, rates resurged again at age 75 years and over to 27.2 per 100 000 – a suicide rate higher than that of young 15–24 year old males.

Methods used:

- The main methods used for suicides in Queensland over the years 1999–2001 were hanging (43%), and motor vehicle carbon monoxide poisoning (21%), accounting for nearly two thirds of all deaths.
- The proportion of suicides from firearms continued to decline (from 27% of all suicides during 1990–1995, to 15% during 1996–1998, and to 12% for the current period), and is now the fourth most common method in Queensland.
- For males and females, hanging was the most common method in each age group.
- Overall, males were approximately three times more likely to use firearms to suicide than females (14% vs. 4%). Conversely, females were approximately three times more likely to use poisoning by solids or liquids to suicide than males (29% vs. 9%).

Metropolitan, regional and remote:

- Mortality rates for males in remote areas (42.3 per 100 000) were significantly higher than the male rates for metropolitan areas and throughout Queensland as a whole. Regional rates for males and all persons were significantly higher than those from counterparts in metropolitan areas.
- The male suicide rate in remote areas was about two times the rate seen in other areas of Queensland.
- The rate of suicide among young males in remote areas (80.1 per 100 000) was more than four times the rate seen in metropolitan counterparts.
- For females of all ages in remote areas, mortality rates were twice those of females in metropolitan areas.
- In remote areas, more than half of all suicides were by persons aged under 35 years old, with only 13% by persons aged older than 55 years.

- Hanging was the most common method of suicide in all areas of Queensland, and accounted for two-thirds of all suicides in remote areas.
- In comparison to regional and remote areas, the metropolitan areas of Queensland experienced smaller proportions of hanging (37%) and firearm (7%) suicides, and greater proportions of poisoning (16%) and motor vehicle carbon monoxide poisoning (25%).
- Regional (16%) and remote (14%) areas had similar proportions of firearm suicides, although carbon monoxide poisoning only accounted for 7% of suicides in the remote areas of Queensland.

Geographical regions:

- Geographical regions throughout Queensland had different profiles in terms of gender ratios, age distributions, methods used and mortality rates.
- Overall, the lowest suicide rate was found for the Darling Downs and Wide Bay region (11.3 per 100 000) and the highest rate was found for the Western region (21.2 per 100 000).
- Among males, suicide rates ranged from 18.0 per 100 000 in the Darling Downs & Wide Bay region to 34.9 per 100 000 in the Western region.
- Among females, suicide rates ranged from 4.3 per 100 000 in the Mackay–Fitzroy region to 6.4 per 100 000 for the North & Far North region.
- The Western region had the largest difference in proportions of suicides between males and females (6.7:1), being the highest gender ratio of any region in Queensland (Qld = 3.8:1). The highest proportions of suicides by females occurred in the Outer Brisbane region (3.3:1).
- The rate of suicide for males in the Western region was of particular concern, with a suicide mortality rate 75% higher than the Queensland rate (peaking in the 15–24 year age group, at 60.5 per 100 000).
- Hanging represented over two thirds (68%) of the method choice in the Western region, which is the largest proportion of any method throughout Queensland. Use of firearms in this region decreased remarkably from the previous report period (1996–1998), from 38% to 10%, which is lower than the state average (12%).
- Brisbane City had the lowest proportion of firearm use out of all regions throughout Queensland, while use of firearms was above the state average (12%) for North and Far North (17%), Mackay–Fitzroy (18%), and Darling Downs and Wide Bay regions (21%).

Sub-populations - Indigenous:

- Indigenous people in Queensland had a rate of suicide that was 56% higher than the whole Queensland population (20.1 per 100 000 vs. 12.9 per 100 000). This discrepancy is greatest in young indigenous males (15–24 years); with a rate of suicide almost 3.5 times that of all young males in Queensland (86.9 per 100 000 vs. 25.2 per 100 000). Indigenous males aged 25–34 years completed suicide two times greater than the state average.
- The majority of indigenous suicides were under the age of 35 at time of death (83%) which was approximately two-times the proportion seen in Queensland as a whole (42%).
- In the Mackay–Fitzroy region, indigenous people had suicide rates more than four times that of the general population, while rates in the Western region for indigenous people were almost two times those of the general population. For indigenous males in North & Far North, the mortality rate was 80% greater than for the general male population in the region.
- Hanging accounted for almost all suicides by indigenous people (90%) (Qld=41 per cent), and firearms accounted for 5% of indigenous suicides (Qld=12 per cent).

Sub-populations – psychiatric inpatients:

- There were 38 people who completed suicide while actively psychiatric inpatients at the time of death (23 male, 15 female = 1.5:1). These persons were not receiving outpatient or other allied psychiatric services. More than half (55%) of these suicide deaths occurred outside the psychiatric facility, mainly at their own residence (n=20), and most of these patients had absconded.
- People who completed suicide while under psychiatric care typically had a diagnosis of depression (n=21; 55%), or schizophrenia or an unspecified psychotic disorder (n=5; 13%).
- More than half the suicides under psychiatric care had communicated their suicidal intent in the 12 months preceding death (55%), with fifteen (15) inpatients having a history of suicide attempts in the last 12 months (39%).

Sub-populations – people in custody:

- Nineteen (19) suicides were recorded among people in custody, with the majority being male (84%) and caucasian (63%). Seven suicides (37%) occurred in both the Brisbane City and North & Far North regions of Queensland. Most suicides in custody were by hanging (n=18), and within the person's cell (n=11).

Sub-populations – children under 15 years:

- Twelve suicides occurred among people under 15 years of age. The majority of these deaths occurred in rural areas. Seven males and five females completed suicide over a three year period; five (5) suicides reported in 1999, three (3) in 2000, and four (4) in 2001, with the majority (n=7) being of caucasian ethnicity.

1. Introduction

With suicide now claiming approximately one million lives worldwide, the need for immediate suicide prevention responses is high on the agenda of many countries of the world. In all countries, suicide is now one of the three leading causes of death among people aged 15–34 years, and in about one third of all countries suicide predominates in the young adult age groups (WHO, 1999). Initially, suicide prevention responses originated from the awareness of large increases in suicide among young people across most regions of the world. However, a recent decline in suicide mortality among this age group has lead to the belief that such trends are changing (De Leo et al., 2002), with peak increases in the young to middle aged adults and declining rates in older people in most countries (Hoxey & Shah, 2000; Sartorious, 1995). Consequently, many countries including Australia have expanded their suicide prevention initiatives and national suicide prevention plans to a focus on the whole of the life span including children under 15 years, through to older aged adults over 65 years.

In Australia, the mortality rates of middle-aged males (aged between 25–34 years) have risen markedly, with the current suicide rate for this group at 29.9 per 100 000 persons (ABS by request). This increase in suicide rates of young male adults when coupled with the decline in the suicide rates of older age people has lead to a relatively stable overall national suicide rate, which since the 1920s has hovered between 10 and 15 suicides per 100 000 population. Nevertheless, upon close examination of suicide mortality data within specific groups, there are several remarkable areas of concern indicating the need for targeted suicide prevention responses. As indicated in the previous Suicide in Queensland Report (1996–1998), and supported in the current report, the issue of suicide among young adult men, and specific groups (socially, demographically, contextually, and psychologically defined), remains a priority.

Suicide prevention research is used to inform the development and implementation of suicide prevention initiatives. Specifically, research on the incidence of suicidal behaviour originates from official suicide mortality data which indicates suicide rates across the lifespan, usually represented as condensed data within 5 or 10 year age-brackets. It is widely acknowledged, however, that official mortality rates underestimate the true magnitude of suicide mortality (Sainsbury & Jenkins, 1982). A death certified as a suicide occurs when there is a convergence of data or several pieces of very strong evidence indicating a high probability of suicide. The compilation of findings from coronial investigations (on sudden and unexpected deaths) is the typical means of determining official suicide mortality data. Such investigations involve post-mortem examination reports, information on psychiatric and social history, and other information deemed relevant to converging evidence of the certification of death as a suicide (such as a suicide note etc). However, the reliability of these sources of data is often influenced by several factors including issues pertaining to certification of death, idiosyncratic differences between certifiers (eg; state coroners), and difficulties establishing certification for suicide for different methods (eg motor vehicle accidents etc). These factors may result in a lower probability of certainty that a death represents a suicide, and therefore the absolute values of suicide rates are more indicative of a conservative calculation of the true level of suicide mortality.

This report is the outcome of analyses conducted on Queensland suicide mortality data, which is compiled and stored in the Queensland Suicide Register (QSR). The QSR is a comprehensive and sophisticated suicide database, which has been funded by Queensland Health since 1990 for the purpose of maintaining and disseminating Queensland mortality data covering all age groups of the life span. The QSR consists of a wide range of data including demographic, psychosocial, psychiatric, medical and behavioural aspects of suicide death cases. This information allows for the conduct of sophisticated analyses and epidemiological research regarding suicide deaths in Queensland in order to disseminate research, reports, journal articles, book chapters, policy-related advice on suicide, and public conferences and presentations. Informants therefore consist of the general public, community groups, government and non-government agencies, professionals and workers in relevant fields such as health, welfare, justice, education, emergency services and social policy.

1.1 Report structure

The purpose of this report is to provide statistical data on suicide mortality in Queensland, for the period 1999–2001. Suicide in Queensland: Mortality Rates and Related Data 1999–2001 complements previous publications of the Australian Institute for Suicide Research and Prevention, which referred to the years 1990–1995 and 1996–1998.

Section 1 outlines data collection processes, discusses issues that impact on data collection, and explains how data are presented throughout the report.

Section 2 provides a basic overview of contemporary and historical data on suicide at the international, national and state levels, providing a context to the mortality data for Queensland, using Australian Bureau of Statistics data.

Section 3 presents data on suicide mortality and method of suicide used for all of Queensland by age and gender, using Queensland Suicide Register (QSR) data.

Section 4 provides a more detailed view of suicide in Queensland by presenting mortality rates and related data for urban and rural areas in Queensland and for seven geographically defined regions, using QSR data.

Section 5 explores four specific issues: suicide among indigenous people, suicide in custody, suicide among people under psychiatric care and suicide among young people under 15 years of age, using QSR data.

Section 6 provides a comparison between findings from this report and the Institute's report concerning suicides in Queensland from the previous triennium, 1996 to 1998.

1.2 Sources of data

Data for each case of suicide in the Queensland Suicide Register is obtained from three different sources: Post-Mortem Examination Report (Post-Mortem), Report Concerning Death by Member of the Police Service (Form 4), and Report to the Coroner by Police Officer in the Event of a Possible Suicide (Psychological Autopsy).

Post-mortem

Queensland Health Scientific Services in Brisbane forward on to AISRAP post-mortem reports of all deaths occurring in Queensland that they consider are possible suicides. These include post-mortems that have been conducted in urban and rural areas. Post-mortem reports normally include demographic information on the deceased and details of the time and date of death. These reports also provide the underlying cause of death (e.g. fall from height), information pertaining to the physical condition of the deceased, including apparent pre-mortem conditions (e.g. terminal cancer, HIV status), and a toxicology report providing an analysis of substances present in the circulatory, urinary and digestive systems.

Form 4

Form 4's are reports lodged by investigating officers that contain brief demographic details (e.g. age, sex and occupation) and a summary of the circumstances surrounding the death (e.g. place and time of death). This form often includes useful additional information such as any psychiatric history of the deceased, relationship problems and other information deemed relevant by the investigating officer.

Psychological autopsy

A modified psychological autopsy questionnaire has been developed in consultation with the Queensland Police Service and the state's coroners. The questionnaire is completed by a police officer in the case of a possible suicide, following interviews with those close to the deceased. This questionnaire enables gathering of psychosocial, behavioural and demographic data.

The coverage of this report is all suicide deaths between 1999 and 2001 inclusive. While the authors have sought to provide the most contemporary data available, several unresolved issues prevented the addition of data for 2002. Changes to medico-legal system procedures meant that the research team was not receiving many post-mortem forms for the period of 2002. The data collection and retrieval methods that had been in place previously were changed during 2002 in accordance with changes to the Coroner's Act. Therefore, the current report is restricted to the uniform collection process that was in place for the years 1999 to 2001. The aforementioned changes to the medico-legal system procedures will be reflected in future reports, which will contain data collected under the new procedural guidelines. While this issue is being resolved with the assistance of the State Coroner and staff of the John Tonge Centre, the differences in collection procedures necessitate independent reports for each collection phase.

1.3 Presentation of data

Data in this report is provided in a number of formats, including tables, line graphs, pie charts, and histograms. All suicide rates are expressed as a given number of deaths per 100 000 population per year and are calculated using the formula:

$$\frac{\text{Number of suicide deaths}}{\text{Population at Risk}} \times 100\,000$$

Where age standardisation is performed, the direct method of standardisation was used, taking the Australian population of 2001 as the standard. This process produces a summary rate that compensates for the different age structures of the Queensland and Australian populations and of the Queensland population over the years.

In the presentation of regional data, pie charts are used to provide a profile of suicide mortality in specific areas. Inferences regarding relative risk of suicide mortality between regions should be avoided when interpreting these graphs, as the data is not standardised by age or gender distribution.

1.3.1 Standardised mortality ratios

A standardised mortality ratio (SMR) is a way of representing the difference between the suicide rates of two populations (e.g. urban and rural). The suicide rate for one of the populations (e.g. urban) – the standard population – is represented as 1. When the SMR of the comparison population (i.e. rural) is less than 1, it indicates that the comparison population is less likely to die by suicide than the standard population. A SMR of greater than 1 indicates that the comparison population is more likely to die by suicide than the standard population. A SMR equal to one indicates that the comparison population does not differ from the standard population.

Since risk of suicide differs according to age and gender, crude mortality rates are dependent on the age-gender composition of the populations under study. Hence, it may be misleading to directly compare two rates if the populations have different age or sex distributions. Unlike a comparison between crude mortality rates, SMRs are adjusted to take into account differences in the age-gender compositions of the two populations.

1.3.2 Confidence intervals

A suicide rate or standardised mortality ratio (SMR) is only an estimate of the 'true' suicide rate or SMR for a population. Confidence intervals are used to give an indication of the possible error of that estimate. Confidence intervals are presented as a range of values in a graph or in a table. All confidence limits are set to 95% probability, which means that there is a 95% probability (confidence) that the 'true' rate or SMR is within the range of values.

In a graph, confidence intervals appear as a line with two tails – the 'true' rate should be somewhere between these two tales. When comparing two rates on a graph, only rates where the two lines do not overlap can be considered significantly different.

In a table, confidence intervals appear as two specific values (e.g. 95% CI: 11.25–13.25). When comparing two rates in a table, only rates where the confidence intervals do not overlap can be considered significantly different.

With the large number of tests presented, some tests would be expected to reach statistical significance because of chance alone. Hence, discretion should be exercised with statistical differences that are isolated.

1.4 Classification of suicides

In Australia, as in other countries, official suicide statistics are based on coroners' findings regarding the causes of death and the circumstances leading to death. However, in any suicide database there will be some suicides that are not identified due to uncertainties about the intent of the deceased and the circumstances surrounding the death. Generally, for a death to be considered a suicide, it must be evident 'beyond reasonable doubt' that the death was due to self-inflicted injuries. This high standard of proof means that deaths, which would be considered suicide in clinical or research situations, may lack sufficient evidence to be considered suicide in a legal sense. Where there are uncertainties about intent and circumstances in suicide deaths, these deaths may be attributed to other internal or external causes or classified as undetermined. Hence, official suicide statistics are widely considered to underestimate the true level of suicide mortality (O'Donnell & Farmer, 1995).

In Australia, undetermined deaths declined during the 1970s to mid-1980s but subsequently rose from 56 in 1984 to 190 in 1992 (ABS, 2000). Currently, there are approximately 100–150 undetermined deaths per year, which represents about 5 per cent of the total number of suicides. While misclassification may underestimate the true level of suicide mortality, Australian and international research has found misclassification to have little effect on the overall suicide trends (Cantor & Dunne, 1990; Mohler & Earls, 2001; Ohberg et al., 1997). However, the suicide rates for certain subgroups may be particularly affected by large numbers of undetermined deaths, such as females who use drugs and poisons, and young males who crash motor vehicles. See Cooper & Milroy (1995) for a detailed discussion of misclassification of suicide data.

In the Queensland Suicide Register, cases are classified as 'suicide' according to three levels of certainty:

1. *Beyond reasonable doubt:* The available information refers to one or more significant factors that, in combination, constitute a pattern highly indicative of suicide.

2. *Probable:* The available information is not sufficient to allow for a judgement of 'beyond reasonable doubt' but is more consistent with death by suicide than by any other means.

3. *Possible:* The available information is suggestive of suicide but there is the substantial possibility that the death may be due to other external or internal causes.

A Suicide Classification Flow Chart, showing the details of how deaths are classified with these levels of certainty, is provided in Appendix A.

Consistent with the Australian Bureau of Statistics (ABS) practice, the QSR only includes deaths where the person was a resident of Queensland, regardless of where the death occurred. In total, 1558 potential suicides by Queensland residents were registered in the Queensland Suicide Register for the period 1999–2001.

Table 1 shows the breakdown of these deaths by year of death, suicide classification, age group and gender. Of the 1558 potential suicide deaths, 64 (4.1%) were classified as 'possible', 151 (9.7%) were classified as 'probable' suicide deaths and the large majority, 1343 (86.2%) were classified as 'beyond reasonable doubt' suicide deaths. Younger deaths were more likely to be ambiguous, with more than five percent of deaths by persons aged 15–34 being classified as possible. In contrast, no cases of older adults (aged 65 years or more) were classified as possible. Approximately six percent of female deaths were classified as possible, whereas less than four percent of male deaths were.

Table 2 shows that the proportion of 'possible' suicide rates are small compared to other classifications and hence are of interest more for discussion than for analysis. Therefore, for further analysis, only the 'probable' and 'beyond reasonable doubt' figures have been included (i.e. a total of 1494 suicide deaths for 1999 to 2001).

Table 1

Number of suicide deaths by year, suicide classification, age group and gender, Queensland, 1999–2001

Suicide classification and age	Males			Females			Total
	1999	2000	2001	1999	2000	2001	1999 – 2001
Possible							
15-34yrs	11	9	5	5	2	1	33
35-64yrs	11	4	5	4	2	5	31
65+ yrs	0	0	0	0	0	0	0
All Ages*	22	13	10	9	4	6	**64**
Probable							
15-34yrs	34	19	7	3	2	7	72
35-64yrs	28	15	9	7	4	3	66
65+ yrs	6	2	1	1	1	1	12
All Ages*	68	36	17	11	7	11	**151**
B R D #							
0-14yrs	2	3	2	3	0	2	12
15-34yrs	133	159	146	34	40	35	547
35-64yrs	151	174	164	46	48	44	627
65+ yrs	37	53	39	3	13	9	154
All Ages*	323	389	351	86	101	90	1343
Total	413	438	378	106	112	107	**1554**

Beyond reasonable doubt

* There are four additional cases in the total, of unknown age (1 probable suicide death and 3 BRD).

Source: Queensland Suicide Register

Table 2

Number and rate of suicide deaths by age and suicide classification, 1999–2001

Suicide classification and age	Number	Rate ^
Possible		
0-14yrs	0	0
15-34yrs	33	1.06
35-64yrs	31	0.74
65+ yrs	0	0
All Ages	**64**	**0.59**
Probable		
0-14yrs	0	0
15-34yrs	72	2.30
35-64yrs	66	1.58
65+ yrs	12	0.95
All Ages*	**151**	**1.39**
B R D #		
0-14yrs	12	0.52
15-34yrs	547	17.51
35-64yrs	627	15.01
65+ yrs	154	12.16
All Ages*	**1343**	**12.34**

^ Rate per 100 000 persons

Beyond reasonable doubt

* There are four additional deaths in the total, of unknown age (1 probable suicide death and 3 BRD).

Source: Queensland Suicide Register

Tables 3 and 4 present the number of suicide deaths by method of suicide for each of the suicide classifications, 'beyond reasonable doubt' and 'probable' suicide. The majority of deaths deemed possible suicide (not shown) involved use of analgesics, antipyretics and antirheumatics and multiple drugs. Closer examination revealed that most of these cases involved the use of morphine or heroin, often by a known drug user. Deaths classified as possible were found to occur in subjects whose mean age was lowest among all the other deaths. Among suicide deaths classified as 'beyond reasonable doubt' however, close to half the deaths were from 'hanging, strangulation and suffocation'. Use of 'gases and vapours' and 'firearms' made up most of the remaining method of suicide.

Table 3

Suicides classified as 'beyond reasonable doubt' by method and gender, Queensland, 1999–2001

Method	Males	Females	Persons	%
Hanging, strangulation, suffocation	506	103	609	45.3
Other gases and vapours (incl. motor vehicle carbon monoxide)	241	62	303	22.6
Firearms and explosives	157	10	167	12.4
Solid and liquid substances	69	67	136	10.1
Multiple drugs	*37*	*45*	*82*	*60.3*
Other and unspecified solids and liquids	*13*	*9*	*22*	*16.2*
Other specified drugs	*9*	*11*	*20*	*14.7*
Analgesics, antipyretics, and antirheumatics	*6*	*1*	*7*	*.15*
Other sedatives and hypnotics	*3*	*1*	*4*	*2.9*
Tranquilisers and other psychotropic agents	*1*	*0*	*1*	*0.7*
Jumping from high places	28	9	37	2.8
Lying before moving object	23	7	30	2.2
Cutting and piercing	14	3	17	1.3
Burns and fire	10	5	15	1.1
Drowning	6	7	13	1.0
Electrocution	6	2	8	0.6
Other or unspecified methods	6	2	8	0.6
Total	1066	277	1343	100

Source: Queensland Suicide Register

Table 4

Suicides classified as 'probable' by method and gender, Queensland, 1999–2001

Method	Males	Females	Persons	%
Solid and liquid substances	44	22	66	43.7
Multiple drugs	*22*	*14*	*36*	*54.5*
Other and unspecified solids and liquids	*9*	*2*	*11*	*16.7*
Other specified drugs	*5*	*4*	*9*	*13.6*
Analgesics, antipyretics, antirheumatics	*4*	*0*	*4*	*6.1*
Other sedatives and hypnotics	*2*	*1*	*3*	*4.5*
Tranquilisers and other psychotropic agents	*1*	*1*	*2*	*3.0*
Barbituates	*1*	*0*	*1*	*1.5*
Hanging, strangulation, suffocation	36	4	40	26.5
Other gases and vapours (incl. motor vehicle carbon monoxide)	20	1	21	13.9
Firearms and explosives	4	1	5	3.3
Jumping from high places	4	0	4	2.6
Lying before moving object	4	0	4	2.6
Other or unspecified methods	3	1	4	2.6
Cutting and piercing	2	0	2	1.3
Burns and fire	2	0	2	1.3
Drowning	1	0	1	0.7
Electrocution	1	0	1	0.7
Crashing of motor vehicle	1	0	1	0.7
Total	122	29	151	100*

* Totals may not sum accurately due to rounding error.

Source: Queensland Suicide Register

1.5 Consistency with Australian Bureau of Statistics Data

The Queensland Suicide Register (QSR) data differs from the Australian Bureau of Statistics (ABS) data with regard to the classification of suicides. ABS mortality data is collated based on coroner's findings while the QSR is based on health research criteria. Hence, the threshold for classifying a death as suicide for research purposes is lower than that used for legal purposes, thereby reducing the possibility of suicides being misclassified as other external (e.g. accidents) or internal causes (e.g. organ failure) or undetermined deaths (see Appendix A for more information regarding classification of suicides).

The QSR, like the ABS, only includes deaths by suicide where the deceased resided in the state of Queensland. However, there may be slight differences between the QSR and the ABS totals given that the QSR is not notified of the death of Queensland residents that occur outside of the state. Further, ABS data are calculated on registered year of death, while QSR statistics are calculated using actual year of death. For this reason, there may be a small number of deaths that are not included in this report but would be included in the ABS data for suicides in Queensland. Table 5 shows the number and rate of suicides registered in the QSR and ABS according to gender and age group for the year 2001, and the total number of suicides for the period 1999–2001. The age-standardised rate of suicide deaths registered in the QSR for males in 2001 (20.4 per 100 000) was 9.3% lower than that registered by the ABS, however over the 1999–2001 triennium the difference in the rates is 3.5%. There are several possible reasons that may influence why there have been slight discrepancies between ABS and QSR figures. Firstly, to determine whether a death is a suicide in the QSR, both Post-mortem Reports and Form 4's are required. Where one of these sources of information is not available, data cannot be entered into the database. Conversely, the ABS does not collate data from different sources, and relies on one piece of information alone to make a judgement on suicidality. Given the changes to the data collection and retrieval process in Queensland, not all the necessary forms are being processed or returned. A second consideration is the details of Queensland residents who die by suicide whilst interstate or overseas. Case information of these few individuals each year is not returned to the Australian Institute for Suicide Research and Prevention, but is far more likely to be sent to the national collection body (i.e. ABS). Therefore these cases are not included in the QSR. Despite discrepancies between ABS and QSR, changes in the data collection and retrieval processes should eliminate any potential biases in the future.

Table 5

Number and rate of suicides in Queensland by gender and age group for 2001 and 1999–2001, according to Queensland Suicide Register and Australian Bureau of Statistics#

	2001 QSR		2001 ABS		1999–2001 QSR	1999–2001 ABS
Males	No	Rate*	No	Rate*	No	No
0-14yrs	2	-	3	-	7	7
15-24yrs	68	26.3	70	27.1	208	203
25-34yrs	85	32.4	91	34.6	290	296
35-44yrs	76	28.1	87	32.2	249	273
45-54yrs	63	25.2	69	27.6	182	195
55-64yrs	34	19.3	39	22.1	110	108
65-74yrs	25	21.9	30	26.3	75	80
75yrs+	15	19.4	17	22.0	63	61
All Ages	**368**	20.4	**406**	22.5	**1184^**	1223
Females						
0-14yrs	2	-	1	-	5	5
15-24yrs	12	4.8	13	5.2	37	40
25-34yrs	30	11.2	21	7.8	84	70
35-44yrs	16	5.7	16	5.7	73	71
45-54yrs	22	8.8	20	8.0	45	46
55-64yrs	9	-	10	6.0	34	31
65-74yrs	7	-	7	-	18	19
75yrs+	3	-	5	-	10	15
All Ages	**101**	5.5	**93**	5.1	**306**	297
Persons						
0-14yrs	4	-	4	-	12	12
15-24yrs	80	15.7	83	16.3	245	243
25-34yrs	115	21.6	112	21.1	374	366
35-44yrs	92	16.8	103	18.8	322	344
45-54yrs	85	17.0	89	17.8	227	241
55-64yrs	43	12.5	49	14.2	144	139
65-74yrs	32	13.8	37	16.0	93	99
75yrs+	18	9.4	22	11.5	73	76
All Ages	**470**	13.0	**499**	13.8	**1494 ^**	1520
Rate per 100 000	**13.0**		**13.8**		**13.7**	**14.2**

#ABS reports by year the death was registered, QSR reports by year of death.
^ Totals include 4 males of unknown age.
* Rate per 100 000 persons
- Rate not calculated where numbers are below 10.
**Rate per 100 000 persons, age standardised to the Australian population, 2001.

2. Suicide trends: worldwide, Australia and Queensland

To place the current report in context, this section provides an overview of the International, National and State suicide data. The data presented here are sourced from the Australian Bureau of Statistics (ABS) and the World Health Organisation (WHO). It should be noted that differences might appear between data from these different sources (i.e. ABS, WHO, & QSR) due to different data collection and classification methods (see section 1.4 for more information on classification of suicides).

2.1 Worldwide trends (WHO data)

The WHO estimates that about one million people died worldwide from suicide in the year 2000, with up to 20 million people attempting suicide in the same year. There are estimates that this figure could increase to 1.5 million by 2020.

One million suicide deaths translates to one death every 40 seconds, and one suicide attempt every 3 seconds, on average (WHO, 2004).

WHO also reports that more people die from suicide than in all of the armed conflicts around the world and about the same or more than the number of people dying from traffic accidents.

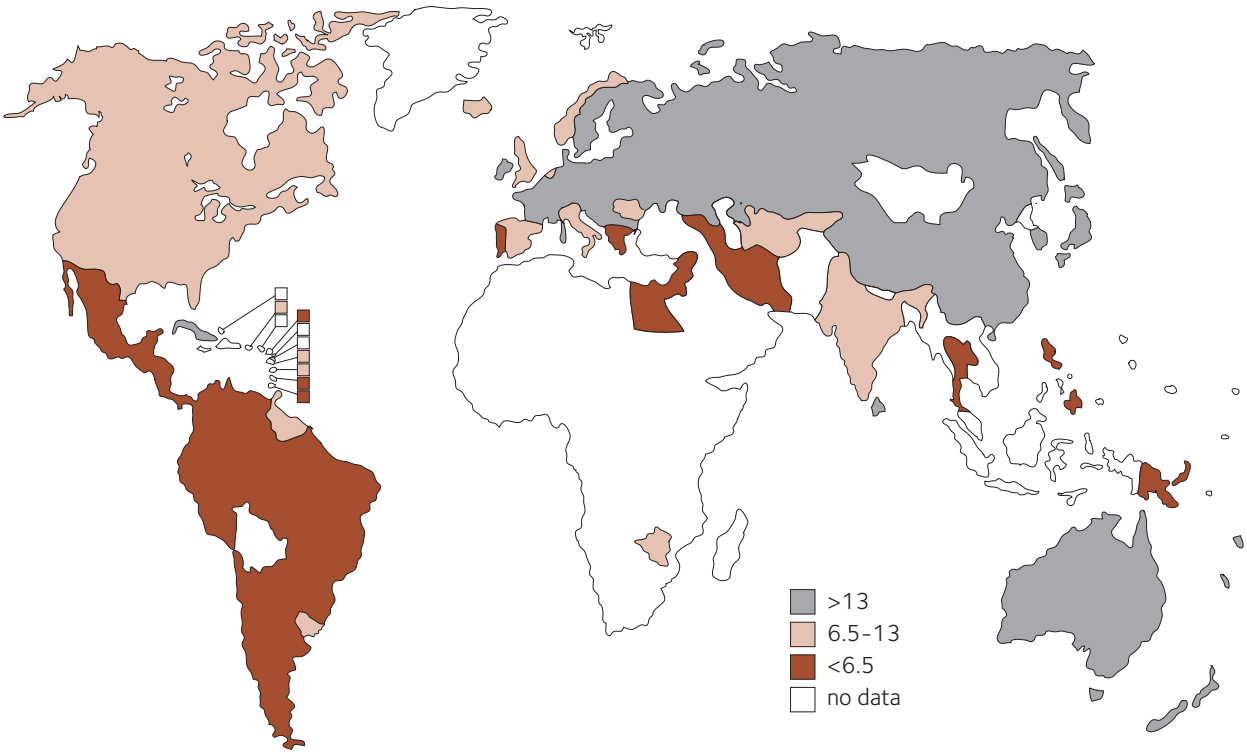
As shown in Figure 1, the highest suicide rates (>13 deaths per 100 000 persons) – for countries with available data – are found in the Eastern European regions and in Australia.

Taken as an average for 53 countries for which data is complete and available, the age-standardised suicide rate for 1996 was 15.1 per 100 000 – with rates for males of 24.0 per 100 000 being universally higher than female rates of 6.8 per 100 000 by an aggregate ratio of about 3.5 to 1 (WHO, 2001).

At a global level, over the last four decades, suicide mortality for males has increased by 7% and declined among females by 27%. Closer examination of age-specific suicide rates indicates that suicide mortality has increased among young males, and decreased among older males, whereas, for females, suicide mortality has reduced across all age groups (De Leo & Evans, 2004).

Figure 1

Map of suicide rates (per 100 000 persons) from most recent available data (March 2002)



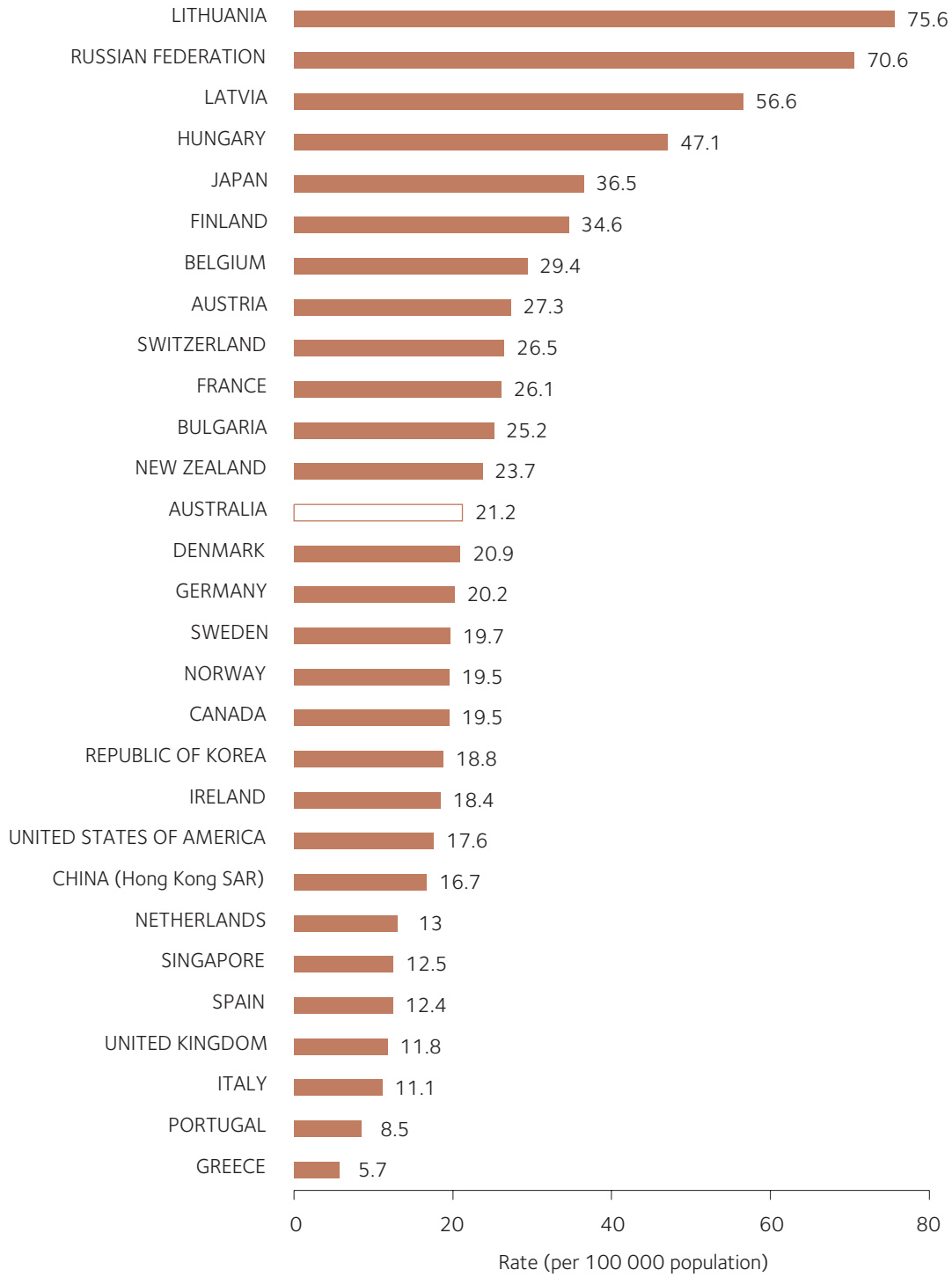
Source: WHO, 2004

Suicide rates for 2001 in 29 selected countries are presented for males (Figure 2) and females (Figure 3) (De Leo & Evans, 2004). While each country maintained relatively consistent rankings for male and female suicide rates, four of the five highest-ranking countries were located in the Eastern European region. A notable exception was Japan, which had rates comparable to the Eastern European countries and had considerably higher rates of suicide compared to other Asian countries – for both males and females. However Japan has also shown a steady decline in suicide rates in the past decades (De Leo & Evans, 2004).

In the same way, four of the five lowest-ranking countries were located in the Southern European region, with the additional country being the United Kingdom, which ranked third and fourth lowest for females and males respectively.

Figure 2

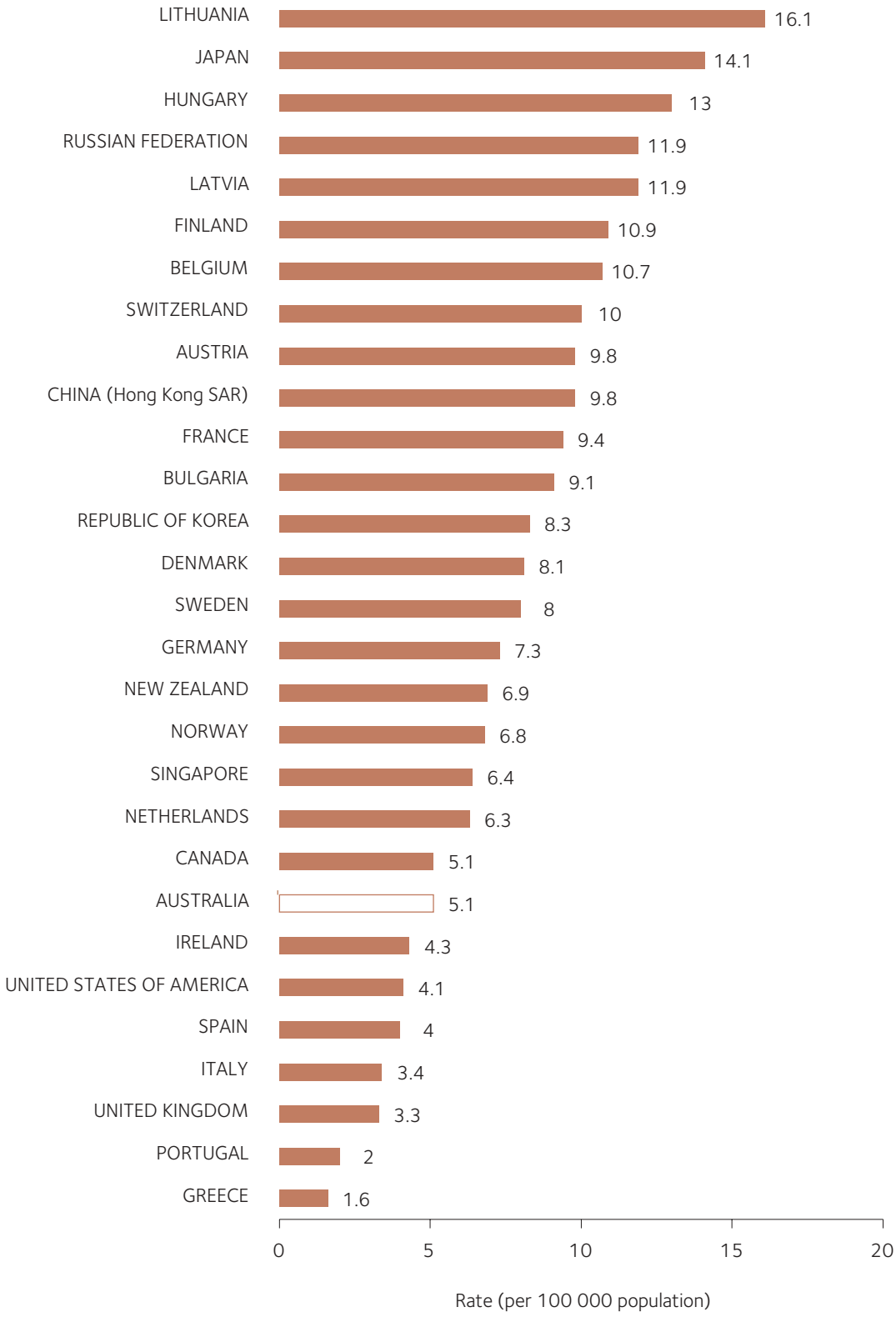
Suicide rates for males from selected countries, 2001



Source: De Leo and Evans, 2004

Figure 3

Suicide rates for females from selected countries, 2001



Source: De Leo and Evans (2004)

Table 6 shows the countries with highest and lowest sex ratios. Countries where male suicide rates were 4 to 6 times more frequent than female suicide rates were categorised as the 'highest' ratio countries, and countries where male mortality rates were less than 2 times more frequent than female suicide rates were categorised as 'lowest'. Australia was recognised as one of the 'highest ratio' countries, (ranked seventh overall), and the only countries with a male to female ratio less than two were China (incl. Hong Kong SAR) and Singapore.

Table 6

Selected countries with highest and lowest suicide sex ratio, 2001

Rank	Country	Male to female suicide rate ratio
1	Russian Federation	5.93
2	Latvia	4.76
3	Lithuania	4.70
4	United States of America	4.29
5	Ireland	4.28
6	Portugal	4.25
7	**Australia**	**4.16**
28	Singapore	1.95
29	China (inc Hong Kong SAR)	1.70

Source: De Leo and Evans, 2004

2.2 Australian trends

Approximately 2500 Australians die from suicide every year. Figure 4 shows crude suicide mortality rates for Australia, by gender over most of the past four decades. It shows a slow decline in mortality rates among both males and females for the first ten to fifteen years. This is followed by a steady increase in male mortality rates (by over 50% from 15.0 in 1975 to 23.3 per 100 000 in 1997), and a steady decline in the female mortality rates. During the last quarter of a century, suicide rates in Australian women have remained steady at 5 per 100 000. This steady rate accompanied by a decline in male mortality rates over the five years from 1997 to 2002 has contributed to the small decline in overall mortality rates for Australia over the past decades. Suicide mortality rates in Australia in 2002 stand at 11.8 deaths per 100 000 (18.8 among males and 5.0 among women), a 6% decrease from the rates in 2001, and a 19% decrease from the high rates of the 1990s. This decrease in overall rates is commensurate with recent declines experienced in most other western countries of the world, regardless of the existence of a national suicide prevention plan (De Leo, 2002).

Figures 5 to 11 show mortality rates for Australia from 1965 to 2002, by gender for each of the 10-year age groups until age 75 and above.

Mortality rates of persons aged 15–24 years (Figure 5) show a dramatic rate increase in males from 10.6 in 1965 to a high of 30.6 per 100 000 persons in 1997 (near 200% increase). This is in contrast with the slow decline in suicide rates for young females over the same period (6.4 in 1965 to 4.2 per 100 000 in 2002). Overall there has been an increase in suicide mortality from 8.5 to 11.8 per 100 000 (40%) for this young and volatile age group.

A similar trend has occurred in the 25–34 year age group (Figure 6), with a relatively rapid rise in male mortality rates (23.2 in 1965 to 30.9 per 100 000 in 2002) after a peak at 40.9 deaths per 100 000 in 1997. This is similarly accompanied by a decline in female mortality rates (until the mid 1970s followed by a steady and stable rate) for this age group, from 13.3 per 100 000 in 1965 to 7.1 in 2002 – a near halving of the rates in 37 years.

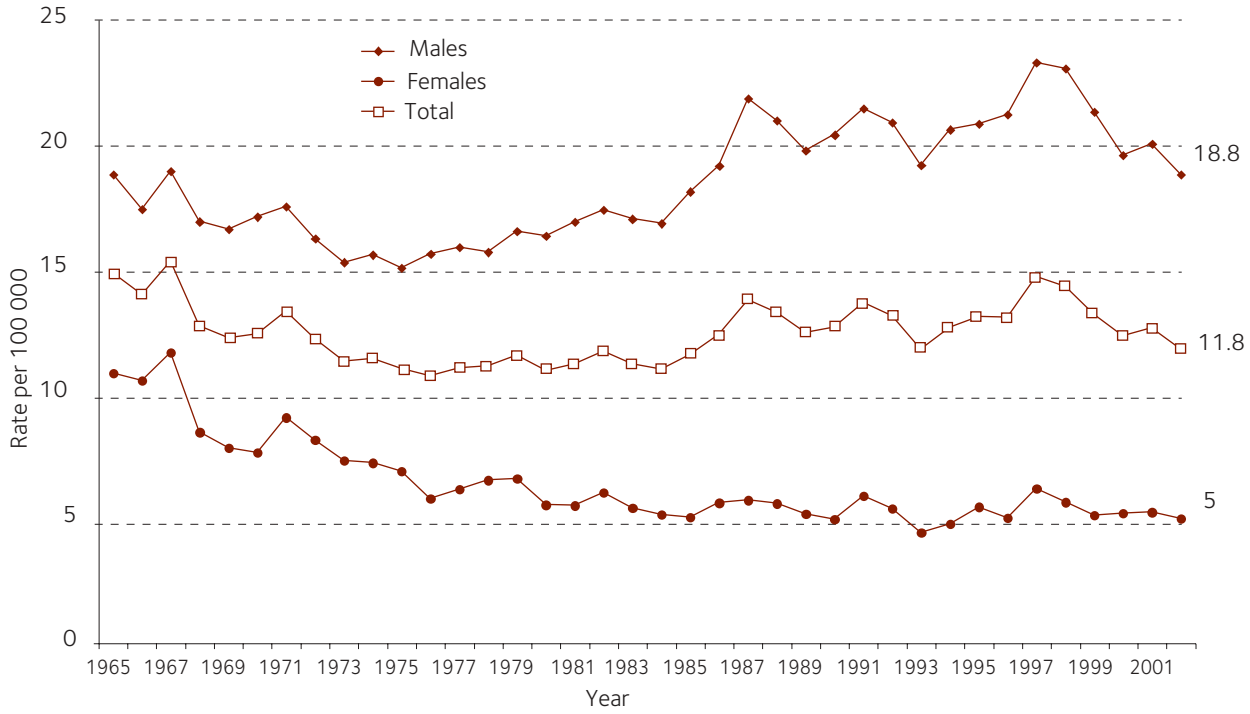
Figure 7 shows the rate of suicide among males and females, aged 35–44 years. For this age group, among both the males and females, there has been a steady decline in mortality rates from the high rates of the mid 1960s (31.3 for males and 21.3 per 100 000 for females in 1967) through until the mid 1980s. From this point in time, the male mortality rates have tended to increase, though erratically, to a high of 33.8 per 100 000 in 1998. A subsequent slight decline from 1998 over the past four years has resulted in a male mortality rate of 29 per 100 000 in 2002. The female rate of suicide for this age group fell by over 70% from its peak in 1967 (21.3 per 100 000) to 6.1 in the 1980s, after which it remained low for the remaining years (8.1 per 100 000 in 2002).

The suicide mortality rates among the remaining age groups have similarly declined, among both males and females from the excessive rates of the mid 1960s (Figures 8–11). The smaller absolute numbers of deaths in increasing age groups make the reductions in rates more erratic, but the overall trend persists in all age groups. Mortality rates among those aged 75 years and over, were halved from the mid 1960s to 2002, among both males and females.

The overall rates of suicide deaths for males of all ages during this entire period remained relatively unchanged at 18.8 per 100 000 in 1965 and in 2002. The overall rate of suicide for females of all ages, on the other hand, decreased by over 50% from 10.8 to 5.0 per 100 000 over the same period – contributing to an overall decline (of 20%) in suicide mortality in Australia from 14.8 in 1965 to 11.8 per 100 000 in 2002. The decline of crude mortality rates for Australia from 2001 to 2002 was a modest 6%.

Figure 4

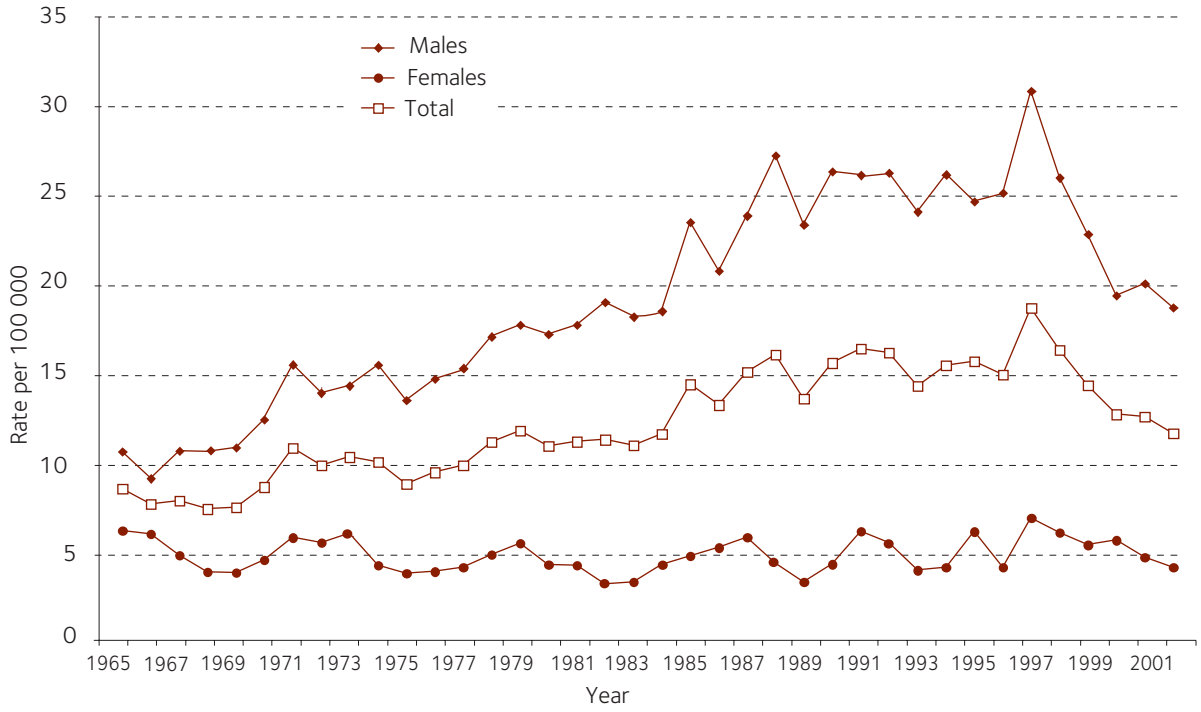
Suicide mortality rates by year and sex, Australia, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 5

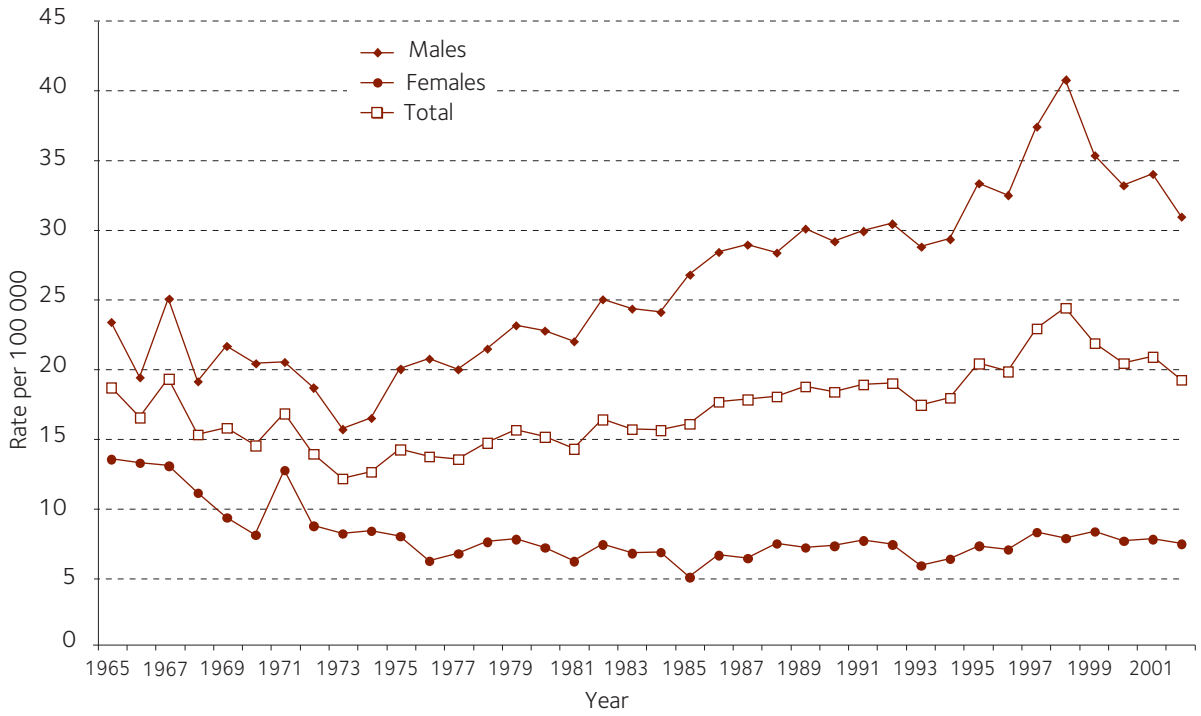
Suicide rates among 15–24 year olds, Australia, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 6

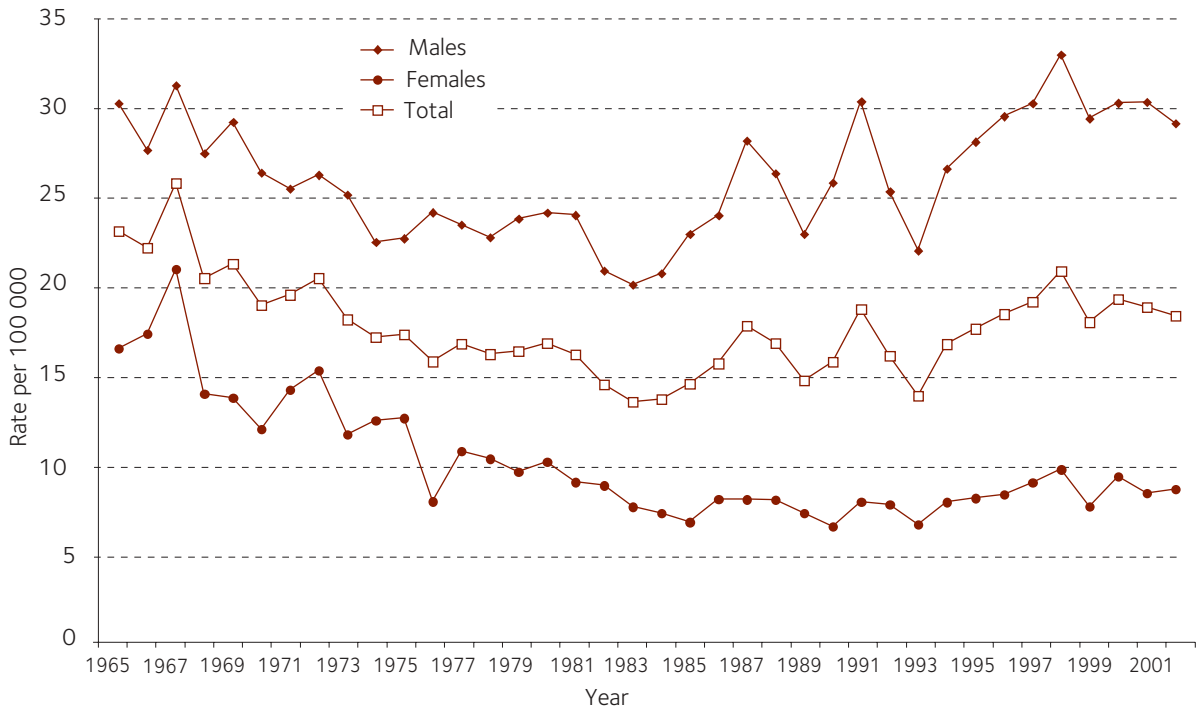
Suicide rates among 25–34 year olds, Australia, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 7

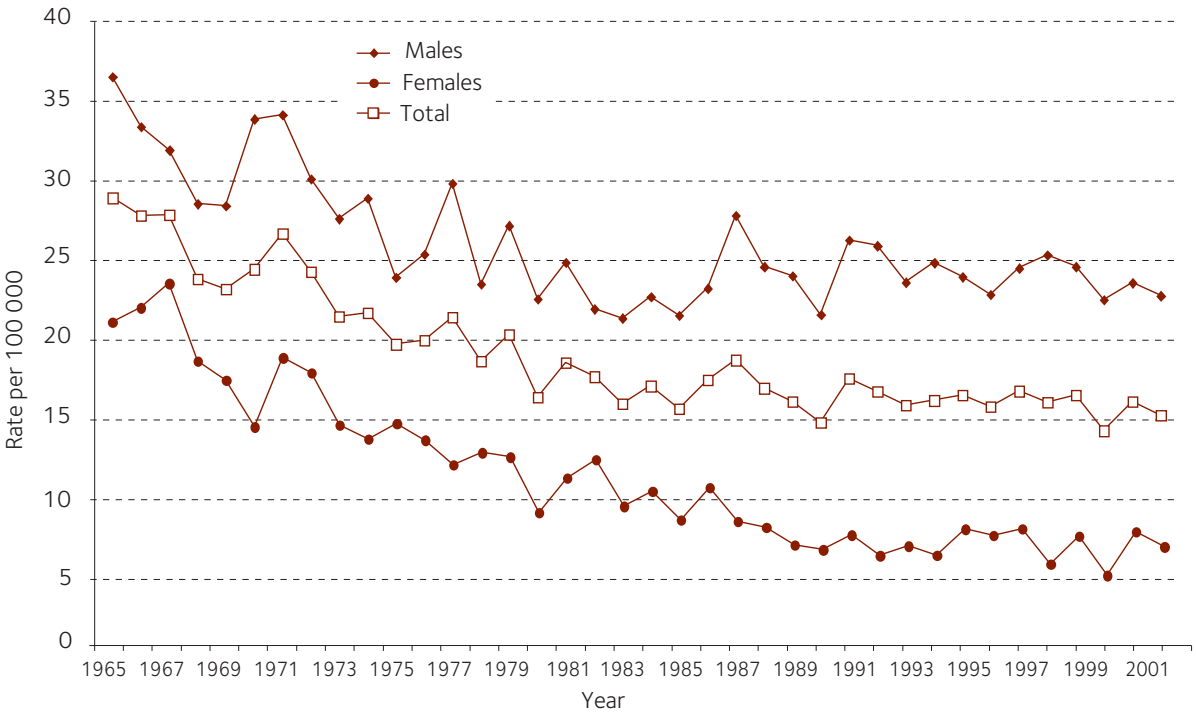
Suicide rates among 35–44 year olds, Australia, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 8

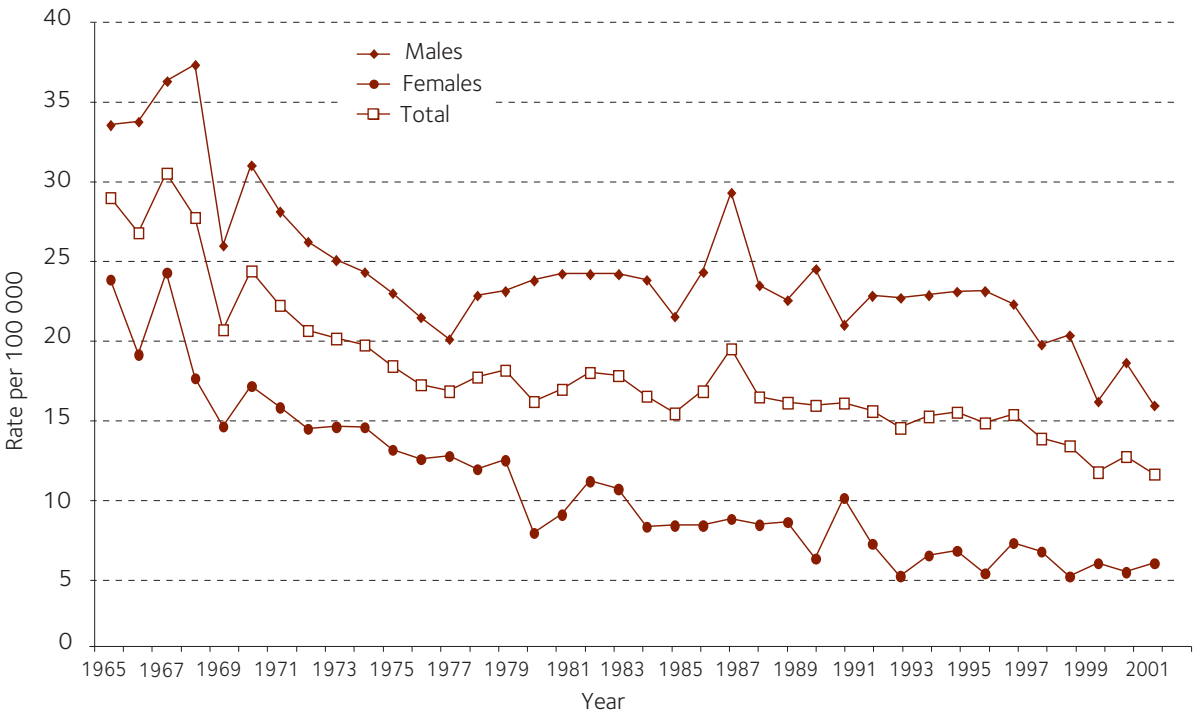
Suicide rates among 45–54 year olds, Australia, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 9

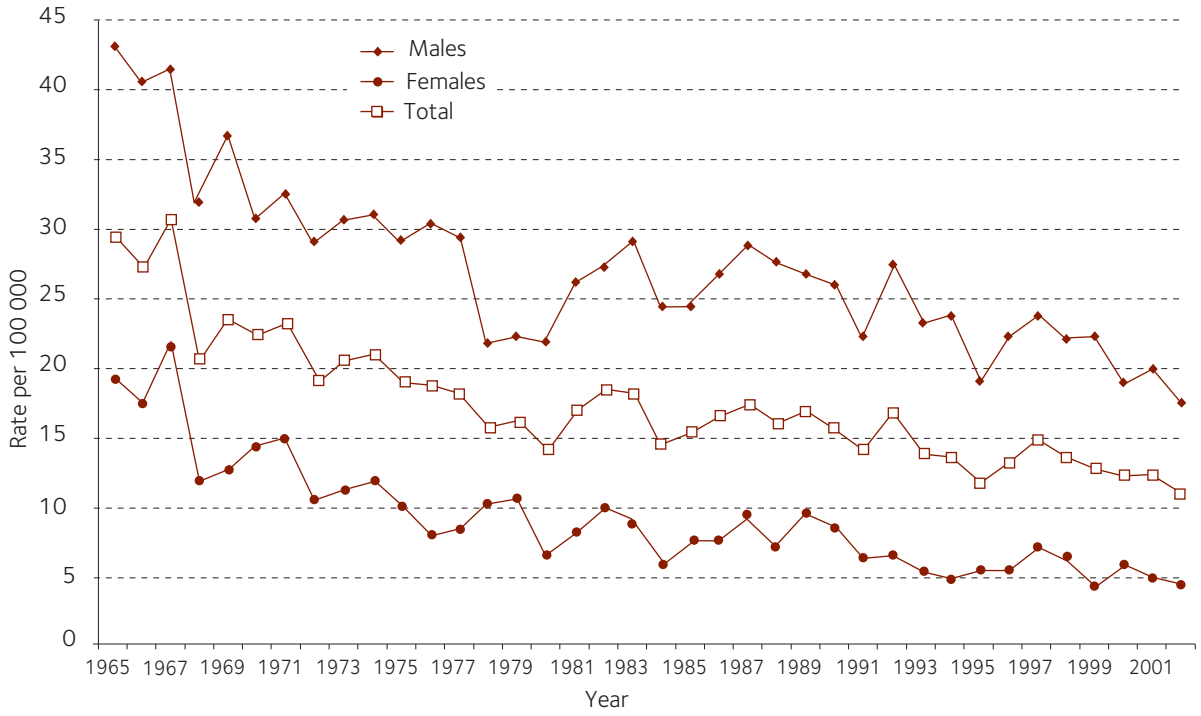
Suicide rates among 55–64 year olds, Australia, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 10

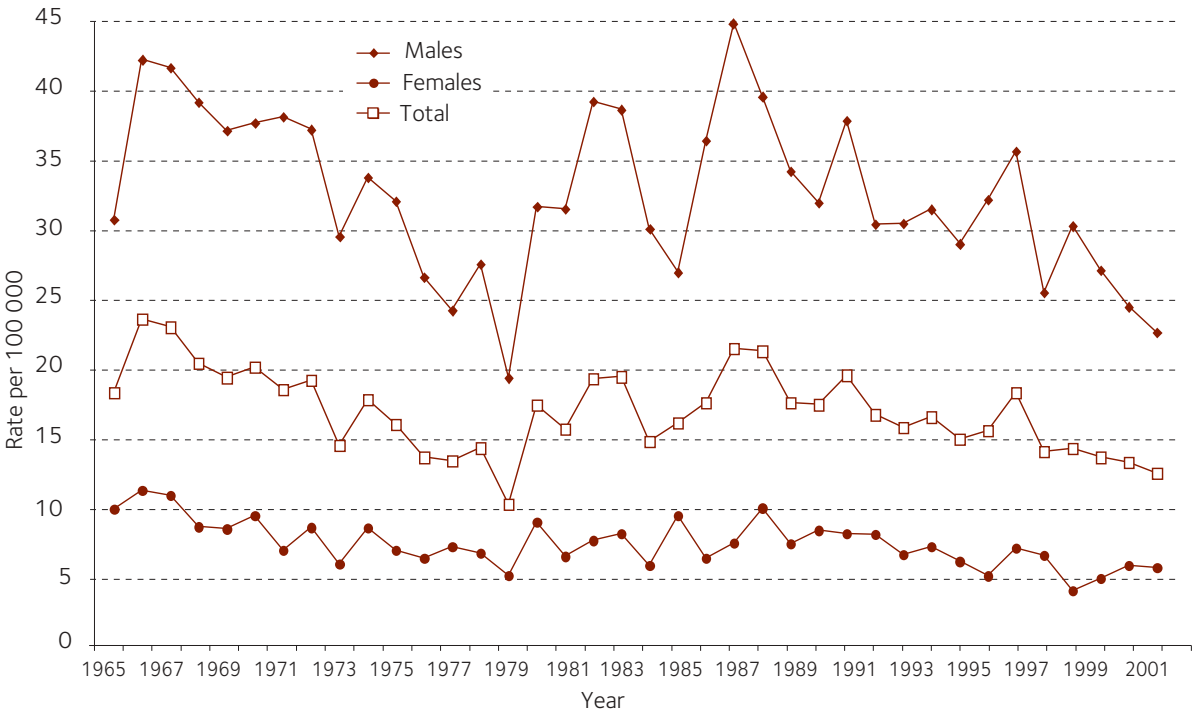
Suicide rates among 65-74 year olds, Australia, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 11

Suicide rates among 75+ year olds, Australia, 1965–2002



Source: Australian Bureau of Statistics, 2004

2.3 Queensland trends (ABS figures)

Figure 12 shows crude suicide mortality rates for Queensland, by gender, over most of the past four decades.

In Queensland, between 1965 and 2002, overall trends in the crude suicide rates for males and females are comparable to national trends. As with the Australian trend, the Queensland trend indicates a slow decline in mortality rates among both males and females for the first ten to fifteen years, followed by a steady increase in male mortality rates (by over 70% from 15.5 in 1972 to 26.9 per 100 000 in 1996), and female mortality rates that remain relatively low and stable. The overall rates of suicide in Queensland were consistently around 20% higher than the national rates over the past four decades, among males and females. The decline in male mortality rates over the five years from 1996 to 2001 has contributed to a 20% reduction in overall mortality rates for Queensland over the past decades. Suicide mortality rates in Queensland in 2002 stood at 14.5 deaths per 100 000 (23.4 among males and 5.6 among women), a 5% increase from the rates in 2001 and a 15% decrease from the high rates of the 1990s.

Figures 13 to 19 show suicide mortality rates for Queensland from 1965 to 2002, by gender for each of the ten-year age groups until age 75 and above. Mortality rates of persons aged 15-24 (Figure 13) in Queensland show a dramatic rate increase for males from 10.0 in 1965 to a high of 39.4 per 100 000 in 1996 (near 300% increase), similar to the national trend for young males. This is in contrast with the steady suicide rates for young females over the same period (5.5 in 1965 vs. 5.8 per 100 000 persons in 2002), ranging from 1.6 to 10.0 per 100 000 in the 1970s. Overall, there has been a doubling of mortality rates in Queensland from 7.6 in 1965 to 16.3 per 100 000 in 2002 for this young age group.

A similar but less dramatic trend is seen in the 25–34 year age group (Figure 14), with a relatively rapid rise in male mortality rates (27.0 in 1965 to 36.4 per 100 000 in 2002) after a peak at 47.9 deaths per 100 000 in 1998. This is similarly accompanied by a steady decline in female mortality rates for this age group, from 13.9 per 100 000 in 1965 to 9.5 in 2002; a 32% decline in the rates from 1965. Overall, mortality rates for this age group have risen slightly, from 20.7 in 1965 to 22.7 per 100 000 persons in 2002.

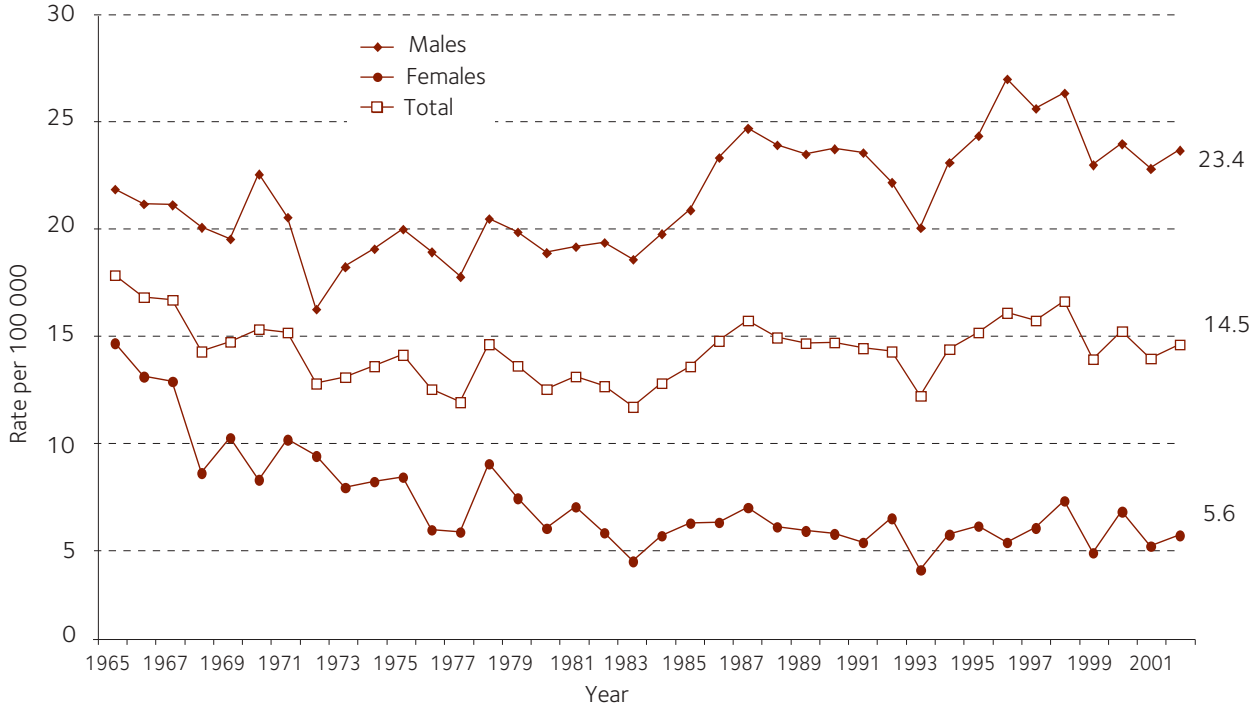
Figure 15 shows mortality rates of persons aged 35–44 years in Queensland. For this age group, among both the males and females, there has been a progressive decline in mortality rates from the high rates of the late 1960s (39.9 for males and 24.8 per 100 000 for females) until the mid 1980s. From this period onwards, male mortality rates have tended to increase gradually from 24.1 in 1984 to a high of 39.1 per 100 000 in 2002. The rate of suicide for females for this age group hovered at about ten deaths per 100 000 until the present (9.9 per 100 000 in 2002).

Since the mid to late 1960s, the mortality rates among the remaining age groups have similarly declined, among both males and females. The declining numbers of people and the smaller numbers of deaths in these older groups appears to have contributed to a more erratic decline in mortality rates. Among males aged 65 to 74 years (Figure 18), for instance the mortality rates range from a high in 1969 of 44.4 to a low in 1995 of 14.2 per 100 000, a fall in rates of 70%. Similarly, in the age group 75 years and over, 10 suicides in 1970 realised a rate of 17.4 per 100 000, and with an additional seven deaths the following year, the rate nearly doubled to 29.4 per 100 000. Therefore, the rates representative of these older age groups must be interpreted with caution.

As with the Australian overall suicide mortality trend, the overall suicide rates of Queensland declined moderately, from 18.1 in 1965 to 14.4 in 2002. The slight increase of rates from 21.5 to 23.4 per 100 000 among males was counterbalanced by the sharp drop from 14.7 to 5.6 per 100 000 among females.

Figure 12

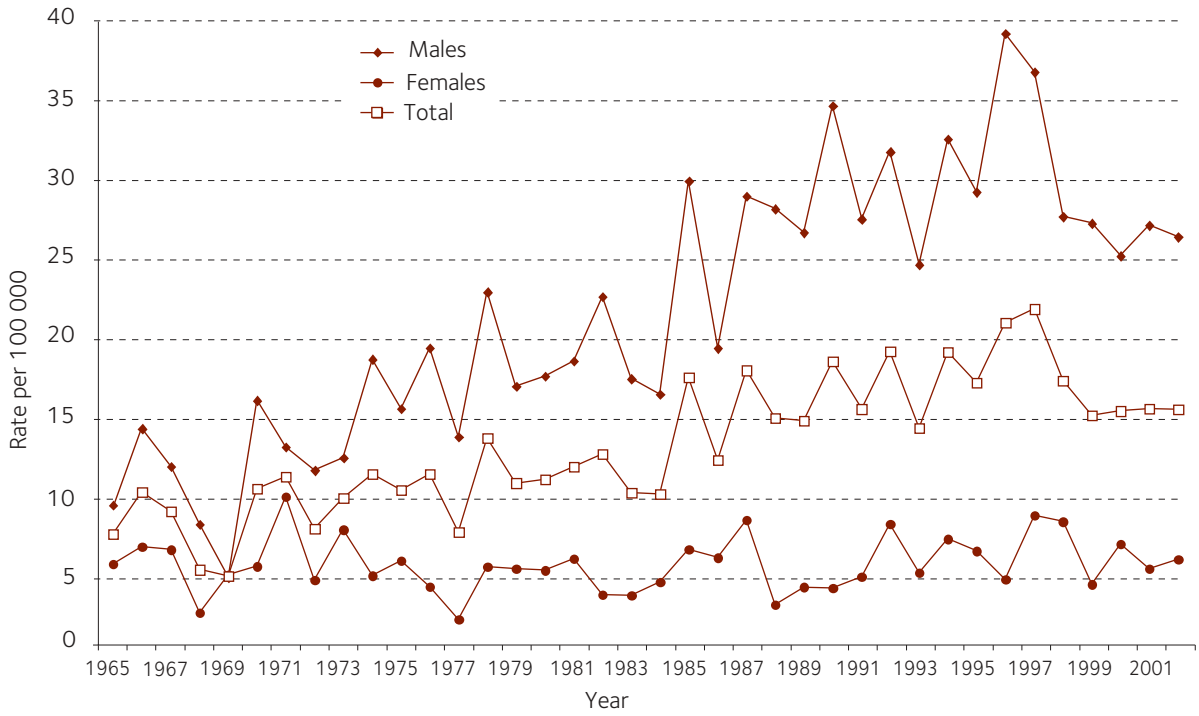
Suicide mortality rates by gender, Queensland, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 13

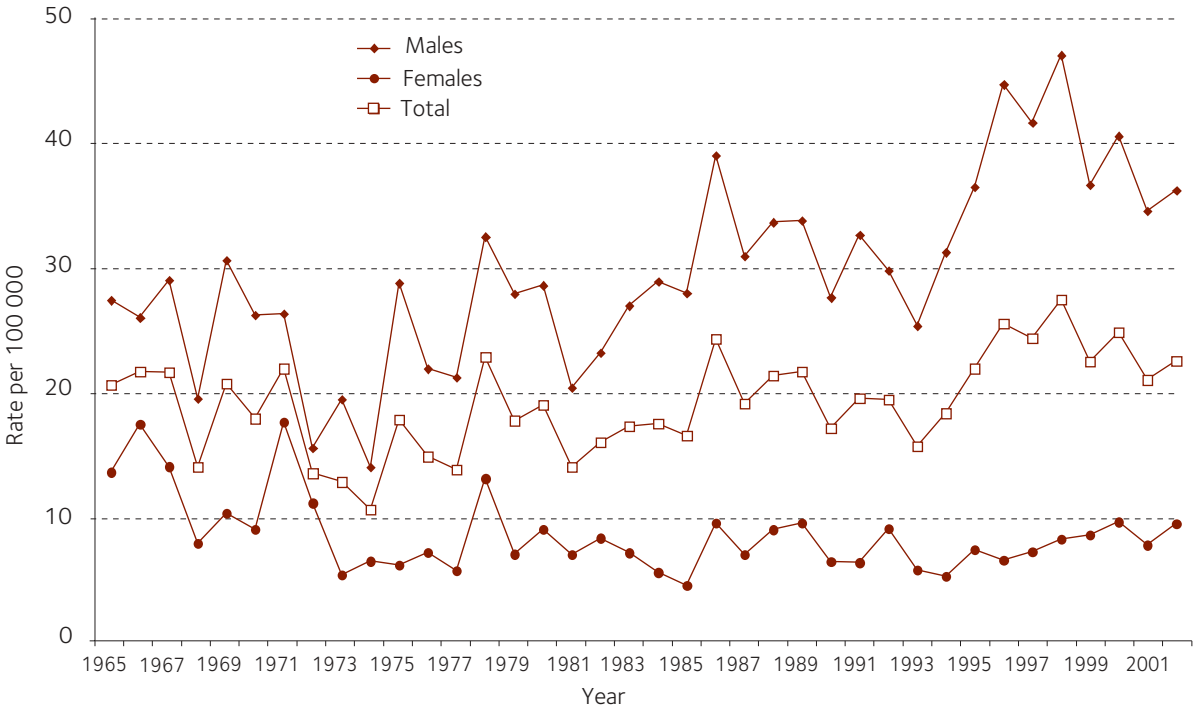
Suicide rates among 15–24 year olds, Queensland, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 14

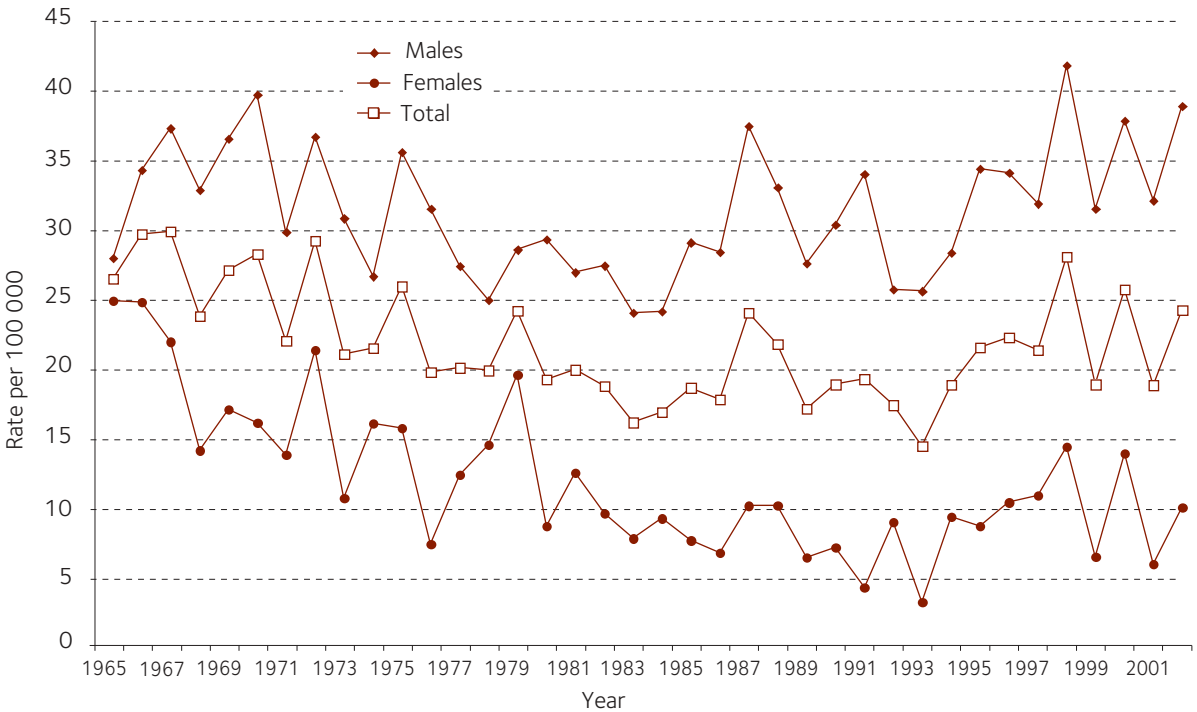
Suicide rates among 25–34 year olds, Queensland, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 15

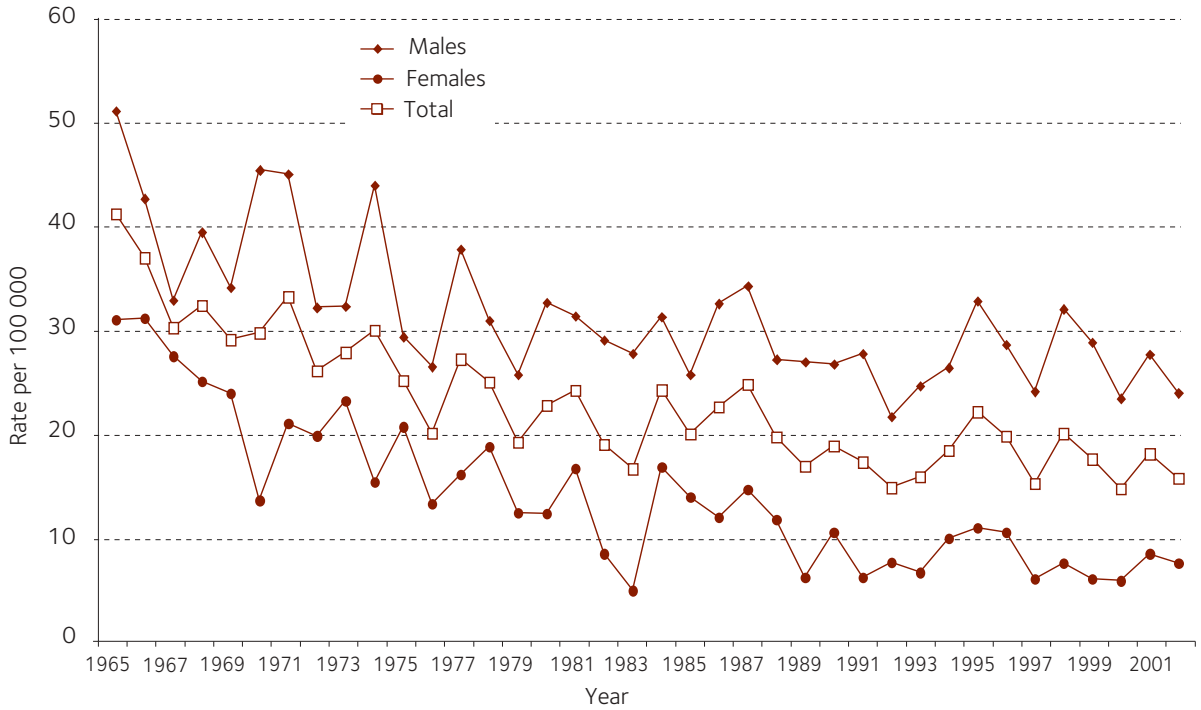
Suicide rates among 35–44 year olds, Queensland, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 16

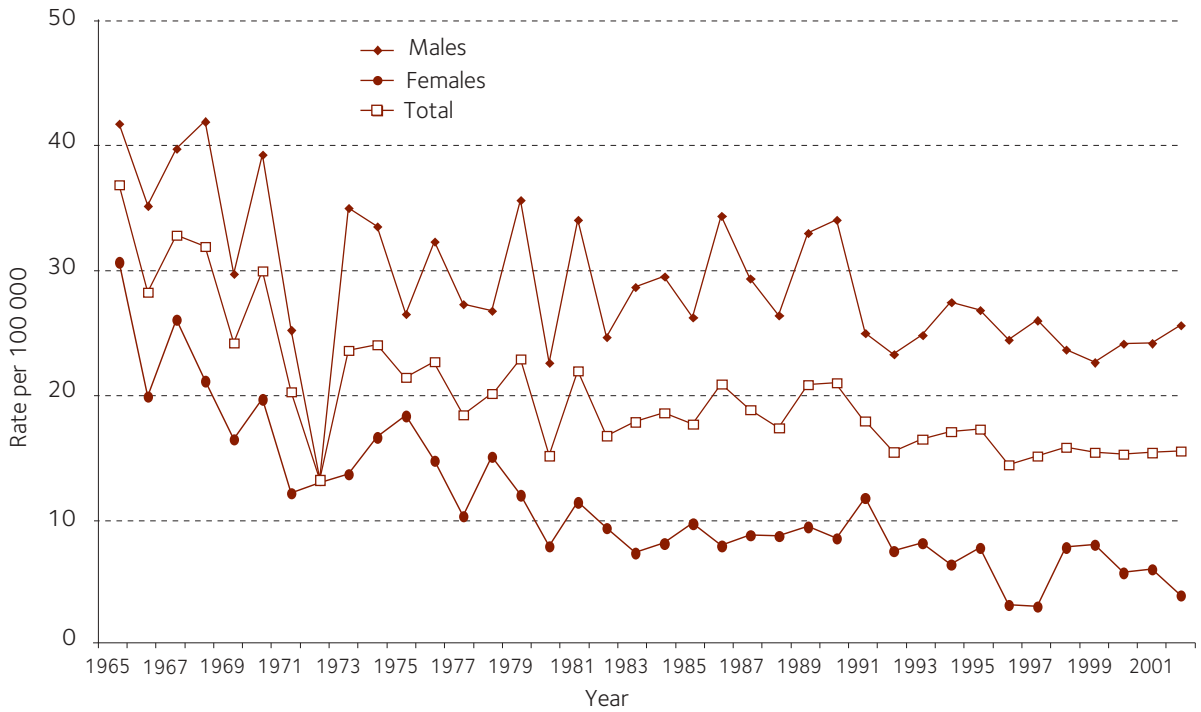
Suicide rates among 45–54 year olds, Queensland, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 17

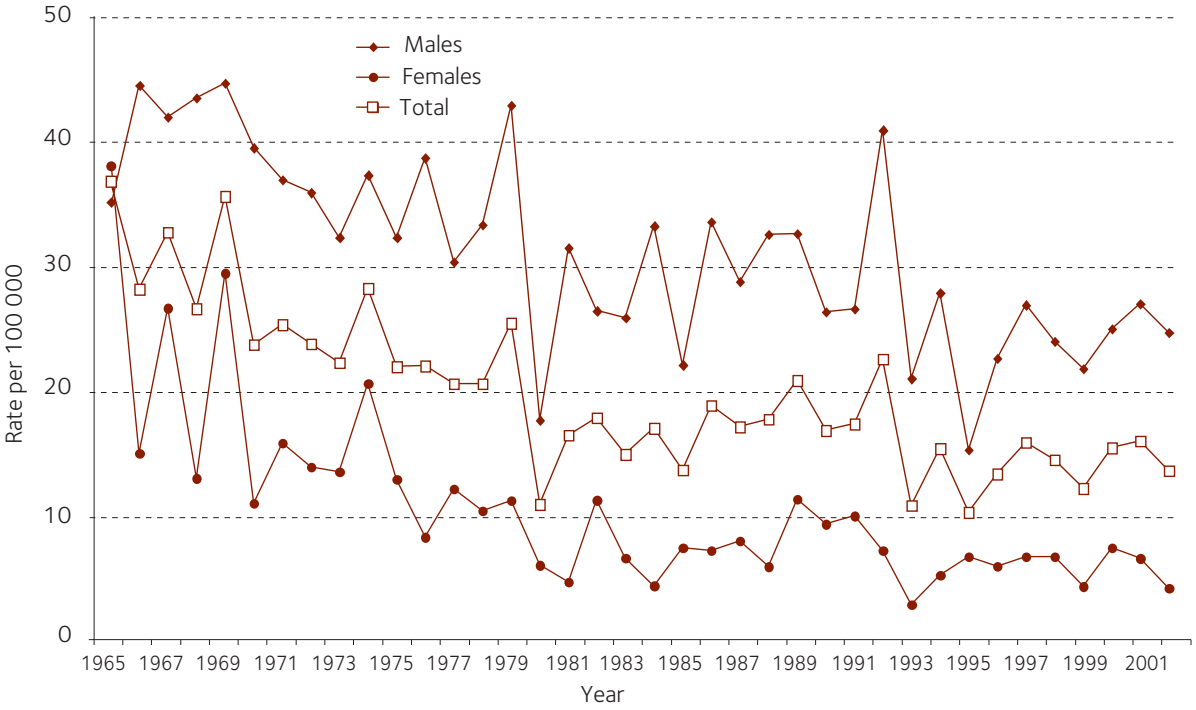
Suicide rates among 55–64 year olds, Queensland, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 18

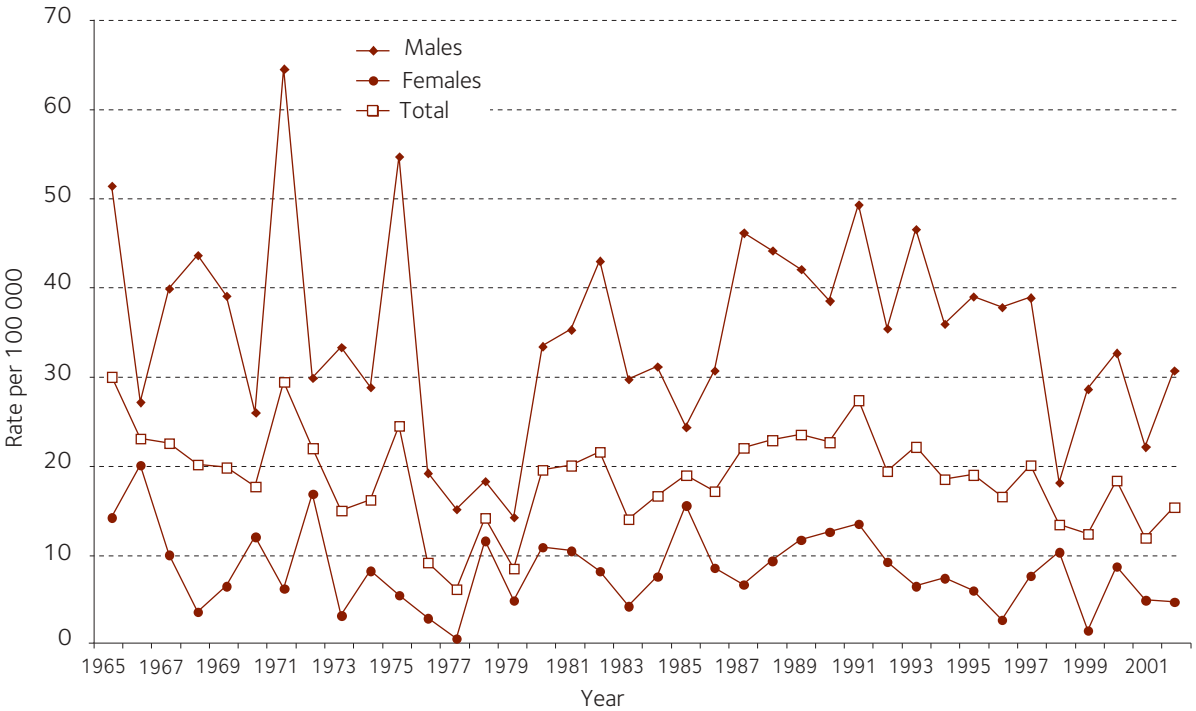
Suicide rates among 65–74 year olds, Queensland, 1965–2002



Source: Australian Bureau of Statistics, 2004

Figure 19

Suicide rates among 75+ year olds, Queensland, 1965–2002



Source: Australian Bureau of Statistics, 2004

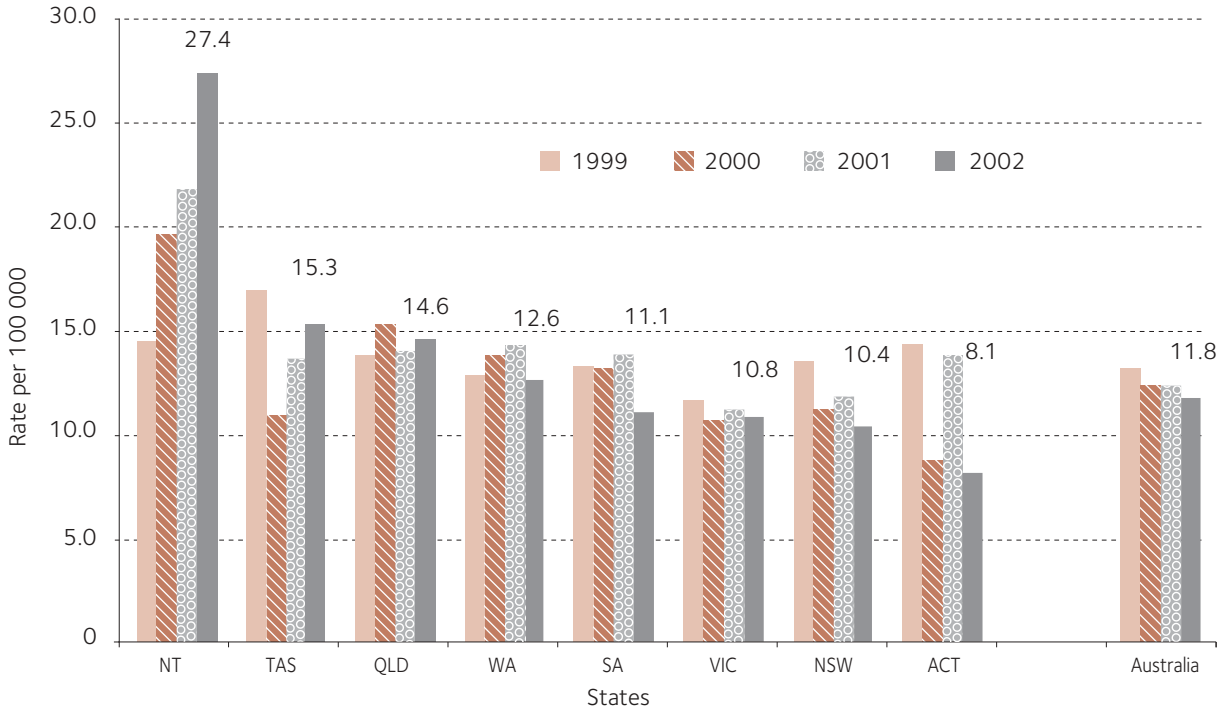
2.4 State and territory comparisons

Figure 20 shows age standardised suicide mortality rates of Australia and its states and territories for the years 1999 to 2002 in descending order, of rates for the year 2002. The rates have been standardised to the Australian mid-year population of 2001. Northern Territory shows the highest mortality rate in 2002 of 27.4 per 100 000 and ACT, the lowest at 8.1 per 100 000.

Northern Territory's mortality rate has nearly doubled in the last four years. Unlike Tasmania and the two Territories, Australia's larger states have had only minor fluctuations in the suicide rate over the four-year period. Australia's overall rate of 11.8 per 100 000 in 2002 is therefore a composite of the high rates of the smaller states like Tasmania (15.3 per 100 000) and the Territories, NT (27.4) and ACT (8.1 per 100 000) - and of the more stable rates of the remaining large States.

Figure 20

Mortality rates* of Australia and its States and Territories, 1999–2002



Source: ABS 2004

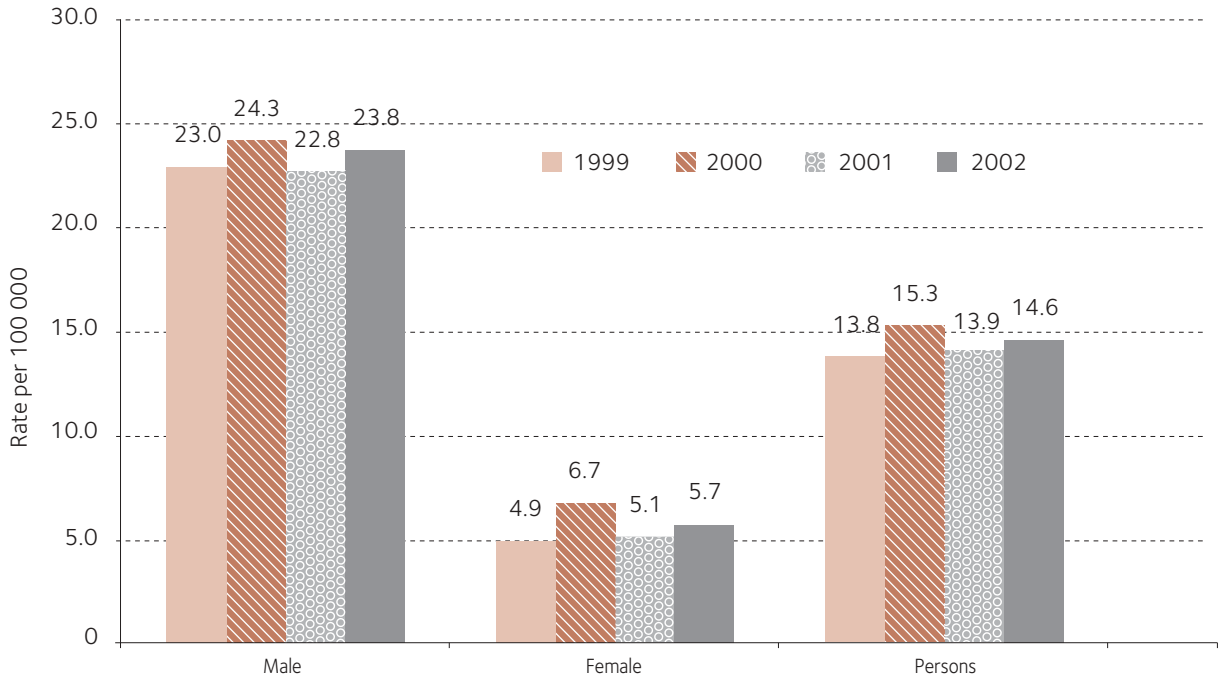
* Standardised rates for 2002 are shown

Queensland's mortality rate in 2002 of 14.6 deaths per 100 000 is slightly higher than its rate in 2001 and 1999, but lower than the rate in 2000. In 2002, Queensland had the 3rd highest overall rate of suicide in Australia. In addition, among the larger states of WA, SA, VIC and NSW, Queensland had the higher rates during most of the four-year period. Queensland's rate of 14.6 per 100 000 in 2002 was about 20% higher than the Australian average of 11.8 per 100 000, and has been consistently higher than the Australian rate for over ten years.

Figure 21 shows Queensland's mortality rates for the individual years from 1999 to 2002. Small variations within the male and female rates can be observed, as well as a consistent wide gap between the genders over these years.

Figure 21

Mortality rates for Queensland for years, 1999–2002

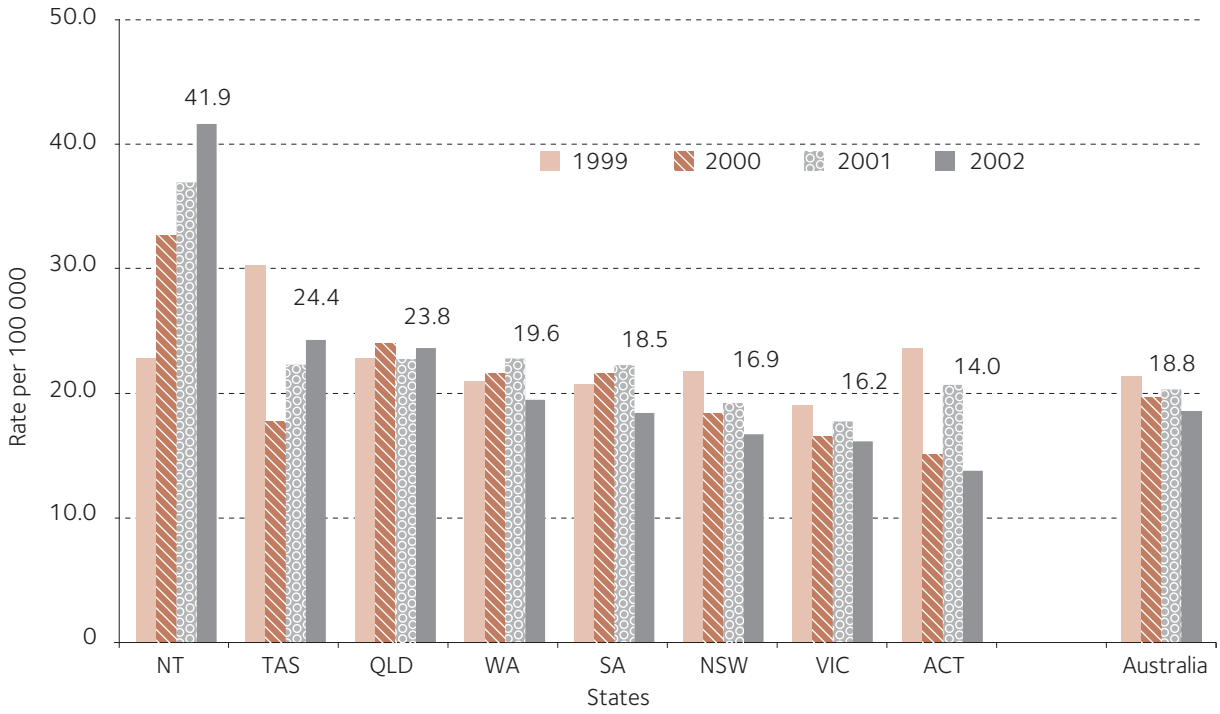


Source: ABS 2004

Figures 22 and 23 show the distribution of standardised mortality rates in Australia, and the states and territories by gender. In all of the states and territories male mortality rates exceed female rates by about four-to-one. The rates of the larger states (NSW, VIC, QLD, SA, WA) are relatively more stable, fluctuating within a smaller margin than Tasmania and the territories.

Figure 22

Mortality rates of males, Australia and its states and territories, 1999–2002

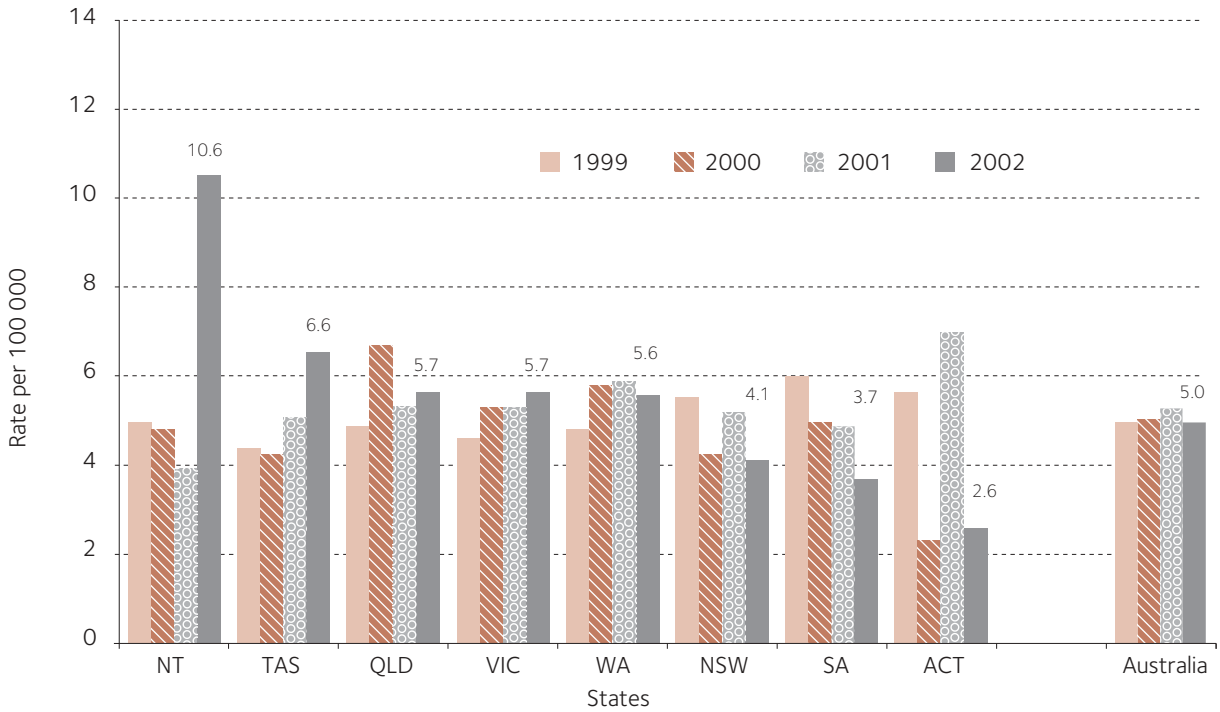


Source: ABS 2004

Note: Rates for 2002 are shown

Figure 23

Mortality rates of females, Australia and its states and territories, 1999–2002



Source: ABS 2004

Note: Rates for 2002 are shown

Table 7 shows the detailed age standardised rates for each state and territory, by gender for the years 1992 to 2002. The Queensland age standardised suicide rate has been greater than the Australian rate for every year represented in this table. Equally remarkable, is the fluctuations in suicide rates amongst the states and territories where there are smaller populations. For example, the female suicide mortality rate in the Northern Territory jumped from 3.8 per 100 000 in 2001 to 10.6 per 100 000 in 2002 – a near three-fold increase in the suicide rate. However, there were only five additional suicides in the year that accounted for this dramatic increase.

Table 7

Age standardised* suicide rates by gender, for states and territories, 1992–2002

Year	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Males									
1992	20.3	20.7	22.3	22.7	20.8	32.9	25.1	19.6	21.3
1993	19.3	18.3	20.8	18.5	21.0	29.2	26.9	13.4	19.6
1994	21.4	18.3	23.6	19.5	22.2	28.3	17.9	16.3	21.0
1995	19.8	19.9	24.8	22.2	20.4	21.8	23.7	23.7	21.1
1996	21.8	17.4	27.1	21.2	19.4	24.5	29.6	16.7	21.5
1997	23.1	23.5	25.9	22.2	23.2	18.0	36.3	17.8	23.6
1998	22.6	19.4	26.6	26.9	25.9	21.7	35.4	20.1	23.2
1999	22.0	19.2	23.0	20.8	21.2	30.6	23.0	23.8	21.6
2000	18.6	16.6	24.3	21.7	21.8	18.0	33.0	15.2	19.8
2001	19.0	17.5	22.8	22.6	22.6	23.1	37.4	21.1	20.3
2002	16.9	16.2	23.8	18.5	19.6	24.4	41.9	14.0	18.8
Females									
1992	4.9	5.0	6.5	6.7	5.4	8.4	3.5	3.6	5.4
1993	4.5	4.1	4.1	4.6	5.3	7.1	5.7	2.8	4.5
1994	5.0	4.9	5.8	4.0	3.5	3.0	8.2	5.6	4.8
1995	5.6	5.6	6.3	5.2	4.5	6.8	5.9	2.1	5.5
1996	5.0	4.8	5.4	4.3	5.3	4.1	7.8	7.1	5.1
1997	7.1	6.1	5.9	4.6	5.6	4.6	5.1	8.0	6.2
1998	4.9	5.6	7.2	5.7	5.8	4.1	7.0	1.9	5.6
1999	5.5	4.6	4.9	6.0	4.8	4.4	5.0	5.7	5.1
2000	4.3	5.3	6.7	5.0	5.8	4.3	4.8	2.3	5.2
2001	5.1	5.3	5.1	4.9	5.9	5.2	3.8	7.0	5.3
2002	4.1	5.7	5.7	3.7	5.6	6.6	10.6	2.6	5.0
Total									
1992	12.4	12.6	14.3	14.6	13.1	20.4	15.2	10.9	13.2
1993	11.7	11.0	12.1	11.4	13.1	18.1	16.6	8.1	11.9
1994	12.9	11.4	14.5	11.6	12.8	15.2	14.2	10.9	12.8
1995	12.5	12.5	15.4	13.5	12.4	14.2	16.0	12.1	13.1
1996	13.2	10.9	16.1	12.5	12.3	13.8	19.6	11.9	13.1
1997	14.9	14.5	15.7	13.2	14.2	11.1	21.5	12.8	14.7
1998	13.6	12.4	16.8	16.3	15.7	12.7	22.1	10.4	14.3
1999	13.5	11.7	13.8	13.3	12.8	17.0	14.5	14.4	13.2
2000	11.2	10.7	15.3	13.2	13.8	11.0	19.7	8.7	12.3
2001	11.9	11.2	13.9	13.7	14.2	13.8	21.6	14.0	12.6
2002	10.4	10.8	14.6	11.1	12.6	15.3	27.4	8.1	11.8

* Standardised death rate per 100 000 of the mid-year 2001 population.

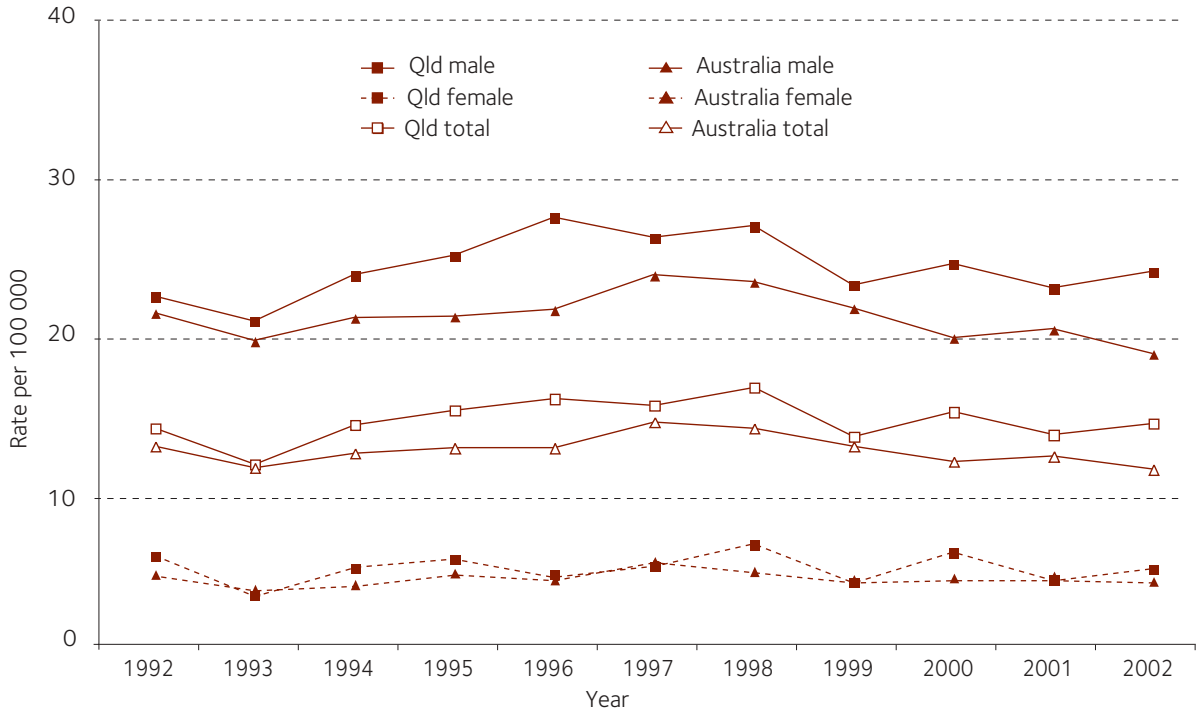
^ State or Territory of usual residence

Source: ABS Suicides 1992 - 2002

Figure 24 show the standardised suicide mortality rates for Queensland and Australia for both males and females for the years from 1992 to 2002. A consistent pattern can be observed of higher suicide rates for Queensland by about 15 to 20% over the decade, which is due entirely to higher rates among Queensland's males. An examination of the difference between Queensland's and Australia's rates by age group (Table 8) shows that the higher mortality rates among Queensland males occurs across all ages but especially among the younger age groups.

Figure 24

Standardised* mortality rates of Queensland and Australia, by gender, 1992–2002



*Standardised to the mid-year population, 2001

Source: ABS 2004

Table 8

Suicide rates by age and gender for Queensland and Australia, 1992–2002

	Males		Females		Total	
	Australia	QLD	Australia	QLD	Australia	QLD
15-24	20.6	25.8	5.3	5.3	13.1	15.8
25-34	33.9	37.2	7.6	8.7	20.8	22.9
35-44	29.9	33.8	8.0	9.9	18.9	21.1
45-54	23.4	26.5	7.5	6.4	15.8	16.5
55-64	18.8	21.7	5.4	6.5	12.1	14.3
56-74	20.5	23.9	5.1	5.5	12.5	14.5
75+	27.3	27.7	4.7	4.6	13.5	13.9
All Ages	20.2	24.7	5.2	5.9	12.7	14.2

Source: ABS Suicides 1992–2002

3. Suicides in Queensland, 1999–2001: an overview (QSR data)

A total of 1494 suicides by Queensland residents were registered in the Queensland Suicide Register for the period 1999–2001 (see Table 5). The age of the deceased was not known for four deaths (all males), and these cases have only been included in the 'all ages' categories. Mortality rates were calculated using the number of deaths registered in the QSR and the population of Queensland, as reported in the 2001 Census (ABS, 2002).

3.1 Mortality rates by age and gender

Of 1494 suicides, 1188 (79.5%) of them were males and 306 (20.5%) were females, resulting in a gender ratio of 3.8:1 (Figure 25). The mean age at death was 40.9 years (95% Confidence Interval 40.0 – 41.7), with a range from 10 to 89 years of age. Over 40% of suicide deaths, among both males and females occurred before age 34 years (see Figure 26).

Figure 25

Gender ratio of suicides, Queensland, 1999–2001

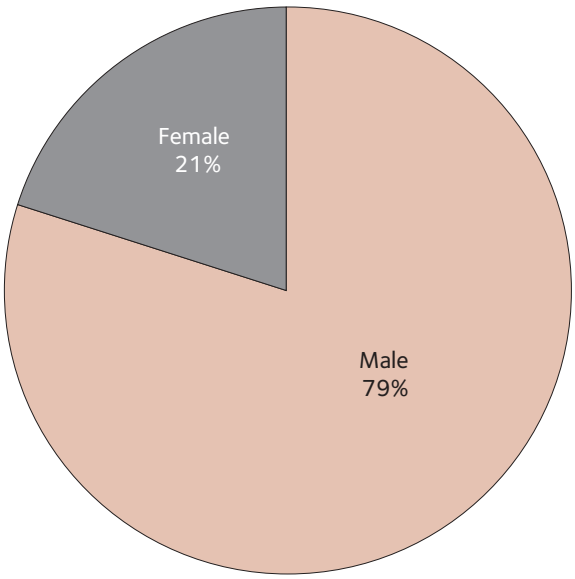
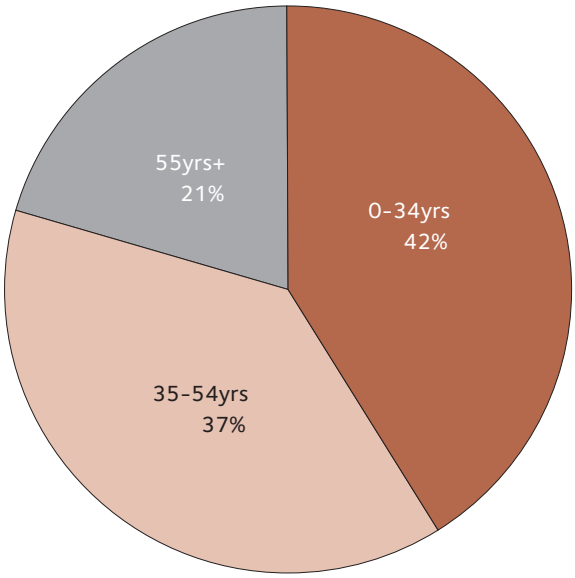


Figure 26

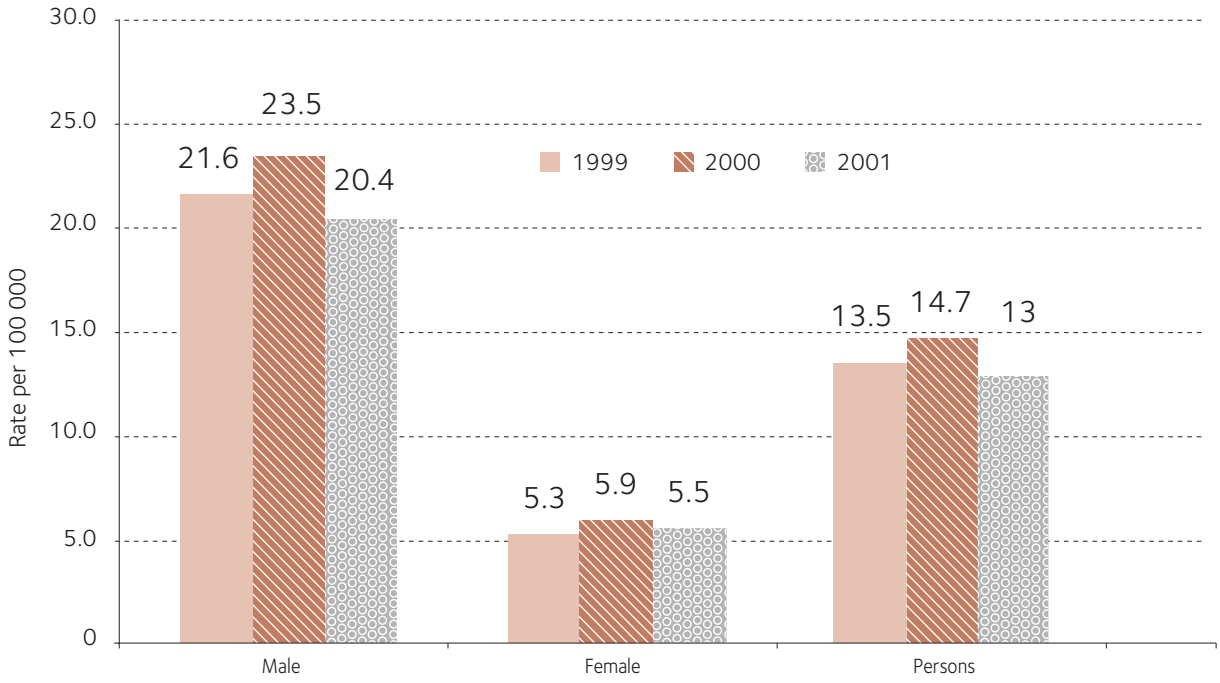
Proportion of all suicides by broad age group, Queensland, 1999–2001



During the period 1999 to 2001 the overall suicide rate for Queensland was 13.7 per 100 000 – 21.8 per 100 000 for males and 5.6 per 100 000 for females. Figure 27 shows the mortality rates for males and females, for each of the three years from 1999 to 2001. A fall in overall rates to 13.0 per 100 000 in 2001 can be observed, and is most likely due to a 13% fall in the male mortality rate from 2000 to 2001. There were small variations among the male and female rates from 1999 to 2001 but the wide four-fold difference persisted.

Figure 27

Mortality rates of males, females and overall for Queensland, 1999–2001

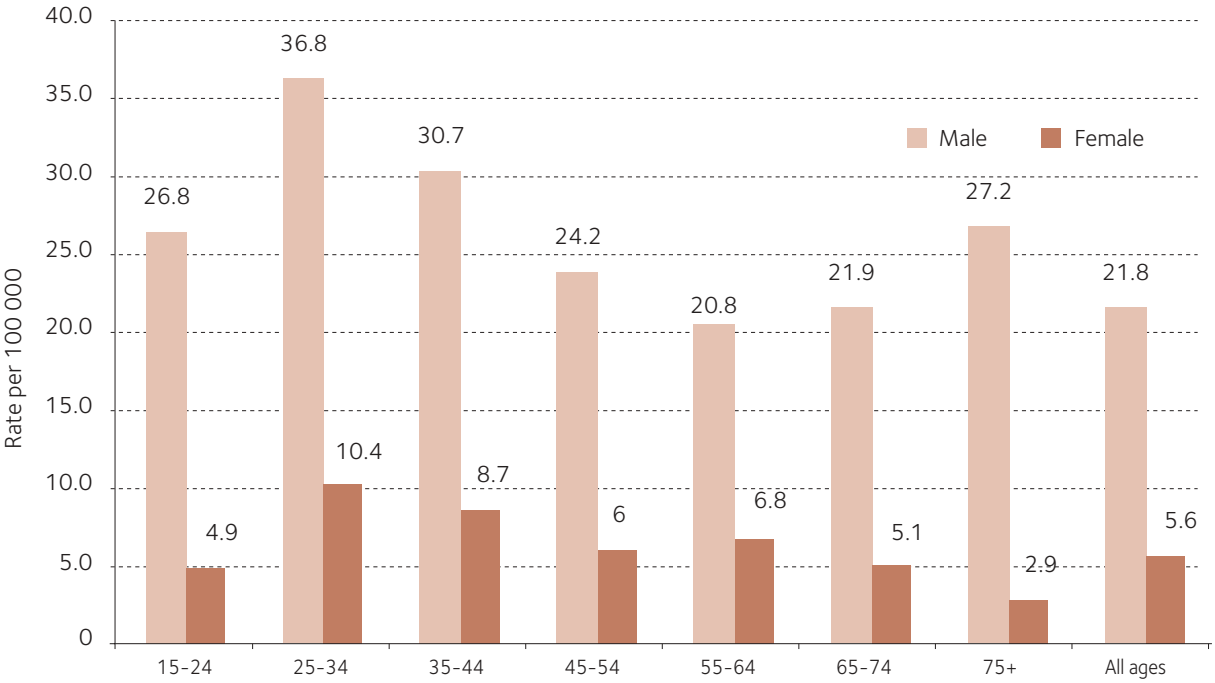


Source: Australian Institute for Suicide Research and Prevention, 2004

Figure 28 shows mortality rates by age group and gender, for the years 1999–2001. The highest suicide rates were witnessed in the 25–34 and 35–44 year age groups for both males (36.8 and 30.7 per 100 000) and females (10.4 and 8.7 per 100 000 persons). Suicide rates among females declined steadily after the peak in those aged 25–34 years. Male rates similarly declined after the peak among those aged 25–34 years, but resurged at age 75 years and over to 27.2 per 100 000 – a suicide rate higher than that of young 15–24 year old males.

Figure 28

Mortality rates of males and females and gender ratios for Queensland, 1999–2001



Source: Australian Institute for Suicide Research and Prevention, 2004

The wide gap between male and female suicide rates was evident across all age groups, with the suicide mortality gender ratio of 3.9 across all ages. However, the disparity between the genders was most apparent in the 75 years and older age group, where the male to female suicide ratio is 9.2: 1. It must be remembered, however, that the small absolute numbers involved in these age groups can make the rates more volatile.

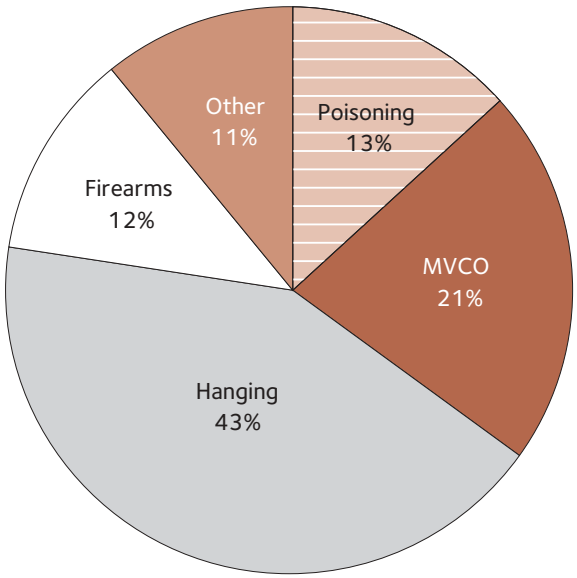
An analysis of mortality rate changes between 1999 and 2001 individually within each age group and gender was carried out to see if the combined 1999–2001 rate masked any internal variations. There were no marked differences observed over these years.

3.2 Method used by age and gender

Figure 29 shows the main methods used for suicides in Queensland over the years 1999–2001. Hanging (43%), motor vehicle carbon monoxide (MVCO) poisoning (21%), poisoning by solids and liquids (13%) and firearms (12%) accounted for 89% of all suicides in Queensland (86% for females and 90% for males), between 1999 and 2001. The proportion of suicides from firearms continues to decline (from 15% of all suicides in 1996–1998), and is now the fourth commonest method in Queensland. Suicide by firearms has traditionally been very common, and was the leading method of suicide between 1990 and 1995 in Queensland (Baume et al., 1998). However changes to gun ownership policy in Queensland and the national gun "buy-back" legislation may have contributed to these declines. Across the same period, however, suicides by hanging have become far more common, suggesting that there may have been a substitution in methods from firearms to hanging, as firearms became less easily accessible. Recent investigations showed that the rate of suicide by hanging was already increasing when the rate of firearm suicide started declining, therefore, straight substitution of methods cannot explain these changes, rather social reasons are considered to play an important role in this change (De Leo et al., 2003).

Figure 29

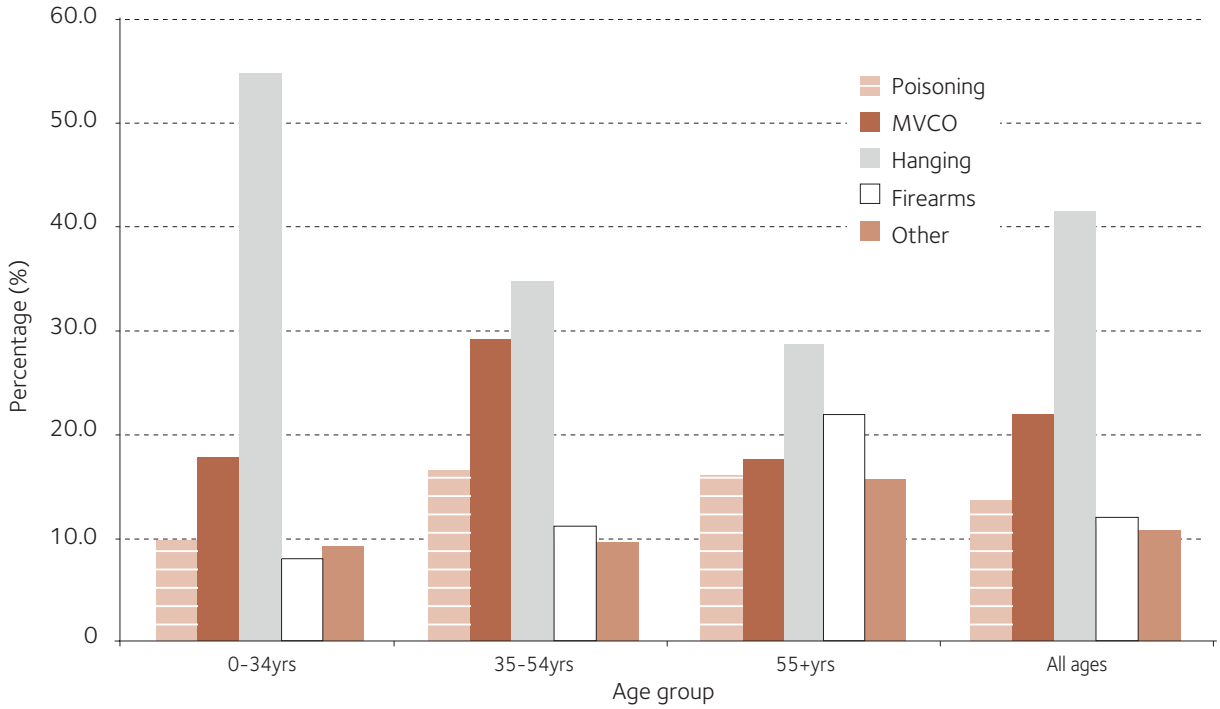
Method used as proportion of all suicides, Queensland, 1999–2001



Source: Australian Institute for Suicide Research and Prevention, 2004

Figure 30

Method used as a proportion of all suicides by broad age group, persons, Queensland, 1999–2001

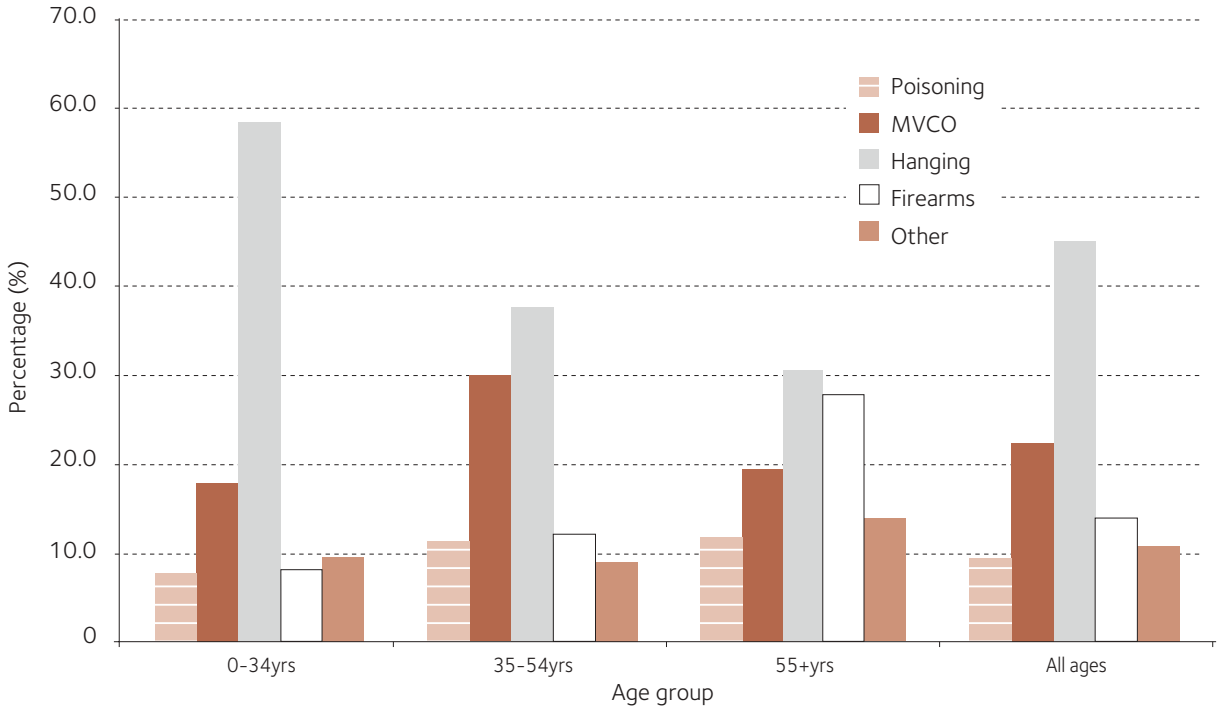


Source: Australian Institute for Suicide Research and Prevention, 2004

An examination of suicide methods by age was conducted with the age regrouped to three main groupings: 0–34, 35–54 and 55 years and above (Figure 30). Hanging was the most prevalent method used in each age group, especially among young people where 56% of all suicides were from this method. The second most frequently used method was motor vehicle carbon monoxide, except in the 55 years and over group, where firearms were more common (22%). The 55 years and over group showed a more general spread of method choice than each other age group.

Figure 31

Method used as a proportion of all suicides by broad age group, males, Queensland, 1999–2001

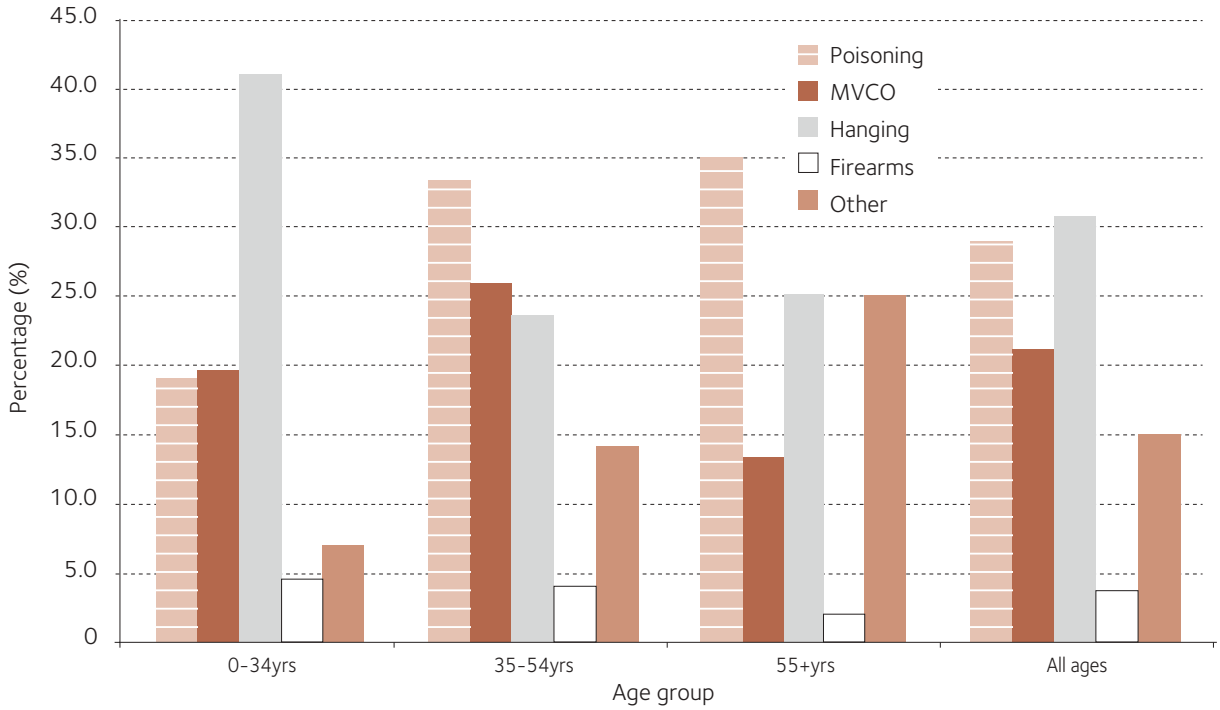


Source: Australian Institute for Suicide Research and Prevention, 2004

Figure 31 shows method of suicide as a proportion of all suicides by (broad) age group for males, over the period 1999–2001. Hanging was the most common method in each age group, most notably in the younger age group, where 58% of deaths were from hanging. Motor vehicle carbon monoxide was also frequently used, especially in the 35 to 54 year age group (30%). Firearms (27%) were used almost as commonly as hanging (30%) in the 55 years and over age group.

Figure 32

Method used as a proportion of all suicides by broad age group, females, Queensland, 1999–2001



Source: Australian Institute for Suicide Research and Prevention, 2004

Figure 32 shows method of suicide as a percentage of all suicides by (broad) age group for females, over the period 1999–2001. Overall, hanging (33%) was the most frequently used method of suicide, marginally ahead of poisoning by solids and liquids (29%). In young females (15–34 years) hanging (46%) was more than twice as prevalent as poisoning by solids and liquids (21%); however, poisoning was most common in both the 35 to 54 year age group (34%) and the 55 years and over age group (35%). Among 35 to 54 year old females, motor vehicle carbon monoxide (25%) was the second most common method of suicide.

Overall, males were approximately three times more likely to use firearms to suicide than females (14% vs. 4%). Conversely, females were approximately three times more likely to use poisoning by solids or liquids to suicide than males (29% vs. 9%). This pattern was accentuated for firearm use in the 55 years and over age group, where only 2% of female suicides were by firearms, compared to 27% by males.

4. Suicides in Queensland, 1999–2001: regional statistics

In this section, data from the Queensland Suicide Register will be presented on a regional basis, by age and by gender. Two regional schemes are used for this report; the first is a differentiation into broad metropolitan, regional, and remote areas in Queensland (Section 4.1). The second scheme is a greater differentiation of urban and rural into seven regions, based on specific geographical locations in Queensland as defined by the Australian Bureau of Statistics (Section 4.2).

In the calculation of regional data, 51 deaths were excluded from the total of 1494 deaths because the deceased either had no fixed place of abode or their exact residential location at time of death was unknown. A further 22 deaths were excluded from this analysis because the residential address was listed as an institution (i.e. individuals under long term psychiatric care or imprisonment). Inclusion of these cases would result in distorted mortality rates for particular regions. Regional statistics are thus based on a total of 1421 deaths. There were also three individuals whose ages at time of death were unknown and hence where tables refer to age-based breakdowns the totals are 1418.

The following sections will include comparisons between regional rates and state rates. The Queensland rates that appear in this section are based on the same 1421 cases that the regional analyses used, and therefore may differ slightly from those already mentioned. The adjusted suicide mortality rates for Queensland are shown in Table 9.

Table 9

Suicide rates for comparison with regional statistics, Queensland, 1999–2001

	Males	Females	Persons
0-14 years	-	-	0.5
15-24 years	25.2	4.6	15.0
25-34 years	34.4	9.4	21.8
35-44 years	28.7	8.6	18.5
45-54 years	23.6	6.0	14.8
55-64 years	20.4	6.6	13.7
65-74 years	21.6	5.1	13.2
75 years and over	25.9	2.9	12.2
All ages	20.0	5.3	12.9

- Not calculated because the number of suicides was less than 10

4.1 Metropolitan, regional, and remote mortality by age and gender

The classification of geographical areas based on their 'remoteness' is not always defined according to one consistent definition. To determine levels of remoteness for the current report, the ABS Accessibility/Remoteness Index of Australia (ARIA) was used. A large and diverse state, Queensland features coastal areas, mountain ranges, deserts, and islands, with variations in economic, social, and environmental conditions. Given this diversity, it was considered that three categories of remoteness within Queensland would provide a more appropriate and informative summary of suicides, these being metropolitan, regional, and remote. Metropolitan areas were considered to be those classified by ABS as Major Cities of Australia (ARIA score 0 to 0.2), which for this report include Brisbane, the Gold Coast, and other areas with high accessibility to services. Regional areas were a combination of inner regional and outer regional centres (ARIA codes from 0.2 to 5.92), while remote areas were a combination of remote and very remote areas (ARIA of greater than 5.92). Regional areas included Townsville, Cairns, and Toowoomba, while remote areas included Bowen, Carpentaria, Cloncurry, and Mount Isa. For a full description of ARIA geographical categorisation, see the Occasional Paper, produced by the Department of Health and Aged Care (DHAC, 2001).

Figure 33 shows mortality rates for metropolitan, regional, and remote areas, and the whole of Queensland, for males, females, and persons. The remote rates for males and persons were statistically greater than the other regions, and Queensland as a whole. The male suicide rate in remote areas (42.3 per 100 000) was about two times the rate seen in other areas of Queensland. Similarly, regional rates for males and persons were significantly higher than those from counterparts in metropolitan areas.

Figure 33

Suicide rates by gender, metropolitan, regional, and remote areas of Queensland, 1999–2001

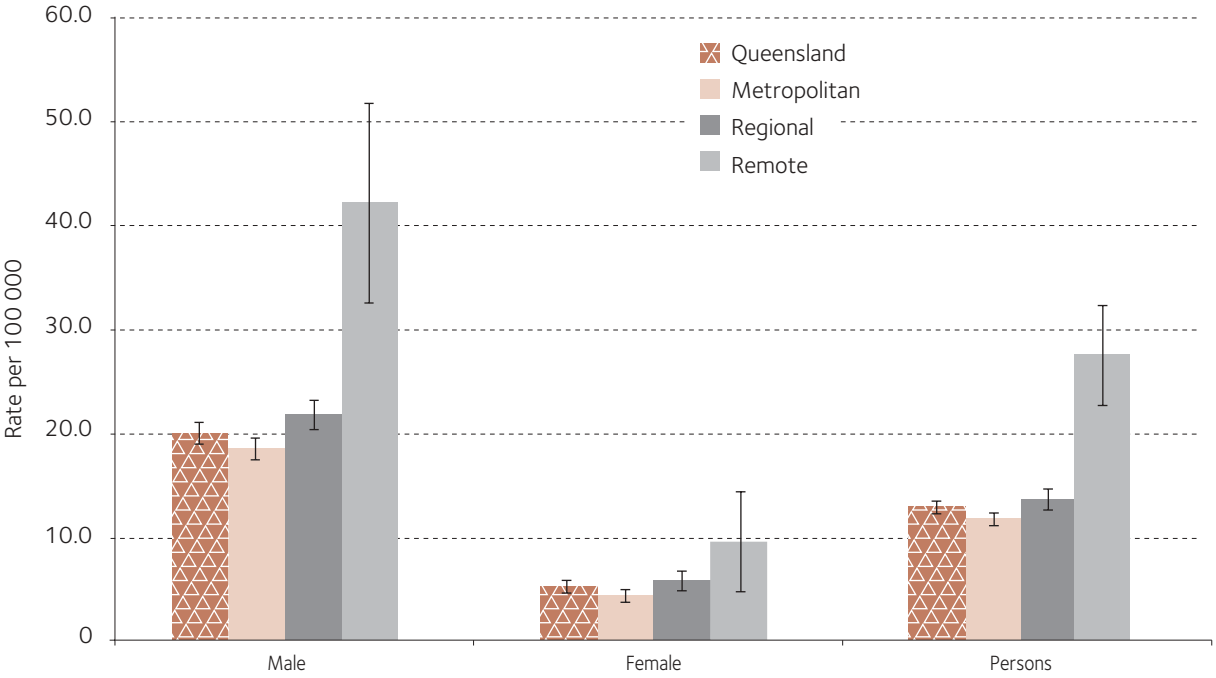


Table 10 presents suicide rates for metropolitan, regional, and remote areas for males, females, and persons by ten-year age group. Males, females, and all persons (of all ages) in regional areas had significantly elevated suicide rates compared to their metropolitan counterparts. Among males, the greatest differences were among 65–74 year olds where the rate of suicide was 79% greater in the regional area than the metropolitan area. Significant differences were evident among middle-aged females (35–44 and 45–54 years), with regional females aged 45–54 years 88% more likely to die by suicide than their counterparts in metropolitan areas. For males, significant differences were witnessed in the young group (15–24 years) and the middle-to-late age groups (45–54, 55–64, and 65–74 years).

Suicide rates in remote areas were at least two times greater than in metropolitan areas for males, females, and persons. The rate of suicide among young males in remote areas (80.1 per 100 000) was more than four times the rate seen in metropolitan counterparts. This trend continued for all age groups (where rates could be calculated). For females, age-specific suicide rates could not be calculated due to small numbers; however, for all age females, those in remote areas had rates twice those of females in metropolitan areas.

Table 10

Suicide numbers, mortality rates, and standardised mortality ratios by gender and age group, metropolitan, regional, and remote areas of Queensland, 1999–2001

	Metropolitan		Regional				Remote			
	No.	Rate	No	Rate	SMR[1]	95%CI	No	Rate	SMR[1]	95%CI
Male										
0-14yrs	0	-	4	-	-	-	2	4.3	-	-
15-24yrs	85	19.8	90	28.1	1.42	1.14-1.74	20	80.1	4.05	2.47-6.25
25-34yrs	145	32.8	106	33.6	1.02	0.84-1.24	20	66.5	2.03	1.24-3.13
35-44yrs	111	26.5	106	29.2	1.10	0.90-1.33	16	54.8	2.07	1.18-3.36
45-54yrs	75	19.3	94	27.7	1.43	1.16-1.75	8	-	-	-
55-64yrs	44	16.8	61	24.2	1.44	1.10-1.85	3	-	-	-
65-74yrs	24	14.7	45	26.4	1.79	1.31-2.40	5	-	-	-
75yrs+	30	25.0	27	25.1	1.00	0.66-1.46	3	-	-	-
All Ages	514	18.3	533	22.0	1.20	1.06-1.14	77	42.3	2.31	1.82-2.90
Females										
0-14yrs	1	-	4	-	-	-	0	-	-	-
15-24yrs	14	3.3	17	5.5	1.68	0.98-2.69	4	-	-	-
25-34yrs	37	8.2	35	10.7	1.31	0.91-1.82	4	-	-	-
35-44yrs	29	6.6	39	10.4	1.58	1.12-2.16	4	-	-	-
45-54yrs	17	4.2	26	7.9	1.88	1.23-2.76	2	-	-	-
55-64yrs	20	7.8	13	5.5	0.71	0.38-1.21	0	-	-	-
65-74yrs	9	-	8	-	-	-	1	-	-	-
75yrs+	7	-	3	-	-	-	0	-	-	-
All Ages	134	4.6	145	6.0	1.31	1.02-1.69	15	9.5	2.07	1.16-3.41
Persons										
0-14yrs	1	-	8	-	-	-	2	-	-	-
15-24yrs	99	11.5	107	17.1	1.48	1.22-1.79	24	52.2	4.54	2.91-6.76
25-34yrs	182	20.4	141	21.9	1.08	0.84-1.37	24	41.5	2.04	1.30-3.03
35-44yrs	140	16.4	145	19.7	1.20	0.94-1.54	20	37.2	2.27	1.39-3.51
45-54yrs	92	11.7	120	18.0	1.53	1.27-1.84	10	23.8	2.04	0.98-3.74
55-64yrs	64	12.3	74	15.2	1.24	0.97-1.55	3	-	-	-
65-74yrs	33	9.6	53	15.8	1.65	1.23-2.15	6	-	-	-
75yrs+	37	11.9	30	11.8	1.00	0.67-1.42	3	-	-	-
All ages	648	11.3	678	14.0	1.24	1.11-1.39	92	27.1	2.40	1.93-2.94

[1] Metropolitan=1

Figures 34 to 42 provide information on the distribution of suicides according to gender, broad age group, and method used in metropolitan, regional, and remote areas of Queensland. The gender ratio of 3.8:1 persisted in both the metropolitan and regional areas throughout the study period; however, this gap was wider in remote areas (5.25:1). Regional and metropolitan areas shared similar broad age group distributions, with 43% of suicides in the metropolitan area accounted for by persons aged under 35 years. In the remote area, more than half of all suicides were by persons aged under 35 years old, with only 13% by persons aged older than 55 years.

Hanging was the most common method in all areas. In remote areas, two-thirds of all suicides were accounted for by this method. In the metropolitan area, there were smaller proportions of hanging (37%) and firearm (7%) suicide and greater proportions of poisoning (16%) and motor vehicle carbon monoxide poisoning (25%) in comparison to regional and remote areas. Similar proportions of firearm suicides were found in regional (16%) and remote (14%) areas, although carbon monoxide poisoning only accounted for 7% of suicides in the remote areas of Queensland.

Figure 34

Gender ratio of suicides, metropolitan areas of Queensland, 1999–2001

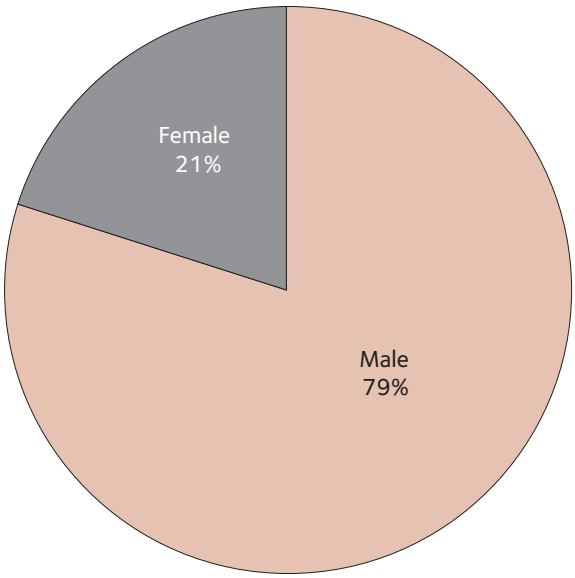


Figure 35

Proportion of all suicides by broad age group, metropolitan areas of Queensland, 1999–2001

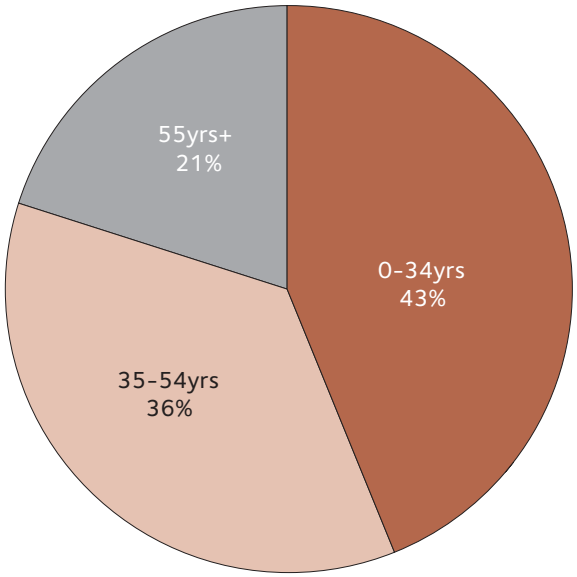


Figure 36

Method used as proportion of all suicides, metropolitan areas of Queensland, 1999–2001

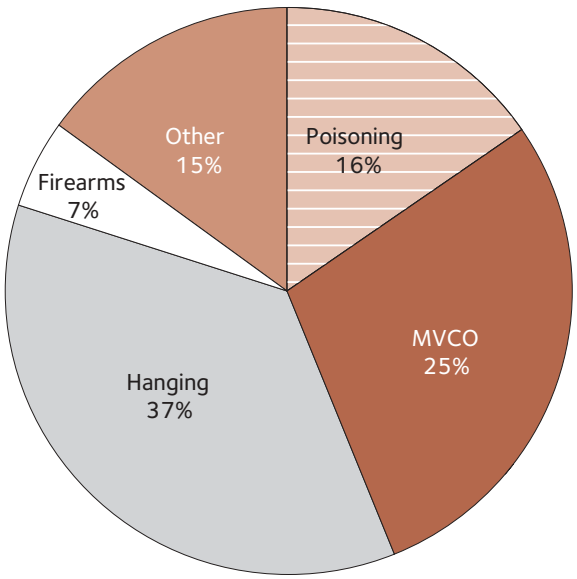


Figure 37

Gender ratio of suicides, regional areas of Queensland, 1999–2001

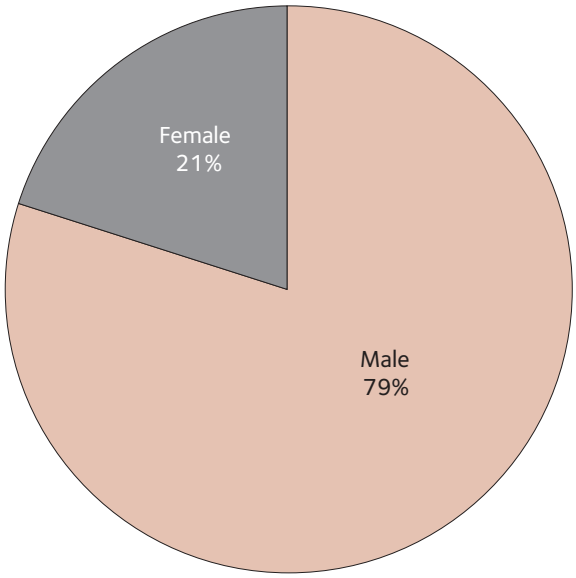


Figure 38

Proportion of all suicides by broad age group, regional areas of Queensland, 1999–2001

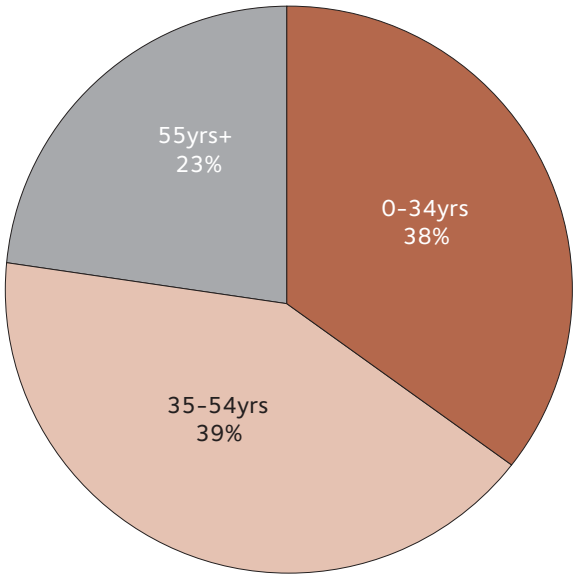


Figure 39

Method used as proportion of all suicides, regional areas of Queensland, 1999–2001

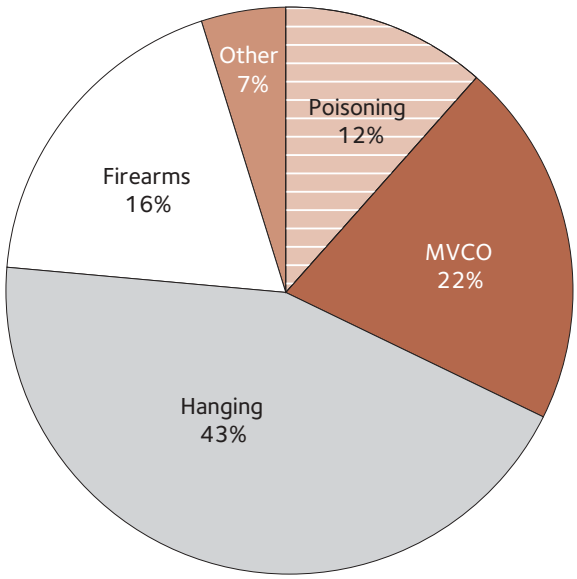


Figure 40

Gender ratio of suicides, remote areas of Queensland, 1999–2001

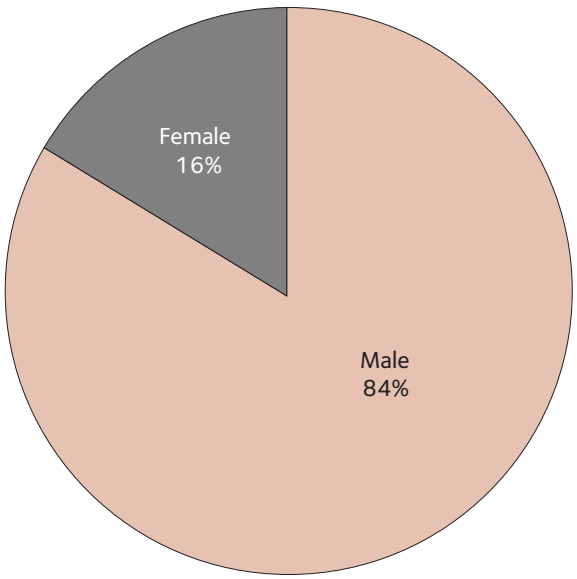


Figure 41

Proportion of all suicides by broad age group, remote areas of Queensland, 1999–2001

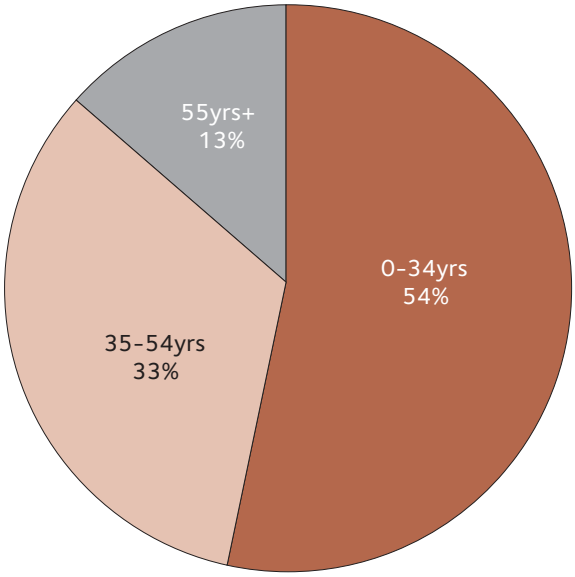
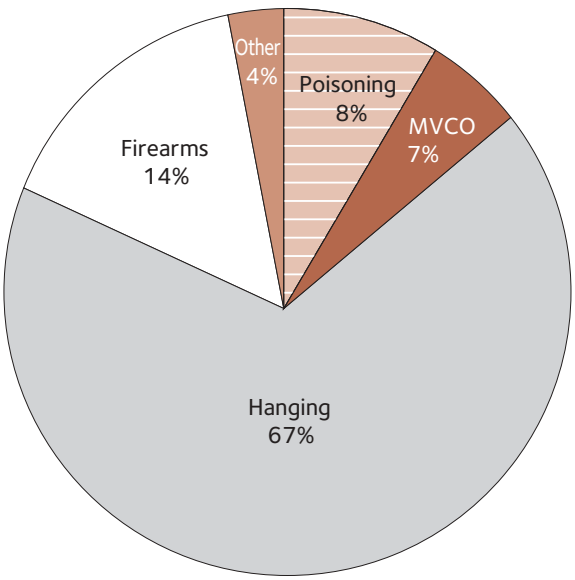


Figure 42

Method used as proportion of all suicides, remote areas of Queensland, 1999–2001

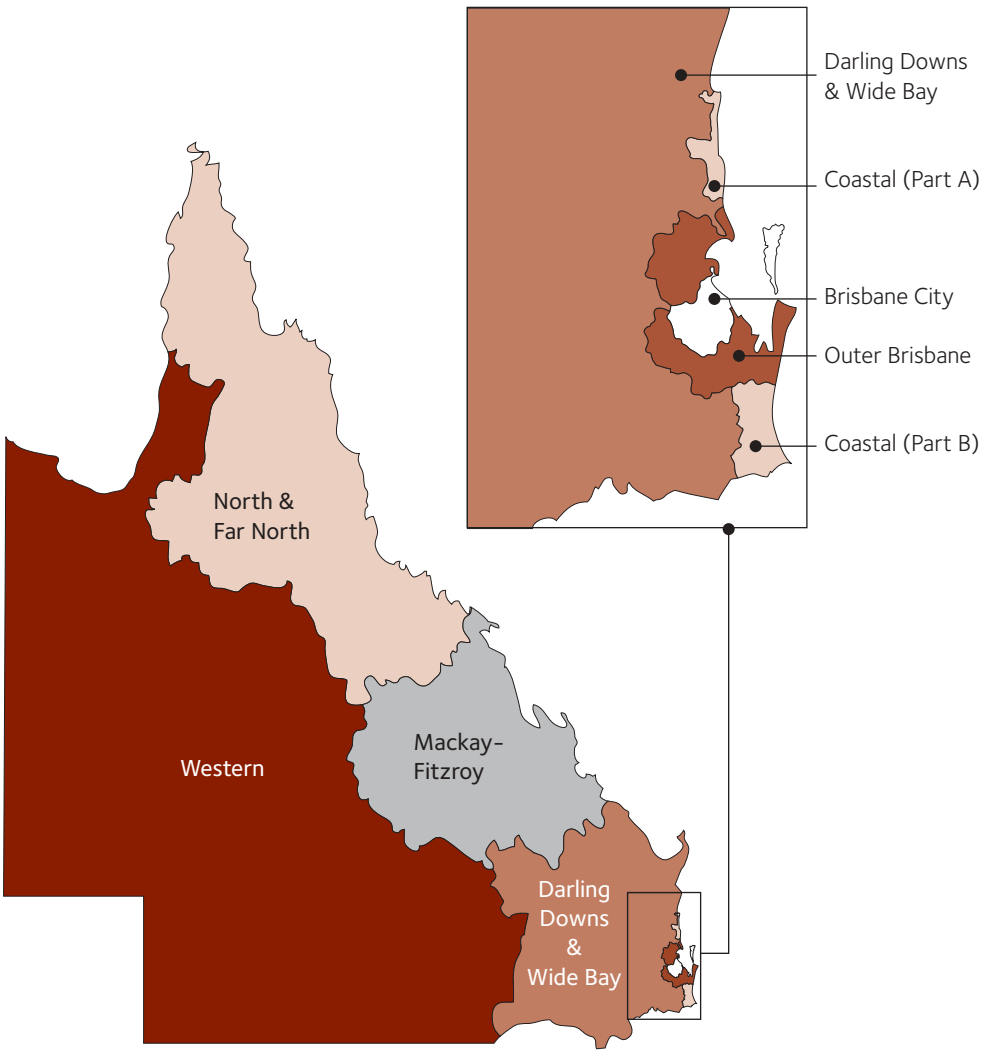


4.2 Suicide mortality by geographical region, age group and gender

For this section, the state is further divided into seven regions, based on the 2001 edition of the Australian Standard Geographical Classification (Figure 43). The urban area comprises three regions: Brisbane City, Outer Brisbane and the Coastal regions. The rural areas comprise the remaining four regions: Darling Downs and Wide Bay, Mackay–Fitzroy, Western and North and Far North.

Figure 43

Map of Queensland showing the seven regions used in this report

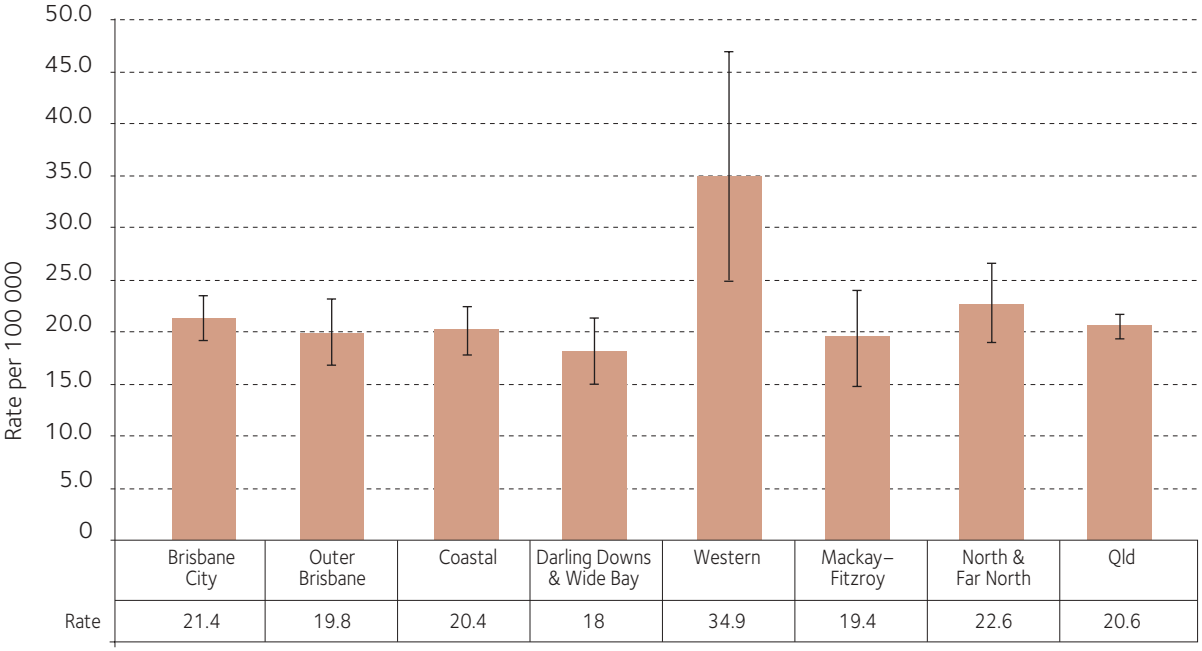


Source: Australian Bureau of Statistics, 2004

Figures 44 to 46 show the suicide mortality rates for each region by gender. Among males, suicide rates ranged from 18.0 per 100 000 in the Darling Downs and Wide Bay region to 34.9 per 100 000 in the Western region. Among females, suicide rates ranged from 4.3 per 100 000 in the Mackay–Fitzroy region to 6.4 per 100 000 for the North and Far North region. For all persons, suicide rates ranged from 11.3 per 100 000 in the Darling Downs and Wide Bay region to 21.2 per 100 000 in the Western region.

Figure 44

Suicide rates among males by region, 1999–2001

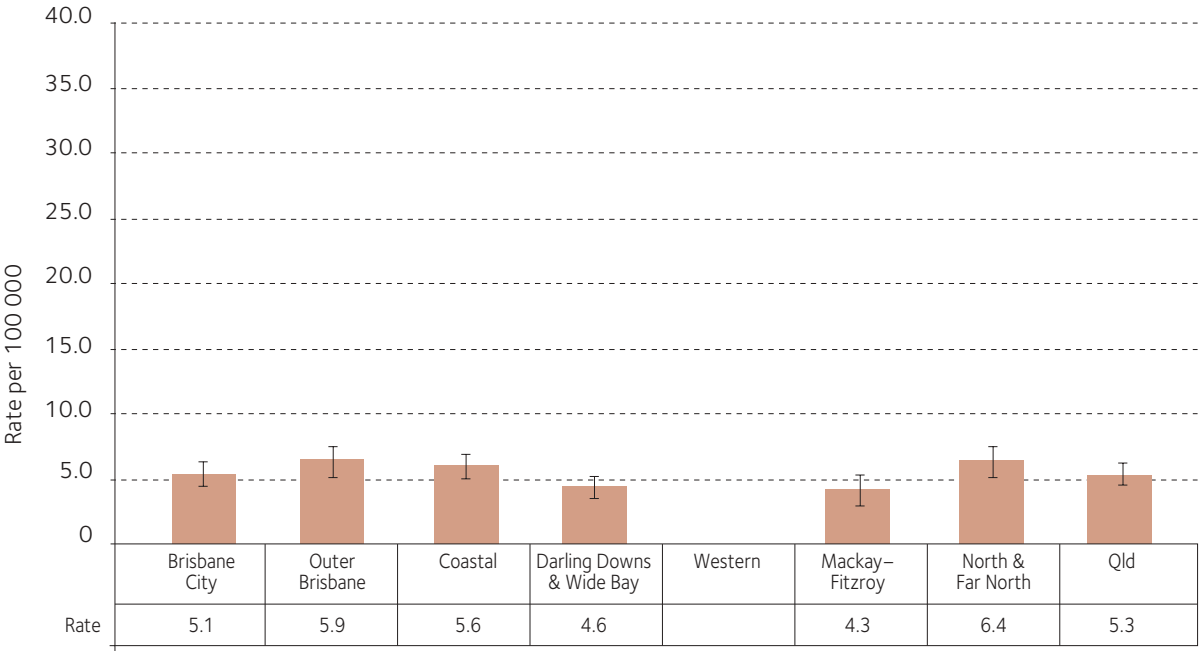


	Brisbane City	Outer Brisbane	Coastal	Darling Downs & Wide Bay	Western	Mackay–Fitzroy	North & Far North	Qld
Rate	21.4	19.8	20.4	18	34.9	19.4	22.6	20.6

Source: Australian Institute for Suicide Research and Prevention, 2004.

Figure 45

Suicide rates among females by region, 1999–2001



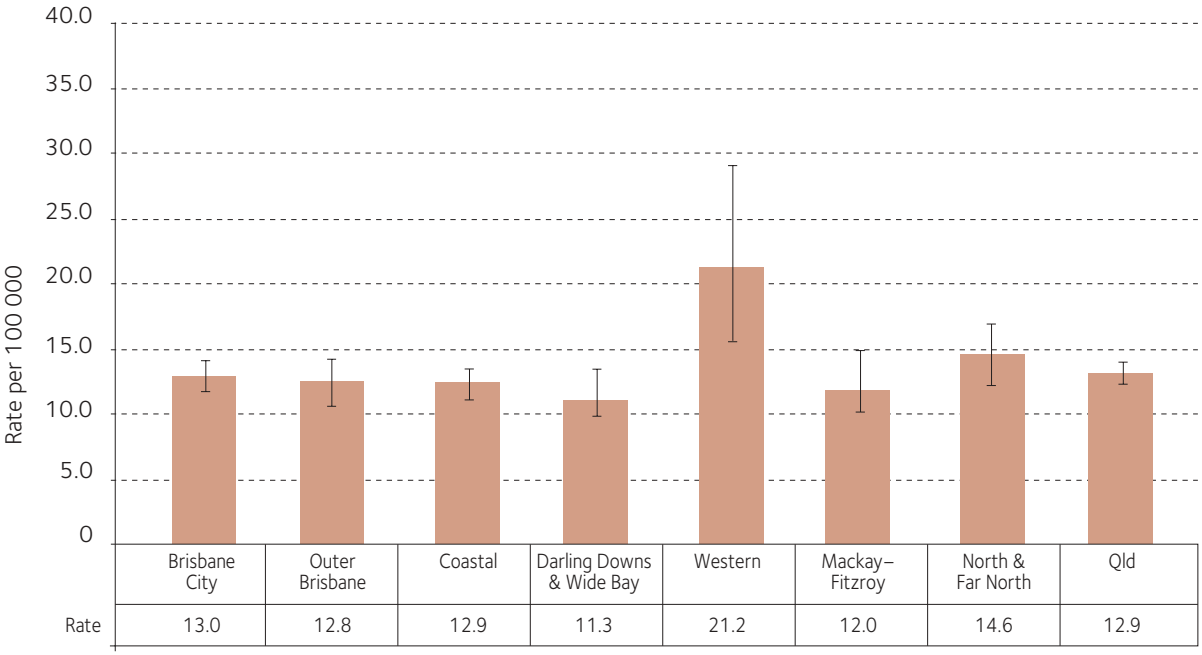
	Brisbane City	Outer Brisbane	Coastal	Darling Downs & Wide Bay	Western	Mackay–Fitzroy	North & Far North	Qld
Rate	5.1	5.9	5.6	4.6		4.3	6.4	5.3

NB: Rates could not be calculated for the Western region, as there were less than ten (10) deaths over the period

Source: Australian Institute for Suicide Research and Prevention, 2004.

Figure 46

Suicide rates among persons by region, 1999–2001



	Brisbane City	Outer Brisbane	Coastal	Darling Downs & Wide Bay	Western	Mackay–Fitzroy	North & Far North	Qld
Rate	13.0	12.8	12.9	11.3	21.2	12.0	14.6	12.9

Source: Australian Institute for Suicide Research and Prevention, 2004.

The pages that follow give a more comprehensive overview of suicide in each of the seven regions for the period 1999–2001. For each region, a summary table that includes suicide numbers, mortality rates, and standardised mortality ratios (compared to the Queensland state rate for the period) for males, females, and persons is provided. The gender ratio, age distributions, and method used are portrayed in pie graphs.

4.2.1 Brisbane City region

The Brisbane City region had a population of approximately 897 000 in 2001. During the period 1999–2001, there were three hundred and fifty-one (351) suicides registered in this region, representing a mortality rate of 13.0 per 100 000 persons over the triennium, slightly higher than the Queensland mortality rate (12.9 per 100 000). Table 11 presents the suicide mortality rates for Brisbane City by gender and age group. Among males, the highest suicide rate was seen in 25–34 year olds (36.1 per 100 000). Overall, the male age-specific suicide rates were very similar to the rates for Queensland, with no statistically significant variations. Among females, the highest mortality rate was also for 25–34 year olds (8.7 per 100 000), although reliable rates could not be calculated for all age groups. Where rates were calculated, the Brisbane City female rates were largely consistent with the Queensland rates.

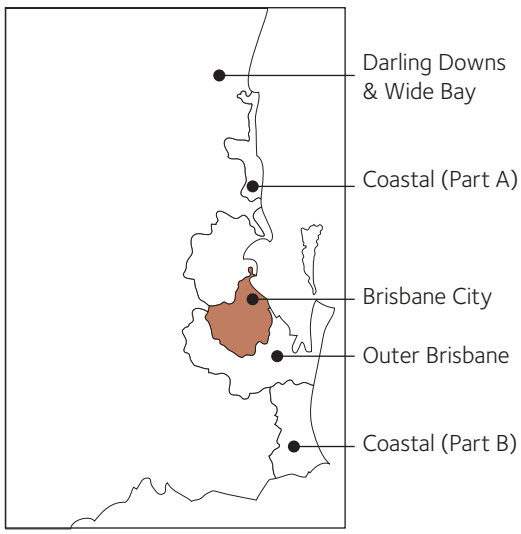


Table 11

Suicide numbers, rates, and standardised mortality ratios by gender and age group, Brisbane City, 1999–2001

	Number	Population	Rate	SMR[1]	95% CI
Male					
0-14yrs	0	82330	-	-	-
15-24yrs	52	70670	24.5	0.97	0.73-1.28
25-34yrs	82	75727	36.1	1.05	0.83-1.30
35-44yrs	56	65769	28.4	0.99	0.75-1.28
45-54yrs	38	59432	21.3	0.90	0.64-1.24
55-64yrs	22	39967	18.3	0.90	0.56-1.36
65-74yrs	11	25231	14.5	0.67	0.34-1.20
75yrs+	20	19486	34.2	1.32	0.81-2.04
All ages	281	438612	21.4	1.07	0.90-1.27
Female					
0-14yrs	1	78598	-	-	-
15-24yrs	9	71943	-	-	-
25-34yrs	20	76486	8.7	0.93	0.57-1.43
35-44yrs	14	67216	6.9	0.81	0.44-1.35
45-54yrs	6	61235	-	-	-
55-64yrs	10	39700	8.4	1.27	0.61-2.34
65-74yrs	5	29020	-	-	-
75yrs+	5	33839	-	-	-
All ages	70	458037	5.1	0.96	0.75-1.21
Persons					
0-14yrs	1	160928	-	-	-
15-24yrs	61	142613	14.3	0.95	0.73-1.22
25-34yrs	102	152213	22.3	1.02	0.77-1.36
35-44yrs	70	132985	17.5	0.95	0.74-1.20
45-54yrs	44	120667	12.2	0.82	0.60-1.10
55-64yrs	32	79667	13.4	0.98	0.67-1.38
65-74yrs	16	54251	9.8	0.75	0.43-1.21
75yrs+	25	53325	15.6	1.28	0.83-1.89
All ages	351	896649	13.0	1.01	0.87-1.18

[1] Queensland =1

- Not calculated because the number of suicides was less than 10.

Figure 47

Gender ratio of suicides, Brisbane City, 1999–2001

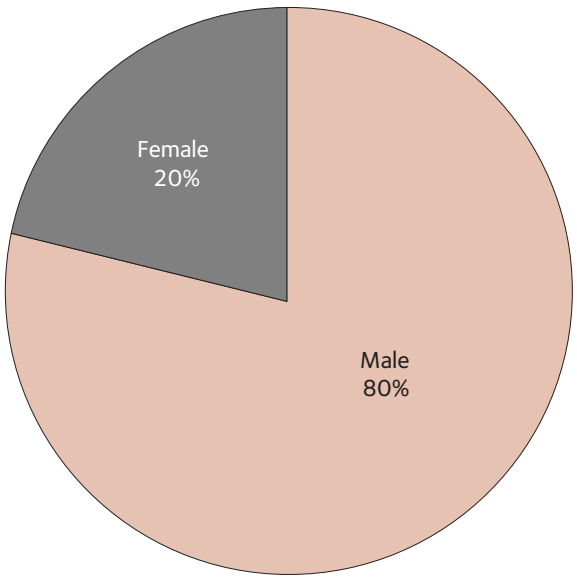


Figure 48

Proportion of suicides by broad age group, Brisbane City, 1999–2001

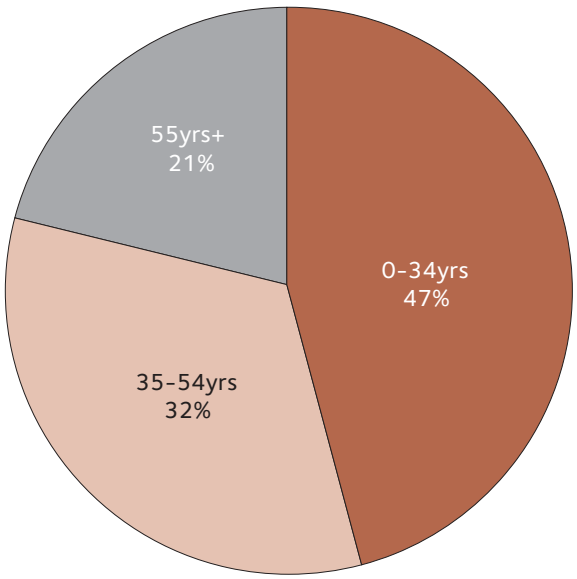
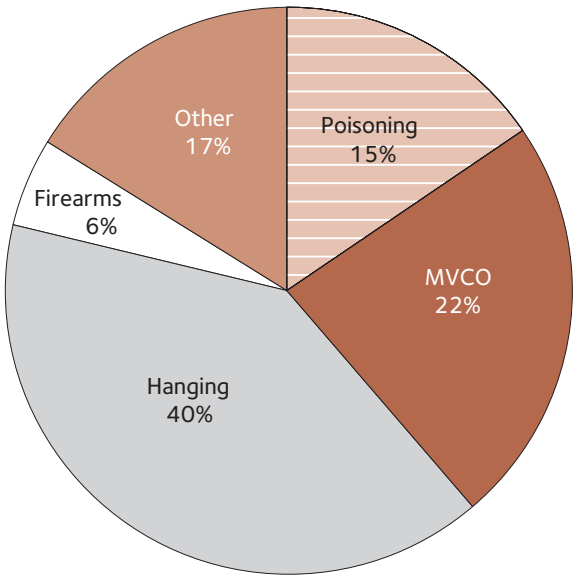


Figure 49

Method used as proportion of all suicides, Brisbane City, 1999–2001



Figures 47 to 49 show the distribution of suicides according to gender, broad age group, and method used for Brisbane City. The gender ratio for Brisbane City was 4:1, similar to that of Queensland (3.8:1). Almost half (47%) the suicides in Brisbane City were by persons aged under 35 years, and almost one-third (32%) were aged between 35 and 54 years of age. Hanging was the most commonly used method in Brisbane City, accounting for 40% of deaths. Motor vehicle carbon monoxide poisoning was the second most common method, accounting for 22% of all suicides in the region. Brisbane City had the lowest proportion of firearm suicides of all the regions in Queensland, and the highest proportion of 'other' methods. Overall, the age, gender, and method distributions within the Brisbane City region were very similar to those of Queensland as a whole.

4.2.2 Outer Brisbane region

Approximately 474 000 people lived in the Outer Brisbane region of Queensland in 2001. Between 1999 and 2001, one hundred and eighty-two (182) suicides were recorded in this region, representing a suicide mortality rate of 12.8 per 100 000 (Qld=12.9). Suicide rates and number by age and gender for Outer Brisbane are reported in Table 12. Among both males (34.5 per 100 000) and females (11.6 per 100 000), the suicide mortality rate peaked in persons aged 25–34 years. The age-specific suicide rates for males in Outer Brisbane were generally similar to the rates for males in the whole of Queensland. Among females, although rates could not be calculated for many age groups, the female suicide rates in this region appeared to be higher than the state as a whole, though this excess was not statistically significant.

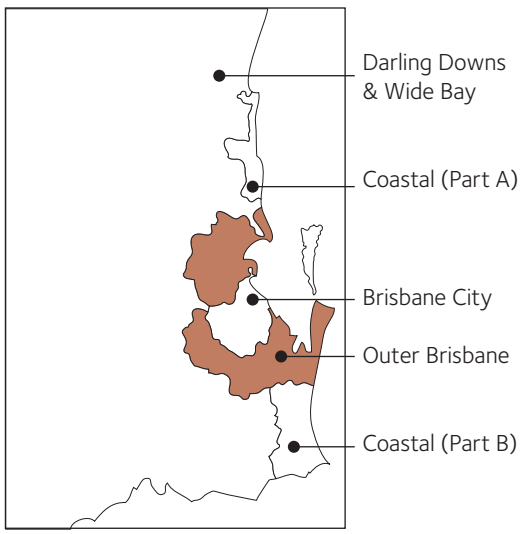


Table 12

Suicide numbers, rates, and standardised mortality ratios by gender and age group, Outer Brisbane, 1999–2001

	Number	Population	Rate	SMR[1]	95% CI
Male					
0-14yrs	0	58839	-	-	-
15-24yrs	21	35818	19.5	0.78	0.48-1.19
25-34yrs	34	32865	34.5	1.00	0.69-1.40
35-44yrs	35	35503	32.9	1.15	0.80-1.59
45-54yrs	22	33569	21.8	0.93	0.58-1.40
55-64yrs	15	21083	23.7	1.16	0.65-1.92
65-74yrs	8	11126	-	-	-
75yrs+	5	6808	-	-	-
All ages	140	235611	19.8	0.99	0.78-1.26
Female					
0-14yrs	0	55974	-	-	-
15-24yrs	4	34503	-	-	-
25-34yrs	12	34377	11.6	1.24	0.64-2.16
35-44yrs	12	37817	10.6	1.23	0.64-2.15
45-54yrs	7	33754	-	-	-
55-64yrs	5	19242	-	-	-
65-74yrs	1	11495	-	-	-
75yrs+	1	10126	-	-	-
All ages	42	237288	5.9	1.11	0.80-1.50
Persons					
0-14yrs	0	114813	-	-	-
15-24yrs	25	70321	11.9	0.79	0.51-1.17
25-34yrs	46	67242	22.8	1.05	0.77-1.40
35-44yrs	47	73320	21.4	1.16	0.85-1.54
45-54yrs	29	67323	14.4	0.97	0.65-1.39
55-64yrs	20	40325	16.5	1.21	0.74-1.86
65-74yrs	9	22621	-	-	-
75yrs+	6	16934	-	-	-
All ages	182	472899	12.8	0.99	0.81-1.23

[1] Queensland =1

- Not calculated because the number of suicides was less than 10.

Figure 50

Gender ratio of suicides, Outer Brisbane, 1999–2001

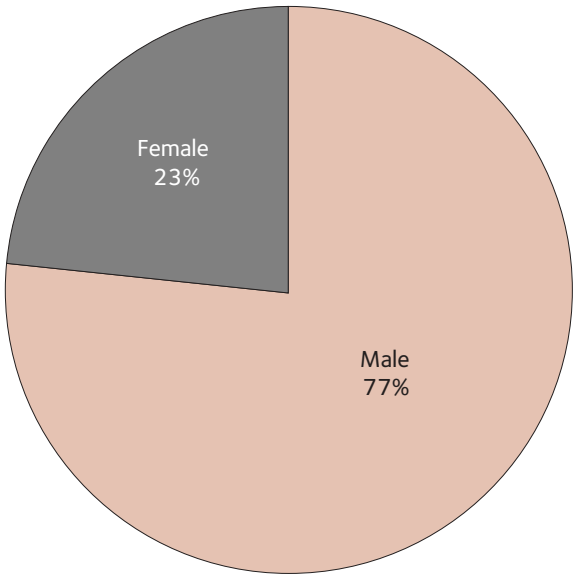


Figure 51

Proportion of suicides by broad age group, Outer Brisbane, 1999–2001

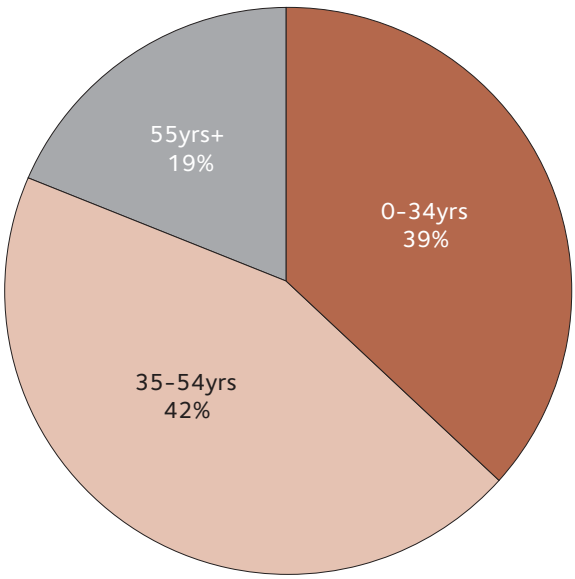
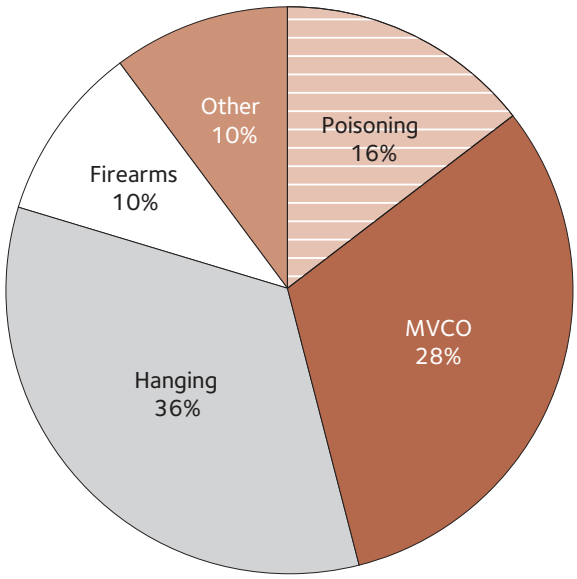


Figure 52

Method used as proportion of all suicides, Outer Brisbane, 1999–2001



Figures 50 to 52 show the distribution of suicides in the Outer Brisbane region by gender, broad age group, and method used. The gender ratio was approximately 3.3:1, lower than the Queensland ratio (3.8:1). Approximately 40% of all suicides in Outer Brisbane were among persons aged under 35 years (39%), and an additional 42% were by persons aged 35 to 54 years. Hanging was the most common method of suicide in the region (36%); however, motor vehicle carbon monoxide poisoning was more common in Outer Brisbane than in Queensland as a whole (28% vs. 21%). Poisoning was slightly more common in Outer Brisbane than the state as a whole, perhaps due to the greater proportion of female suicides in this region.

4.2.3 Coastal region

The Coastal region of Queensland contained a population of approximately 1 million in 2001. A total of three hundred and ninety (390) suicides were registered in the region between 1999 and 2001, representing a suicide mortality rate of 12.9 per 100 000 (Qld=12.9). Table 13 shows the suicide numbers and rates by age group and gender for the Coastal region. The highest suicide rate for males was seen among 25-34 year olds (39.6 per 100 000). The age-specific suicide rates for males in the Coastal region were typically slightly higher than the whole of Queensland for younger and middle aged males, and slightly lower in the older age groups, though these differences were not statistically significant. Among females, the highest rate of mortality was seen in 35-44 year olds (9.8 per 100 000), with the general trend for most age groups that rates were slightly higher than Queensland for females (where rates could be calculated). The rate of female suicide in 55-64 year olds in the region was 36% greater than the state, however this difference did not reach statistical significance.

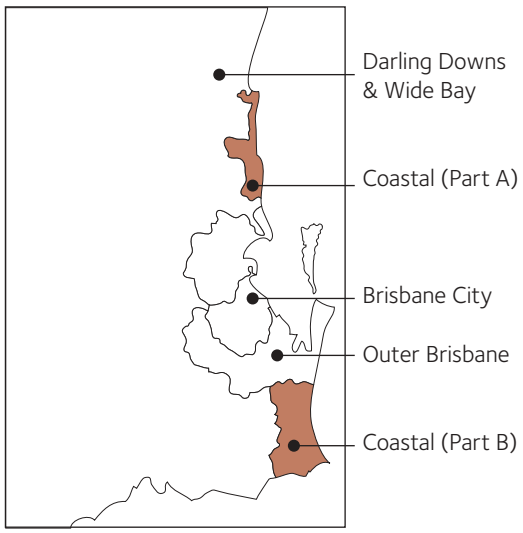


Table 13

Suicide numbers, rates, and standardised mortality ratios by gender and age group, Coastal, 1999–2001

	Number	Population	Rate	SMR[1]	95% CI
Male					
0-14yrs	1	107575	-	-	-
15-24yrs	49	64800	25.2	1.00	0.74-1.32
25-34yrs	78	65644	39.6	1.15	0.91-1.43
35-44yrs	64	73243	29.1	1.01	0.78-1.30
45-54yrs	51	70124	24.2	1.03	0.76-1.35
55-64yrs	24	52507	15.2	0.76	0.48-1.11
65-74yrs	23	36792	20.8	0.71	0.38-1.18
75yrs+	14	25610	18.2	0.98	0.84-1.16
All ages	304	496295	20.4	1.02	0.87-1.20
Female					
0-14yrs	1	101655	-	-	-
15-24yrs	6	62826	-	-	-
25-34yrs	18	69145	8.7	0.92	0.55-1.46
35-44yrs	23	78541	9.8	1.14	0.72-1.70
45-54yrs	13	72488	6.0	1.00	0.53-1.70
55-64yrs	14	52135	9.0	1.36	0.74-2.28
65-74yrs	7	37732	-	-	-
75yrs+	4	34248	-	-	-
All ages	86	508770	5.6	1.15	0.91-1.44
Persons					
0-14yrs	2	209230	-	-	-
15-24yrs	55	127626	14.4	0.96	0.72-1.25
25-34yrs	96	134789	23.7	1.09	0.88-1.33
35-44yrs	87	151784	19.1	1.03	0.83-1.27
45-54yrs	64	142612	15.0	1.01	0.78-1.29
55-64yrs	38	104642	12.1	0.88	0.63-1.21
65-74yrs	30	74524	13.4	1.02	0.69-1.45
75yrs+	18	59858	10.0	0.82	0.49-1.30
All ages	390	1005065	12.9	1.00	0.87-1.16

[1] Queensland =1

- Not calculated because the number of suicides was less than 10.

Figure 53

Gender ratio of suicides, Coastal, 1999–2001

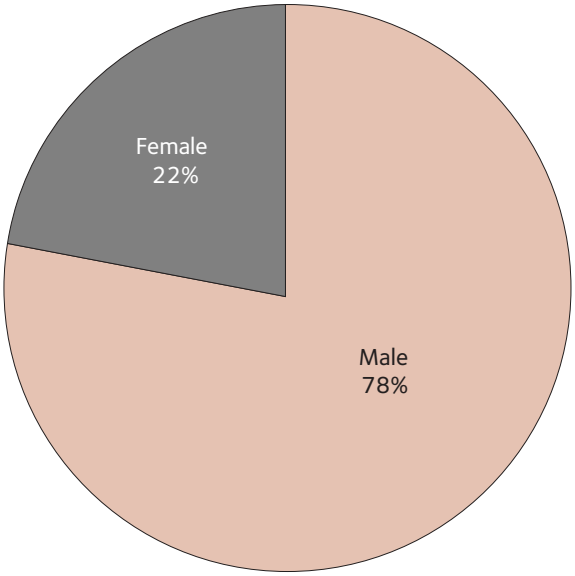


Figure 54

Proportion of suicides by broad age group, Coastal, 1999–2001

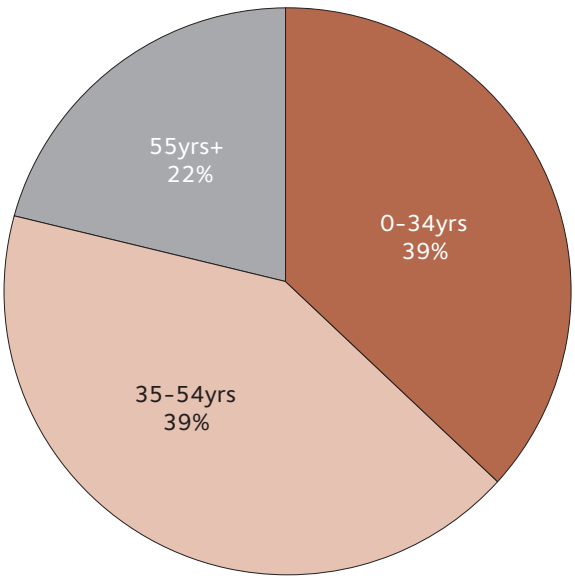
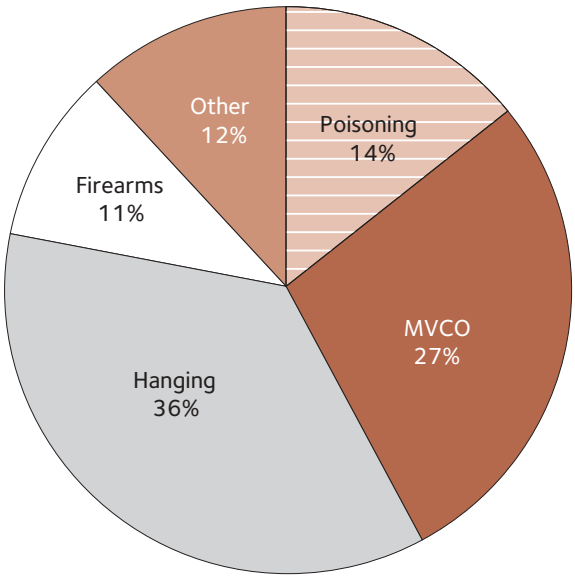


Figure 55

Method used as proportion of all suicides, Coastal, 1999–2001



Figures 53 to 55 show the distribution of suicides in Coastal according to gender, broad age groups, and method used. The gender ratio in the region was approximately 3.5:1 (Qld=3.8:1). Thirty-nine percent of the suicides in the Coastal region were accounted for by people aged under 35 years, with an additional 39% of suicides by persons aged 35 to 54 years. Hanging was the most common method in the Coastal region (36%) although the proportion was lower than seen in Queensland as a whole. The deficit of hanging deaths was compensated for by excess in motor vehicle car exhaust suicides in the region (27% vs. 21%).

4.2.4 Darling Downs and Wide Bay region

The Darling Downs and Wide Bay region of Queensland contained a population of approximately 447 000 in 2001. One hundred and fifty-one (151) suicides were registered in the region, at a crude mortality rate of 11.3 suicides per 100 000 population (Qld=12.9). Table 14 shows the suicide numbers and rates by age group and gender for the Darling Downs and Wide Bay region. Male suicide rates peaked in 45–54 year olds (29.7 per 100 000). Among males aged 25–34 years, the suicide mortality rate in the region was significantly lower than the whole of Queensland (20.0 vs. 34.4 per 100 000). However, in the older male age groups (45–54, 55–64, 65–74), the male rates were up to 29% higher than those of Queensland, yet these differences did not reach statistical significance. Overall, the rate of suicide for females in this region was slightly lower than the state rate, with only one age-specific rate calculated (25–34 years, 12.1 per 100 000).

Table 14

Suicide numbers, rates, and standardised mortality ratios by gender and age group, Darling Downs and Wide Bay, 1999–2001

	Number	Population	Rate	SMR[1]	95% CI
Male					
0-14yrs	0	50988	-	-	-
15-24yrs	18	28655	20.9	0.83	0.49-1.31
25-34yrs	16	26657	20.0	0.58	0.33-0.94
35-44yrs	19	30921	20.5	0.71	0.43-1.11
45-54yrs	27	30336	29.7	1.26	0.83-1.83
55-64yrs	19	25401	24.9	1.22	0.74-1.91
65-74yrs	15	17994	27.8	1.29	0.72-2.12
75yrs+	6	11841	-	-	-
All ages	120	222793	18.0	0.90	0.74-1.07
Female					
0-14yrs	1	47908	-	-	-
15-24yrs	6	27724	-	-	-
25-34yrs	10	27519	12.1	1.29	0.62-2.37
35-44yrs	6	32341	-	-	-
45-54yrs	4	30316	-	-	-
55-64yrs	1	24139	-	-	-
65-74yrs	3	17604	-	-	-
75yrs+	0	16492	-	-	-
All ages	31	224043	4.6	0.87	0.59-1.24
Persons					
0-14yrs	1	98896	-	-	-
15-24yrs	24	56379	14.5	0.95	0.61-1.41
25-34yrs	26	54176	16.0	0.73	0.48-1.08
35-44yrs	25	63262	13.2	0.71	0.46-1.05
45-54yrs	31	60652	17.0	1.15	0.78-1.52
55-64yrs	20	48540	13.5	0.98	0.60-1.52
65-74yrs	18	35598	16.9	1.28	0.76-2.02
75yrs+	6	28333	-	-	-
All ages	151	446836	11.3	0.87	0.70-1.09

[1] Queensland =1

- Not calculated because the number of suicides was less than 10.

Figure 56

Gender ratio of suicides, Darling Downs and Wide Bay, 1999–2001

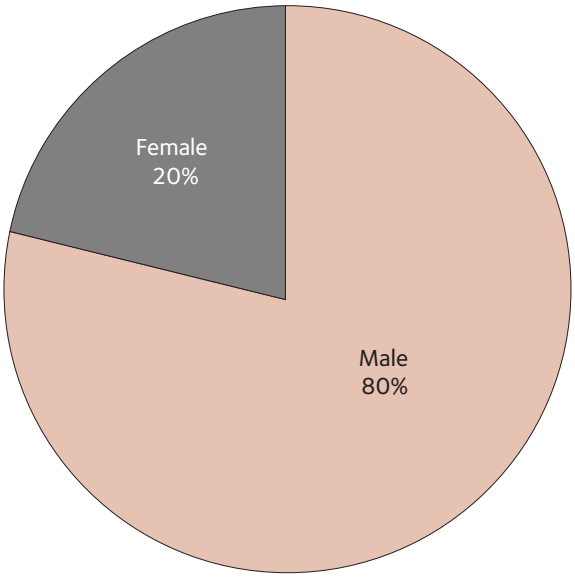


Figure 57

Proportion of suicides by broad age group, Darling Downs and Wide Bay, 1999–2001

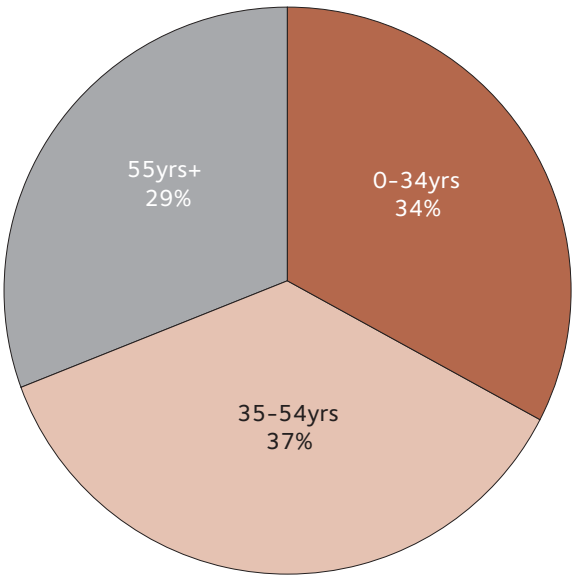
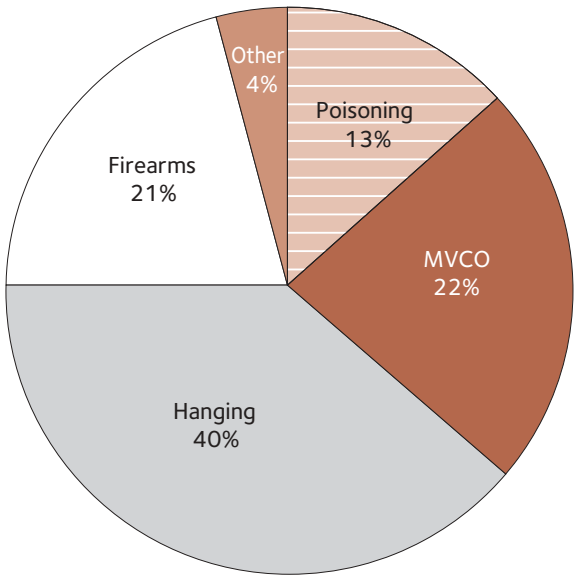


Figure 58

Method used as proportion of all suicides, Darling Downs and Wide Bay, 1999–2001



Figures 56 to 58 show the distribution of suicides according to gender, broad age group, and method used for Darling Downs and Wide Bay. The gender ratio in the region was approximately 4:1, similar to the ratio for the whole of the state (Qld=3.8:1). The Darling Downs and Wide Bay region had the highest proportion of suicides among persons aged 55 years and over (29%), and the lowest proportion of suicides among persons aged less than 35 years (34%). The Darling Downs and Wide Bay region had the highest proportion of firearm suicides in the state (21%; Qld=12%). However, hanging (40%) and motor vehicle car exhaust (22%) were still the most common methods of suicide, accounting for almost two-thirds of all suicides.

4.2.5 Western region

The Western region of Queensland contained a population of approximately 75 000 in 2001. Forty-eight (48) suicides were registered in the study period, at a mortality rate of 21.2 per 100 000, 64% (statistically significant) greater than the Queensland rate (Qld=12.9). The Western region had the highest suicide rate for any region of the state. Table 15 shows the suicide numbers and rates by age group and gender for the Western region. Due to the small absolute numbers of suicides in the region, most age-specific rates could not be calculated. The male suicide rate was (significantly) 75% higher than the Queensland male rate, with a peak in the 15–24 year age group (60.5 per 100 000 – nearly two and a half times the state rate for this age group). There were too few suicides by females to calculate reliable rates for this period. For all persons aged 15 to 24 in the Western region, the suicide rate was significantly higher than the state average (36.0 vs. 15.0).

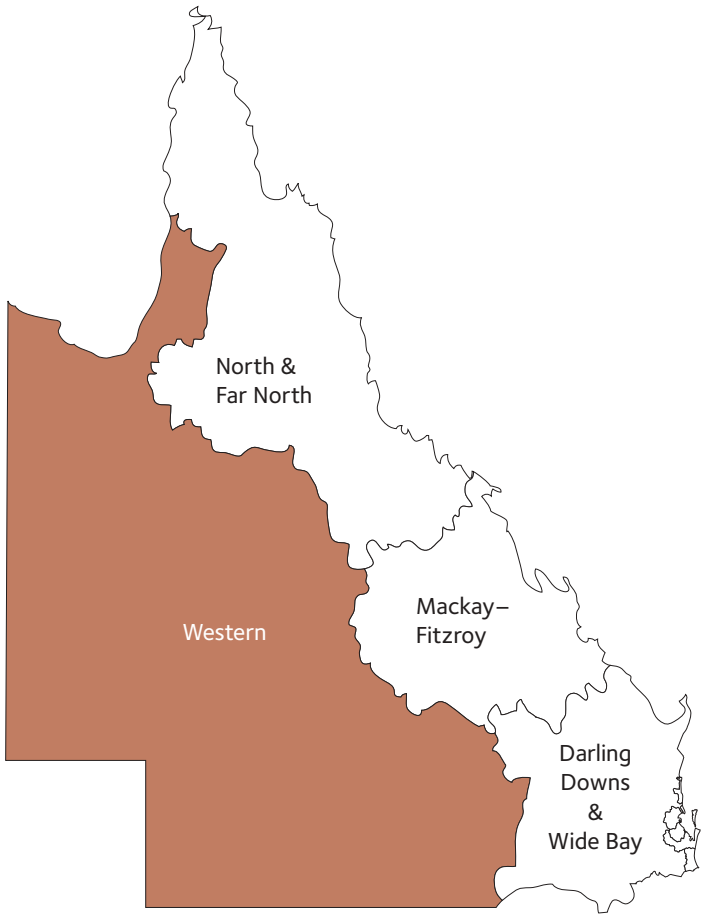


Table 15

Suicide numbers, rates, and standardised mortality ratios by gender and age group, Western, 1999–2001

Number	Population	Rate	SMR[1]	95% CI	
Male					
0-14yrs	2	9883	-	-	-
15-24yrs	10	5513	60.5	2.40	1.15-4.41
25-34yrs	10	6750	49.4	1.44	0.69-2.64
35-44yrs	9	6321	-	-	-
45-54yrs	6	5032	-	-	-
55-64yrs	3	3451	-	-	-
65-74yrs	2	2033	-	-	-
75yrs+	0	1076	-	-	-
All ages	42	40059	34.9	1.75	1.26-2.36
Female					
0-14yrs	0	9183	-	-	-
15-24yrs	1	4684	-	-	-
25-34yrs	1	6252	-	-	-
35-44yrs	2	5468	-	-	-
45-54yrs	1	4124	-	-	-
55-64yrs	0	2661	-	-	-
65-74yrs	1	1675	-	-	-
75yrs+	0	1325	-	-	-
All ages	6	35372	-	-	-
Persons					
0-14yrs	2	19066	-	-	-
15-24yrs	11	10197	36.0	2.40	1.20-4.29
25-34yrs	11	13002	28.2	1.29	0.65-2.31
35-44yrs	11	11789	31.1	1.68	0.84-3.01
45-54yrs	7	9156	-	-	-
55-64yrs	3	6112	-	-	-
65-74yrs	3	3708	-	-	-
75yrs+	0	2401	-	-	-
All ages	48	75431	21.2	1.64	1.21-2.18

[1] Queensland =1

- Not calculated because the number of suicides was less than 10.

Figure 59

Gender ratio of suicides, Western, 1999–2001

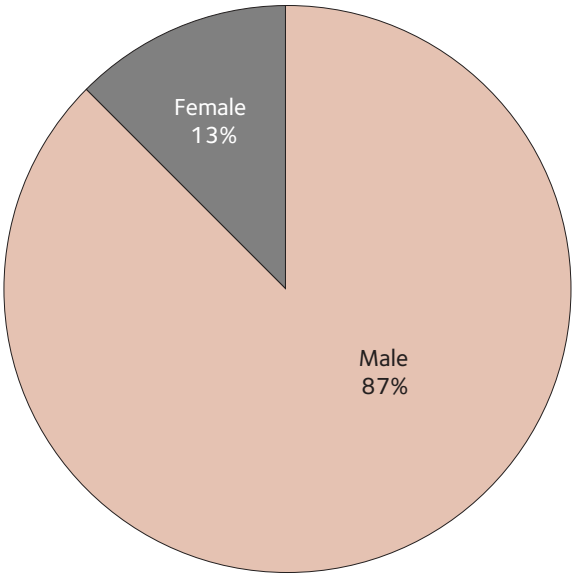


Figure 60

Proportion of suicides by broad age group, Western, 1999–2001

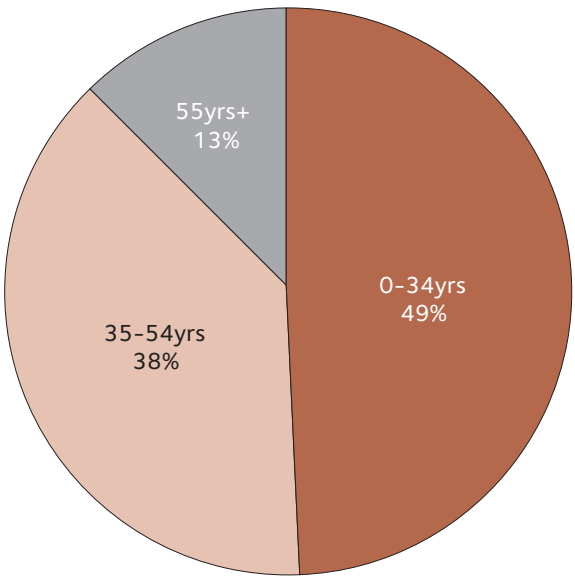
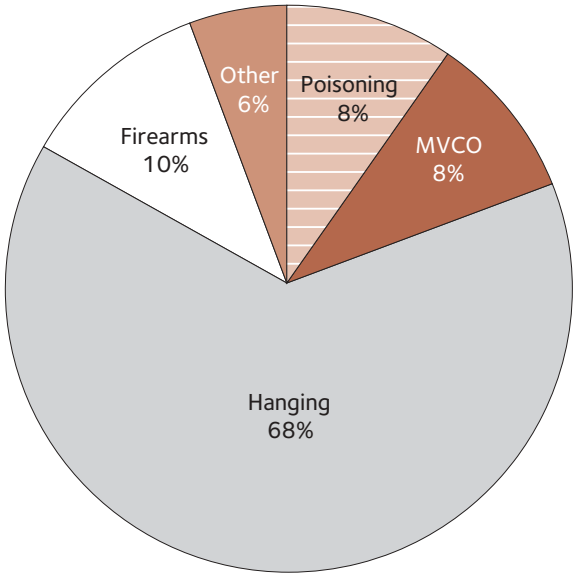


Figure 61

Method used as proportion of all suicides, Western, 1999–2001



Figures 59 to 61 show the distribution of suicides in the Western region according to gender, broad age groups, and method used. The gender ratio in the Western region of approximately 6.7:1 was the highest of any region in Queensland (Qld=3.8:1). Approximately half (49%) of all suicides in the region were accounted for by persons under 35 years of age, with only 13% accounted for by persons aged 55 years and over. These proportions are the Queensland-wide extremes. Over two-thirds (68%) of all suicides in the Western region were from hanging – the largest proportion of any method anywhere in the state. The remaining methods were relatively evenly distributed among the remaining suicides, with firearms showing a marked decrease from the previous investigation period [1996–1998] (10% vs. 38%).

4.2.6 Mackay–Fitzroy region

The Mackay–Fitzroy region of Queensland contained a population of approximately 319 000 in 2001. One hundred and fifteen (115) suicides were registered in the region during the period 1999–2001. This represents a suicide mortality rate of 12.0 (Qld=12.9). Table 16 reports suicide numbers and rates for the Mackay–Fitzroy region by gender and age group. Among males, the highest mortality rate was for 25–34 year olds (33.6 per 100 000). The age-specific suicide rates for males were similar to or just below the state rates. No age-specific suicide rates could be calculated for females due to small numbers, however, the overall female rate for Mackay–Fitzroy was almost 20% lower than the state average (difference not significant).

Table 16

Suicide numbers, rates, and standardised mortality ratios by gender and age group, Mackay–Fitzroy, 1999–2001

Number	Population	Rate	SMR[1]	95% CI	
Male					
0-14yrs	1	38516	-	-	-
15-24yrs	17	22893	24.8	0.98	0.57-1.57
25-34yrs	23	22826	33.6	0.98	0.62-1.47
35-44yrs	19	25782	24.6	0.86	0.52-1.34
45-54yrs	14	23085	20.2	0.86	0.47-1.44
55-64yrs	9	15270	-	-	-
65-74yrs	4	9394	-	-	-
75yrs+	8	5418	-	-	-
All ages	95	163184	19.4	0.97	0.79-1.19
Female					
0-14yrs	1	36388	-	-	-
15-24yrs	3	21307	-	-	-
25-34yrs	5	22729	-	-	-
35-44yrs	5	25104	-	-	-
45-54yrs	4	20742	-	-	-
55-64yrs	2	13214	-	-	-
65-74yrs	0	8894	-	-	-
75yrs+	0	7724	-	-	-
All ages	20	156102	4.3	0.81	0.49-1.24
Persons					
0-14yrs	2	74904	-	-	-
15-24yrs	20	44200	15.1	1.01	0.61-1.55
25-34yrs	28	45555	20.5	0.94	0.62-1.36
35-44yrs	24	50886	15.7	0.71	0.43-1.09
45-54yrs	18	43827	13.7	0.93	0.55-1.46
55-64yrs	11	28484	12.9	0.94	0.47-1.68
65-74yrs	4	18288	-	-	-
75yrs+	8	13142	-	-	-
All ages	115	319286	12.0	0.93	0.77-1.12

[1] Queensland =1

- Not calculated because the number of suicides was less than 10.

Figure 62

Gender ratio of suicides, Mackay–Fitzroy, 1999–2001

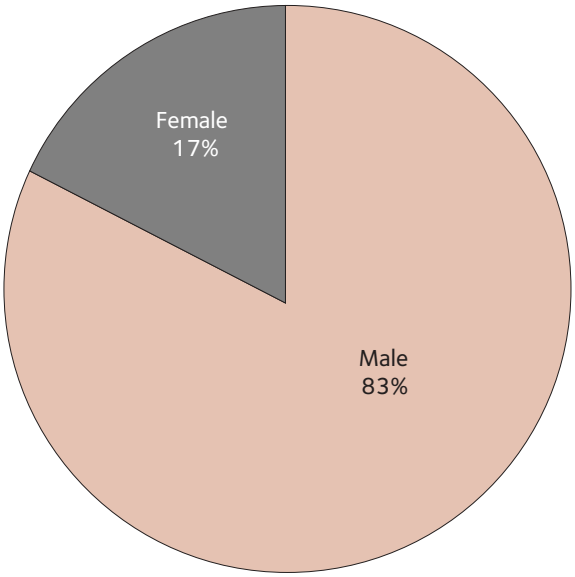


Figure 63

Proportion of suicides by broad age group, Mackay–Fitzroy, 1999–2001

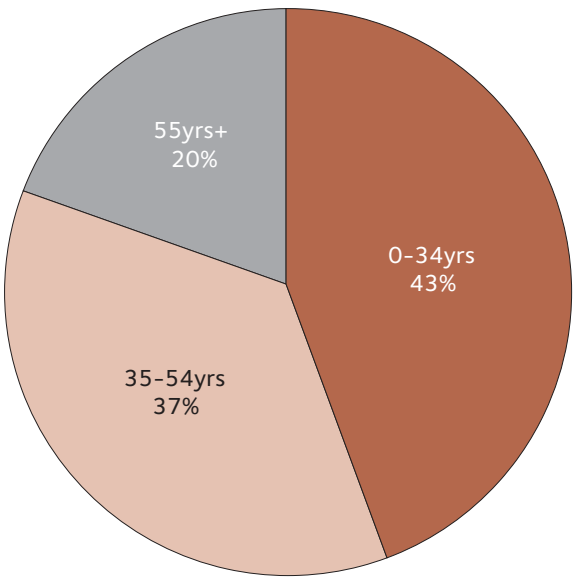
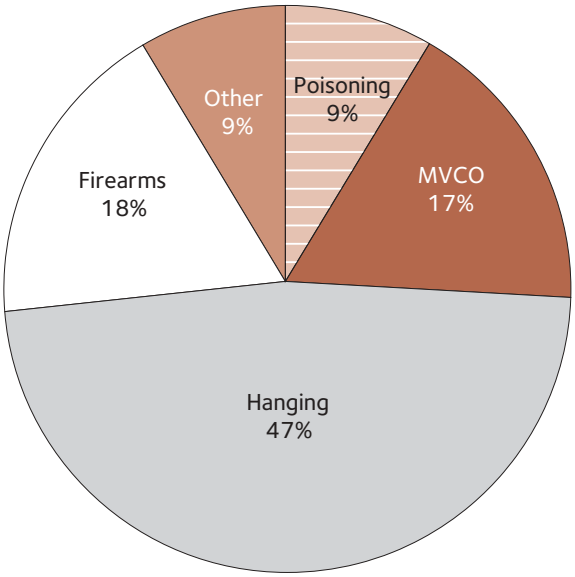


Figure 64

Method used as proportion of all suicides, Mackay–Fitzroy, 1999–2001



Figures 62 to 64 show the distribution of suicides according to gender, broad age group, and method used for Mackay–Fitzroy. The gender ratio in Mackay–Fitzroy was approximately 4.9:1 (Qld=3.8:1). The greatest proportion of suicides was by persons aged under 35 years old (43%), with an additional 37% of suicides by people aged 35 to 54 years. Almost half of all suicides in the region were from hanging (47%). Firearm use (18% vs. 12%) was more common in Mackay–Fitzroy than the Queensland average, while motor vehicle exhaust (17% vs. 21%) and poisoning (9% vs. 13%) were less prevalent in comparison to the state as a whole.

4.2.7 North and Far North region

The North and Far North region contained a population of approximately 413 000 in 2001. One hundred and eighty-one (181) suicides were registered in the region between 1999 and 2001. This represented a suicide mortality rate of 14.6 (Qld=12.9), the second highest region in Queensland (behind Western). Additionally, three of the twelve suicides by persons under 15 years of age occurred in the North and Far North region. Table 17 shows the suicide numbers and rates for the region by gender and age group. Overall, rates of suicide for males, females, and persons in the North and Far North region were slightly higher than the state rates. Among males, the highest mortality rates were for 35–44 year olds (31.6 per 100 000) and 65–74 year olds (31.5 per 100 000). Among females, the highest mortality rate was for 45–54 year olds (12.6 per 100 000) whose rate was more than two-times the state rate. Overall, while the North and Far North female rate was 21% greater than the Queensland female rate, the difference was not statistically significant.

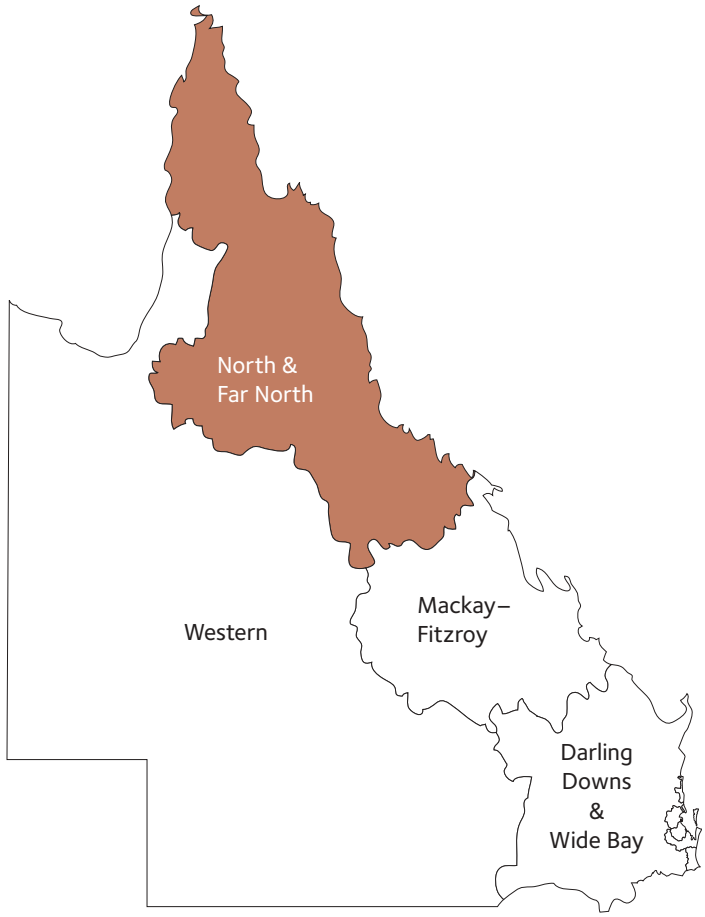


Table 17

Suicide numbers, rates, and standardised mortality ratios by gender and age group, North and Far North, 1999–2001

	Number	Population	Rate	SMR[1]	95% CI
Male					
0-14yrs	2	48769	-	-	-
15-24yrs	28	30009	31.1	1.23	0.82-1.78
25-34yrs	28	32229	29.0	0.84	0.56-1.22
35-44yrs	31	32685	31.6	1.10	0.75-1.56
45-54yrs	19	28669	22.1	0.94	0.56-1.46
55-64yrs	16	18806	28.4	1.39	0.79-2.26
65-74yrs	11	11644	31.5	1.46	0.73-2.61
75yrs+	7	7075	-	-	-
All ages	142	209886	22.6	1.13	0.89-1.44
Female					
0-14yrs	1	45953	-	-	-
15-24yrs	6	28686	-	-	-
25-34yrs	10	32305	10.3	1.10	0.53-2.02
35-44yrs	10	32264	10.3	1.20	0.58-2.21
45-54yrs	10	26422	12.6	2.10	1.01-3.87
55-64yrs	1	16734	-	-	-
65-74yrs	1	10877	-	-	-
75yrs+	0	9653	-	-	-
All ages	39	202894	6.4	1.21	0.86-1.65
Persons					
0-14yrs	3	94722	-	-	-
15-24yrs	34	58695	19.3	1.29	0.89-1.80
25-34yrs	38	64534	19.6	0.90	0.64-1.24
35-44yrs	41	64949	21.0	1.14	0.82-1.54
45-54yrs	29	55091	17.5	1.19	0.79-1.70
55-64yrs	17	35540	15.9	1.16	0.68-1.86
65-74yrs	12	22521	17.8	1.35	0.70-2.35
75yrs+	7	16728	-	-	-
All ages	181	412780	14.6	1.13	0.91-1.41

[1] Queensland =1

- Not calculated because the number of suicides was less than 10.

Figure 65

Gender ratio of suicides, North and Far North, 1999–2001

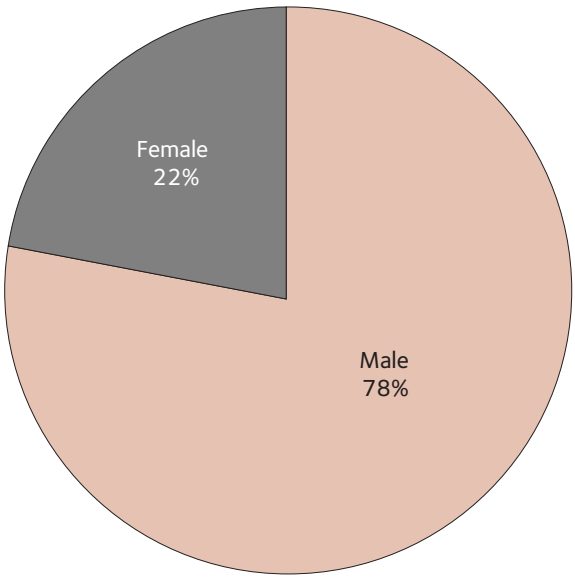


Figure 66

Proportion of suicides by broad age group, North and Far North, 1999–2001

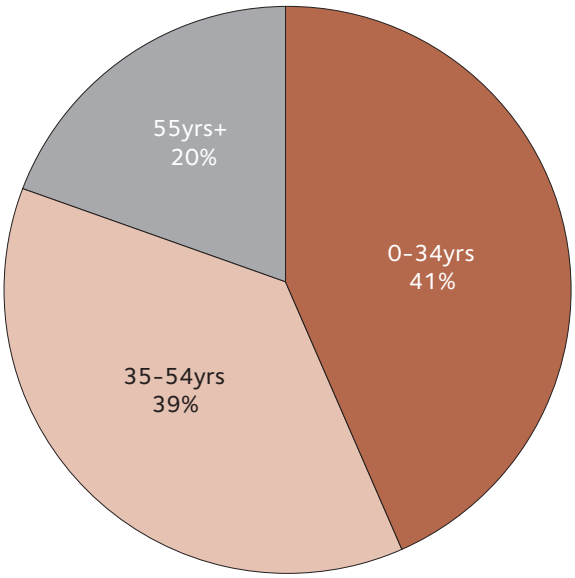
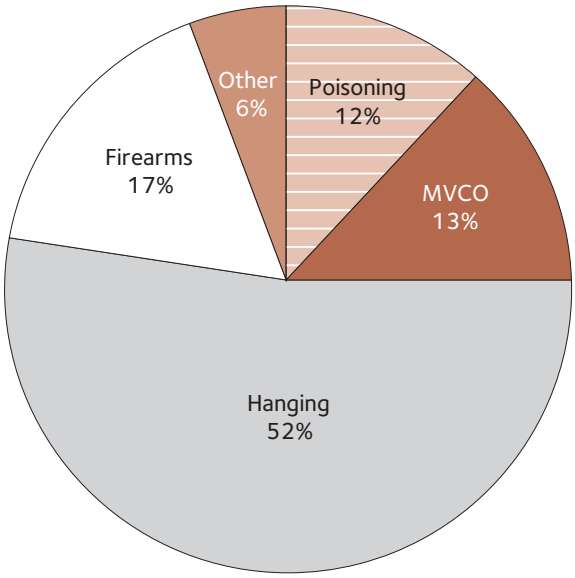


Figure 67

Method used as proportion of all suicides, North and Far North, 1999–2001



Figures 65 to 67 show the distribution of suicides by gender, broad age group, and method used for the North and Far North region. The gender ratio for the North and Far North region is approximately 3.5:1 (Qld=3.8:1). The broad age group distribution in the region was quite similar to the Queensland age distribution, with more than forty percent of suicides by those under 35 years of age. More than half of the suicides in the North and Far North region were by hanging (52%). The second most common method was firearms, which proportion was greater than the Queensland average (17% vs. 12%) and comparable to the Mackay–Fitzroy and Darling Downs and Wide Bay regions. Motor vehicle carbon monoxide poisoning was less common in this region than all other regions (except Western).

5. Specific sub-populations

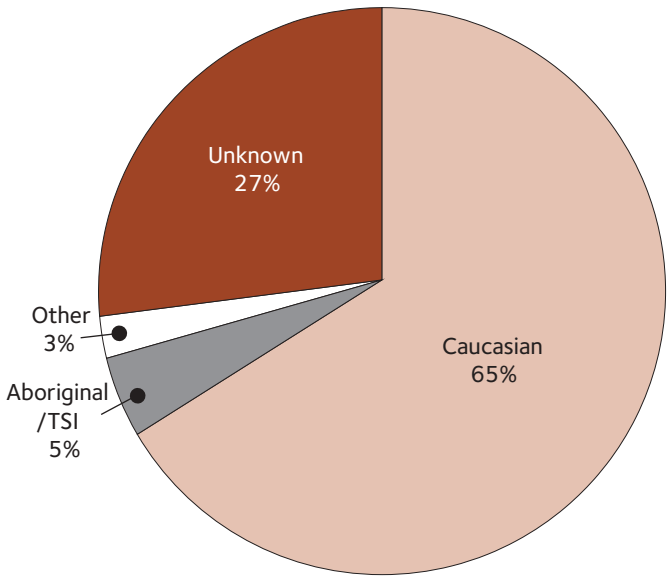
5.1 Suicides by indigenous people

The ethnicity of deceased persons in Queensland is not recorded in a consistent manner, and is often not recorded on official documentation such as post-mortem forms. Therefore, it is difficult to calculate suicide rates for specific ethnic groups, including indigenous Australians. Of the 1494 deaths registered in Queensland between 1999 and 2001, the ethnic background of the deceased was not reported in any documentation (i.e. Post-mortem, Form 4, or Psychological autopsy) for 387 subjects (27%).

In Queensland, 1998 was the first year in which indigenous status was recorded as a separate question on death certificates, and as a result complete ascertainment of indigenous status was likely to be still incomplete. Further, unlike birth registration that is self-reported and would be a requirement for certain benefits, death registration is a less rigorous process that is reliant on whoever completes the form (usually a funeral director or doctor) to record indigenous status. Moreover, deaths in the regional and remote parts of Queensland (where indigenous population is more dense) are less likely to be registered. The reduced propensity to ascertain indigenous status of the deceased where it is unclear is likely to lead to a significant under-reporting of indigenous deaths. Recent changes in the forms used by pathologists and police from the year 2003 onwards are expected to correct this problem. Figure 68 shows the distribution of suicides by ethnic background, including cases where ethnicity was not recorded.

Figure 68

Distribution of suicides by ethnicity, Queensland, 1999–2001



Suicide rates for indigenous people can be calculated using either a conservative or liberal method. Using a conservative calculation, only deaths where the ethnic background of the person was listed as Aboriginal or Torres Strait Islander would be included (n=73). This method yields a rate of 20.1 per 100 000 population of all ages (33.8 per 100 000 for males and 7.0 per 100 000 for females). Using a liberal calculation, it would be assumed that not recording ethnicity is a random event or random error, which means that the distribution of ethnicity for deaths where ethnicity was not recorded should be the same as the distribution for deaths where ethnicity was recorded. Based on this assumption, the number of indigenous suicides during the period could have been as high as 100. The liberal calculation yields a rate of 27.5 per 100 000. The true rate of suicide for indigenous people for the period 1999–2001 therefore probably lies somewhere between 20.1 per 100 000 and 27.5 per 100 000. However, given the increased publicity and awareness of high rates of suicide among indigenous persons over the last few years, the ethnicity of indigenous persons may be more likely to be recorded as such, compared to previous years. Nonetheless, inaccuracies continue to exist in the reporting of ethnicity for suicide deaths – and rates reported here for the indigenous subgroup are more likely an underestimate of the true rates. To avoid unnecessary complications and assumptions, all remaining data presented for the indigenous population are based on the conservative calculation.

Table 18 presents mortality rates for indigenous people by gender and age group, in comparison to the whole of Queensland. Among indigenous males, the highest mortality rate was for 15–24 year olds (86.9 per 100 000). The rates of suicide by 15–24 and 25–34 year old indigenous males were three and two times greater than the state average, respectively. These differences were statistically significant. The overall rate of indigenous suicide by females was slightly greater than the state as a whole, however this disparity was not statistically significant.

The Australian indigenous population has a much younger age structure than that of the total Australian population (Figure 69), with 39% of the population aged under 15 (compared to 21% for the total population), and only 3% aged over 65 (compared to 13% of the total population). In 2001, the median age of the indigenous population was 21 years, compared to 36 years for the total population (ABS, 2003). The average age of suicides by indigenous people between 1999 and 2001 was 26.2 years (95% CI: 23.8–28.6), which was significantly lower than the mean age for the entire state of Queensland (40.9 years).

Table 18

Suicide numbers, mortality rates and standardised mortality ratios for indigenous people by gender and age group, Queensland, 1999–2001

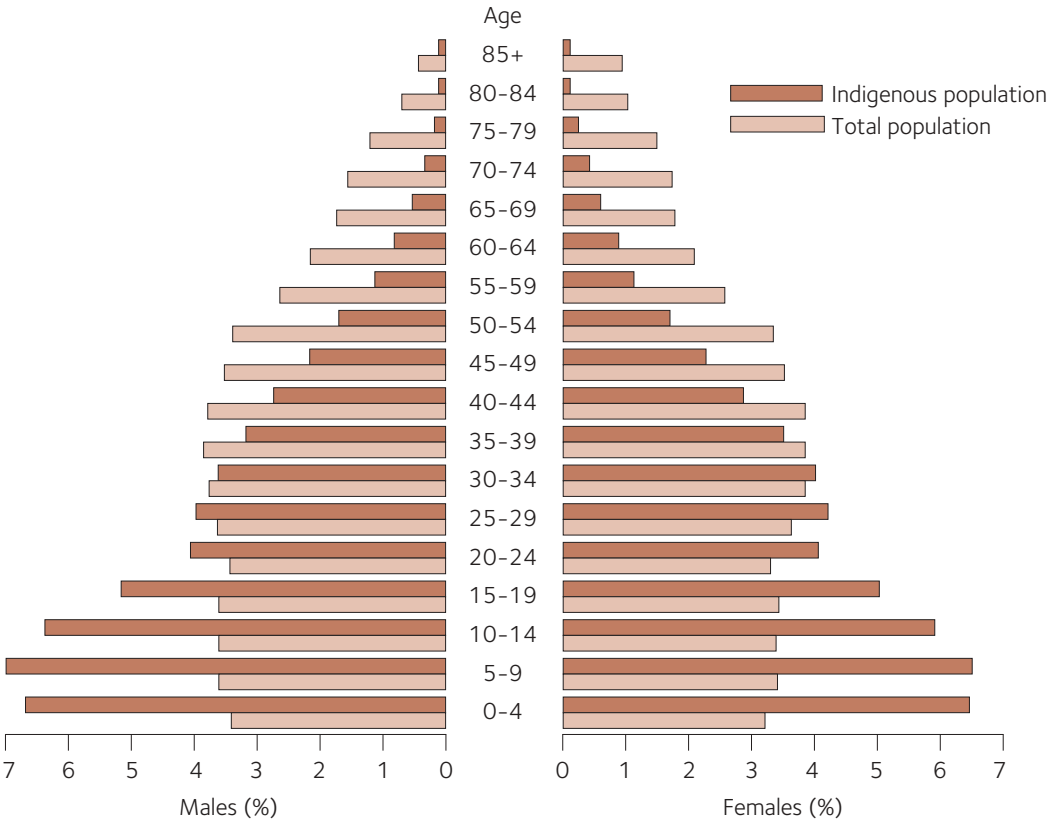
	Number	Population	Rate	SMR[1]	95% CI
Males					
0-14yrs	1	24615	-	-	-
15-24yrs	28	10741	86.9	3.45	2.29-4.98
25-34yrs	21	8901	78.6	2.29	1.42-3.49
35-44yrs	7	6969	-	-	-
45-54yrs	1	4455	-	-	-
55-64yrs	1	2024	-	-	-
65-74yrs	1	1044	-	-	-
75yrs+	0	448	-	-	-
All Ages	60	59164	33.8	1.69	1.29-2.18
Female					
0-14yrs	1	23498	-	-	-
15-24yrs	7	11278	-	-	-
25-34yrs	3	10305	-	-	-
35-44yrs	1	7601	-	-	-
45-54yrs	1	4811	-	-	-
55-64yrs	0	2501	-	-	-
65-74yrs	0	1197	-	-	-
75yrs+	0	656	-	-	-
All Ages	13	61847	7.0	1.32	0.70-2.26
Persons					
0-14yrs	2	48113	-	-	-
15-24yrs	35	22019	53.0	3.53	2.46-4.91
25-34yrs	24	19206	41.7	1.91	1.22-2.84
35-44yrs	8	14570	-	-	-
45-54yrs	2	9233	-	-	-
55-64yrs	1	4525	-	-	-
65-74yrs	1	2241	-	-	-
75yrs+	0	1104	-	-	-
All Ages	73	121011	20.1	1.56	1.22-1.96

[1] Queensland=1

- Not calculated because the number of suicides was less than 10.

Figure 69

Age structure of the indigenous and non-indigenous populations, based on experimental estimates, Australia, 2001



Source: ABS 2003

As stated earlier, identification of the ethnic identity of deceased persons has always been difficult and accurate identification of indigenous Australians has been especially difficult. The estimates reported here are likely to be an underestimate of the actual numbers of indigenous suicide. In addition, population estimates of Aboriginal and Torres Strait Islander peoples are at best an underestimate of the true population of indigenous Australians. Thus the mortality rates for indigenous Australians reported here are to be treated with caution.

Table 19 shows the number of suicides by indigenous people according to the region in which they lived, by gender. For most regions, small numbers prevented calculation of region-specific rates. However, for males, indigenous suicide rates were calculated for the North and Far North region (40.7 per 100 000), the Western region (69.2 per 100 000), and the Mackay–Fitzroy region (81.6 per 100 000). Standardised mortality ratios were performed against the general population suicide rates for these areas, all of which were statistically significant. In the Mackay–Fitzroy region, indigenous people had suicide rates more than four times that of the general population (SMR=4.20, 95% CI= 2.10–7.52). Rates in the Western region for indigenous people were almost two times (SMR=1.98) those of the general population (95% CI = 1.08–3.33). The indigenous rate among males in North and Far North was 80% greater than for the general male population in the region (SMR=1.80, 95% CI = 1.19–2.62).

Table 19

Number of suicides by indigenous people by gender and region

	Males		Females		Persons	
Region	Number	Pop.	Number	Pop.	Number	Pop.
Brisbane City	4	6321	1	6804	5	13125
Outer Brisbane	3	5664	0	5952	3	11616
Coastal	1	6902	0	7343	1	14245
Darling Downs & Wide Bay	0	6937	0	7236	0	14173
Mackay–Fitzroy	14	6743	3	6771	17	13514
Western	11	4496	2	4509	13	9005
North & Far North	27	22101	6	23232	33	45333

Figures 70 to 72 show the distribution of suicides by indigenous people by gender, broad age group, and method used. The gender ratio of suicides by indigenous people (4.6:1) was higher than the state average (3.8:1), and there were substantial differences in suicide distribution by age and method. The vast majority of indigenous suicides were under the age of 35 at time of death (83%) which was approximately two-times the proportion seen in Queensland as a whole (42%). Only 3% of indigenous suicides were 55 years or older, markedly lower than the 21% of all Queenslanders. Hanging (90%) accounted for almost all suicides by indigenous people between 1999 and 2001 (Qld=41%). Firearms accounted for 5% of indigenous suicides, compared to 12% of all Queensland suicides. Indigenous people rarely used other methods of suicides that are commonly used in the whole of Queensland population (e.g. motor vehicle carbon monoxide, and poisoning by solids or liquids).

Figure 70

Gender ratio of suicides among indigenous people, Queensland, 1999–2001

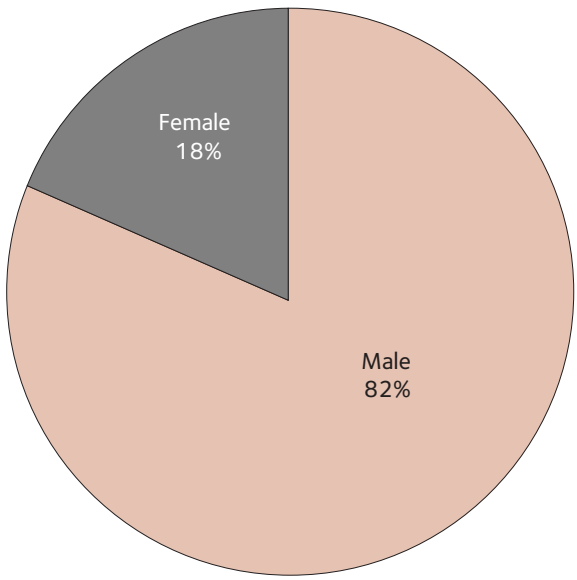


Figure 71

Proportion of suicide among indigenous people, by broad age group, Queensland, 1999–2001

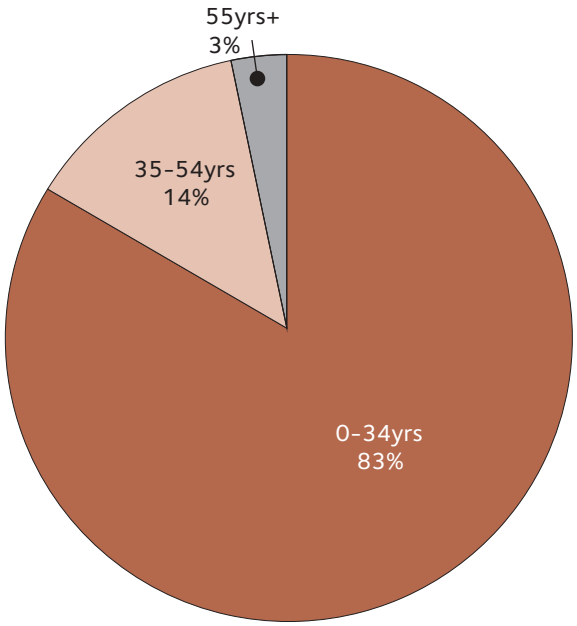
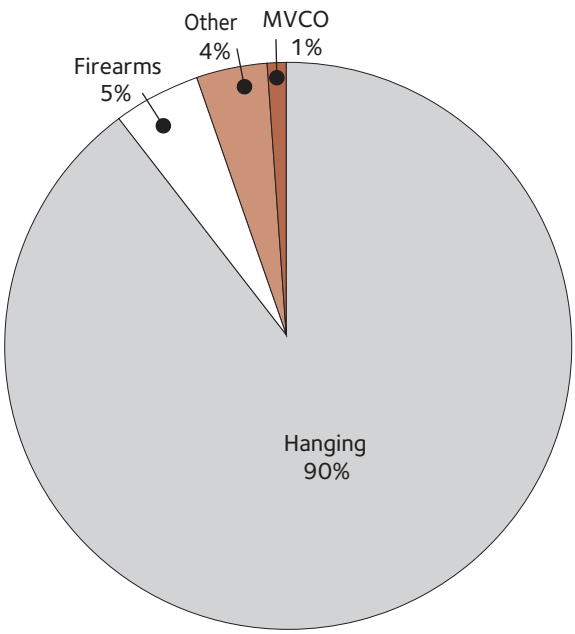


Figure 72

Method used as proportion of all suicides among indigenous people, Queensland, 1999–2001



5.2 Suicides by people under psychiatric care

During the 1999–2001 period, there were 38 suicide deaths by persons who were psychiatric inpatients at the time of death. This number does not include persons receiving outpatient or other allied psychiatric services, or persons who had completed suicide shortly after discharge from a psychiatric setting. Due to a lack of accurate data on the number of individuals in psychiatric care, it is not possible to provide mortality rates for this population.

Twenty-three (23) of these suicides were by males and fifteen (15) were females, giving a gender ratio of 1.5:1, substantially narrower than the Queensland ratio of 4:1. The majority of suicides under psychiatric care were of caucasian ethnicity (n=29), with one (1) indigenous person, and seven (7) cases where ethnicity was not registered. The average age of suicides under psychiatric care was 42.5 years (95%CI = 37.3–47.6), which was slightly older than the Queensland average age (40.9 years). Almost half of inpatient suicides were aged between 35 and 54 years (44%), with one third being under 35 years old (32%), and one quarter older than 55 (24%).

Hanging was the most common method of suicide among current inpatients, accounting for half of all deaths (n=19). Firearms (n=5), motor vehicle carbon monoxide (n=5), and poisoning by solids or liquids (n=5) were also relatively frequent. There were two cases of jumping or lying before a moving object, one case of drowning, and one instance of an inpatient jumping from a high place (i.e. Story Bridge).

During the 1996–1998 period, 52% of suicides by persons under psychiatric care occurred in non-residential urban settings (eg parks, bridges, roadsides) but during the 1999–2001 period, more than half (55%) these suicide deaths occurred outside the psychiatric facility, mainly at their own residence (n=20). Most of these patients are recorded as having absconded (n=18) at the time of their suicide, compared to the small number (n=3) that suicided while on day leave with the permission of hospital staff.

The most common diagnoses were depression (n=21; 55%), schizophrenia or an unspecified psychotic disorder (n=5; 13%), substance abuse disorder (n=3; 8%), and personality disorder (n=3; 8%). Seven (7) inpatients had more than one diagnosis. More than half the suicides under psychiatric care had communicated their suicidal intent in the 12 months preceding death (55%), with fifteen (15) inpatients having attempted suicide in the last 12 months (39%).

5.3 Suicides by people in custody

Nineteen (19) suicides were recorded among people in custody during the years 1999–2001. The majority of suicides in custody were males (n=16; 84%), and most were of caucasian ethnicity (n=12; 63%). Two (2) suicides, both male, were by indigenous people, with five cases not having ethnicity registered. The average age of suicides in custody was 34 years (95%CI=29.1–38.9), which was lower than the Queensland average (40.9 years). More than half (58%) the suicides in custody were among persons aged less than 35 years.

Calculating rates of suicide in custody, or other similar settings is challenging. Problems preventing accurate rate calculation include: the duration of imprisonment, the length of time between imprisonment and death, small numbers of death and prison populations, and variations in the definition of custodial setting. Crude rates for suicide in custody have been calculated, however these must be treated with great caution, and are best used as a guide only. The crude suicide mortality rate of persons in custody in Queensland between 1999 and 2001 was 140.2 per 100 000 population. Among males, this rate was slightly lower at 126.2 per 100 000, and rates could not be calculated for females, or for indigenous persons.

Most suicides in custody were by hanging (n=18), the one exception being poisoning (multiple drug toxicity). Most deaths occurred in the person's cell (n=11). Seven suicides (37%) occurred in both the Brisbane City and North and Far North regions of Queensland.

5.4 Suicides by people under the age of 15

Twelve (12) suicides by people under 15 years of age were registered in Queensland for the 1999–2001 period. This is the same number of deaths reported during the 3-year period of 1996–1998, and greater than the number (n=7) reported over a six-year period from 1990–1995 (Baume et al., 1998). Unlike the previous period (1996–1998) where the majority of suicides occurred in one single year (n=8 in 1996), suicides were spread across the three years of the current investigation: five (5) suicides reported in 1999, three (3) in 2000, and four (4) in 2001.

The gender split was narrow, with seven (7) males and five (5) females under 15 years dying by suicide over this period. Hanging accounted for most suicides (n=10), with the remaining two (2) suicides caused by firearms. The youngest death was by a ten-year old boy; the other suicides were by minors aged 13 (n=3) and 14 years old (n=8). The majority of under-15 suicides (n=7) were of caucasian ethnicity, with one male and one female suicide death of indigenous origin.

The majority of suicides took place in the residence of the suicide victim (n=10). Previous attempts at suicide using poisoning (n=2) or cutting instruments (n=1) were recorded for three persons. Nearly half of these young persons were reported to have been experiencing difficulties at school during the period leading up to their death.

6. Comparison between 1990–1995, 1996–1998, and 1999–2001

Some parts of this report have been compared to previous reports on suicide in Queensland, for the period 1996–1998 (De Leo & Evans, 2002), and (where possible) to the period 1990–1995 (Baume et al., 1998). The gender ratio of suicides in all periods was very similar (3.9:1 vs. 4.0:1 vs. 3.8:1, for 1990–1995, 1996–1998 and 1999–2001 respectively). The distribution of suicides by broad age group has not changed markedly over the three periods of investigation. In all periods, the highest proportion of suicides occurred in the under 35 years age group (42%, 45%, 42%, in 1990–1995, 1996–1998, and 1999–2001 respectively). Similar proportions were seen in both the middle-aged group (35–54 years) and older age group (55 years and over) across all three periods.

Overall, the rate of suicide mortality decreased from 16.6 per 100 000 (1996–1998) to 13.7 per 100 000, which was a statistically significant difference. The suicide rate for the current period is much more similar to the one reported in Queensland between 1990–1995 of 14.5 per 100 000 (Baume et al., 1998), and suggests that the high rates seen in between 1996 and 1998 may have been an anomaly. Suicide rates have decreased across Australia and in most countries around the world since peaks between 1996 and 1998.

Suicide rates by regional area for the current period (1999–2001) have been compared to consecutive three-year periods in Table 20. Data from the Queensland Suicide Register for the years 1990 to 1995 was reclassified using the seven region system that has been utilised in both the current and previous reports. Rates for the years 1990 to 1995 were calculated in the previous report, and based on estimated residential populations in 1997 and annual population growth figures (see De Leo and Evans (2002) for more information).

Among males, the most notable shifts have been in the Darling Downs and Wide Bay and North and Far North regions, which have experienced declines to the lowest levels seen across periods, and in Outer Brisbane, where rates have declined sharply after increasing over the previous three periods. Among females, the most notable change has been in the Coastal and Brisbane City regions, where sharp declines have been experienced (by almost 80% in the Coastal region from 1996–1998 to 1999–2001).

The current report has utilised a different categorisation of rurality than the previous two reports, to incorporate three levels of remoteness. The current report revealed significant differences between suicide rates in metropolitan, regional, and remote areas of Queensland, among both genders – differences that the previous two category system failed to find. These changes in categorisation prevent comparison between the periods.

The use of suicide methods has changed substantially over the various periods of investigation. The patterns of method use in the periods 1990–1992, 1993–1995, 1996–1998, and 1999–2001 are shown in Table 21. The trends described in the previous report, of shift away from firearms or poisoning to hanging have continued from 1999–2001. Hanging is now clearly the commonest method of suicide, followed by motor vehicle carbon monoxide, poisoning, and firearms. From 1990–1992 and 1993–1995, firearms were the most common method of suicide, yet for 1999–2001, it was the fourth commonest method. This is reflective of the restriction in access to firearms due to policy and legislation changes at both the state and federal level in the past decade. Continued reductions in poisoning suicides may be related to improvements in packaging and prescription of potentially lethal medications, and the introduction of safer antidepressant medications (SSRIs) in recent times.

Table 20

Suicide rates by region and gender, Queensland, 1990–1992, 1993–1995, 1996–1998, and 1999–2001

		1990–1992	1993–1995	1996–1998	1999–2001
Males	Brisbane City	22.0	21.3	24.8	21.4
	Outer Brisbane	17.7	21.6	25.1	19.8
	Coastal	27.1	22.6	25.3	20.4
	Darling Downs & Wide Bay	19.3	21.8	28.2	18.0
	Mackay–Fitzroy	22.3	22.5	20.8	19.4
	Western	29.1	28.0	35.2	34.9
	North & Far North	28.1	29.1	26.4	22.6
Females	Brisbane City	7.8	7.7	6.8	5.1
	Outer Brisbane	5.0	6.2	5.8	5.9
	Coastal	7.6	6.6	10.0	5.6
	Darling Downs & Wide Bay	4.4	4.0	4.9	4.6
	Mackay–Fitzroy	4.2	3.8	3.9	4.3
	Western	-	-	-	-
	North & Far North	5.0	4.4	6.4	6.4
Persons	Brisbane City	14.8	14.4	15.6	13.0
	Outer Brisbane	11.3	13.9	15.4	12.8
	Coastal	17.2	14.5	17.5	12.9
	Darling Downs & Wide Bay	11.9	12.9	16.6	11.3
	Mackay–Fitzroy	13.5	13.4	12.6	12.0
	Western	17.2	18.0	22.4	21.2
	North & Far North	17.2	17.2	16.7	14.6

Table 21

Suicide method as a proportion of all suicides in Queensland, 1990–1992, 1993–1995, 1996–1998, and 1999–2001.

	1990–1992	1993–1995	1996–1998	1999–2001
Firearms	31.8%	24.5%	15.4%	11.5%
Hanging	18.6%	24.5%	39.7%	42.6%
Poisoning	21.9%	19.9%	14.8%	13.5%
MVCO	15.9%	17.1%	18.4%	21.5%
Other	11.8%	13.9%	11.7%	10.9%

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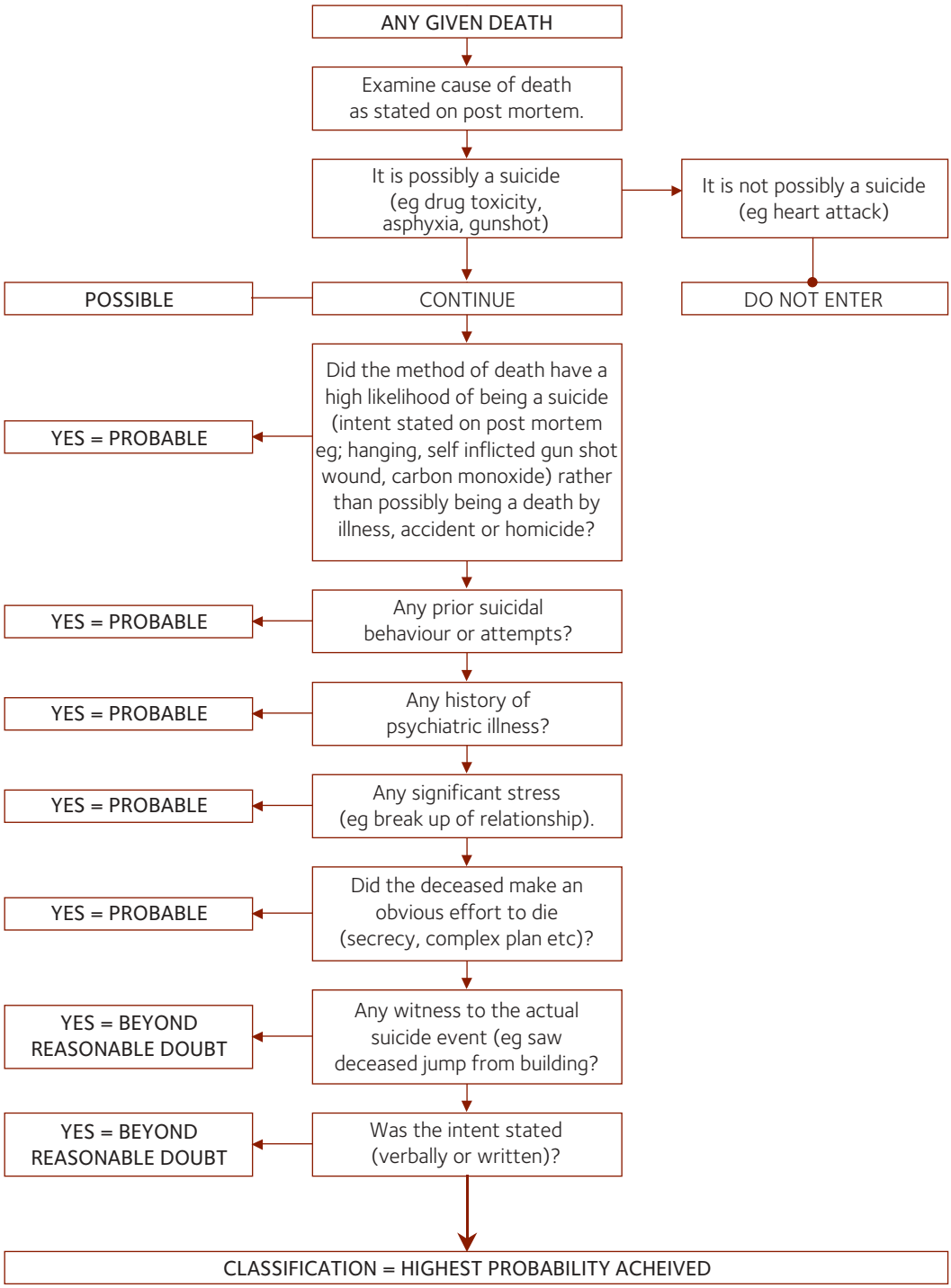
Appendix A: Suicide Classification Flow Chart



Appendix B: Classification schemes for regional statistics

The boundaries for regional statistics are based on the 1996 edition of the Australian Standard Geographical Classification (ASGC). In each edition of the ASGC, the main structure has a hierarchy of at least four spatial units: States and Territories (S/T), Statistical Divisions (SD), Statistical Subdivisions (SSD), and Statistical Local Areas (SLA)[1]. In the main structure of the ASGC, a specific selection of SLAs aggregate to form a specific SSD, a specific selection of SSDs aggregate to form a specific SD and so forth. At any hierarchical level, the spatial units collectively cover all of Australia, without gaps or overlaps. Each case of suicide was assigned an ASGC code, which identified the residential locality of the deceased at each hierarchical level of the ASGC. This code was then used to classify each case as urban or rural and assign the case to the appropriate geographical region.

Metropolitan/regional/remote

To calculate metropolitan, regional, and remote suicide mortality rates, the state was divided into these areas using the Accessibility and Remoteness Index of Australia (ARIA). Using the ARIA, each populated location in Australia can be assigned one of five categories (Highly Accessible, Accessible, Moderately Accessible, Remote, and Very Remote), which represents that location's accessibility and remoteness from services. A one-kilometre grid system was used to aid in the coding of cases to ARIA categories from their ASGC Code. Each area in Queensland was ascribed an ARIA index which correspond to one of ABS five categories of remoteness – Major Cities, Inner Regional, Outer Regional, Remote, and Very Remote.

Following the ABS categorisation:

1. Major Cities have ARIA scores between 0 and 0.20
2. Inner Regional have ARIA scores greater than 0.20 and less than or equal to 2.40
3. Outer Regional have ARIA scores greater than 2.40 and less than or equal to 5.92
4. Remote have ARIA scores greater than 5.92 and less than or equal to 10.53
5. Very Remote have ARIA scores greater than 10.53.

For the purpose of this report (and consistent with ABS use of the ARIA), metropolitan areas are those categorised as Major Cities (incl. Brisbane, Gold Coast), regional areas are those categorised as Inner Regional and Outer Regional (incl. Townsville, Toowoomba), and remote areas are those categorised as Remote and Very Remote (incl. Mt Isa, Cloncurry, Palm Island).

Over the study period, the metropolitan areas contained approximately 53% of the Queensland population (1 905 471 persons in 2001), regional areas contained approximately 44% of the Queensland population (1 610 107 persons in 2001), and remote areas contained approximately 3% of the Queensland population (113 308 persons in 2001).

Mortality rates were calculated using the number of deaths identified in metropolitan, regional, and remote areas and the population of these areas, as at Census 2001.

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[1] During a non-census year, the Statistical Local Area is the smallest spatial unit. However, during a census year, Collection Districts are defined in the ASGC, which represents the smallest spatial unit.

Geographical region

The geographical regions in this report (see Figure 43) are comprised of one or more Statistical Subdivision, as defined by the 1996 edition of the ASGC. Geographical regions and their corresponding Statistical Divisions and Statistical Subdivisions are shown in Table 22. Mortality rates for each region were calculated using the number of deaths identified in each region and the estimated resident population for each region, as at June 1997.

Table 22

Geographical regions with corresponding Statistical Divisions and Statistical Subdivisions

Geographical region	Statistical Division/s	Statistical Subdivisions
Brisbane City	Brisbane	Brisbane City
Outer Brisbane	Brisbane	Gold Coast City Part A Beaudesert Shire Part A Caboolture Shire Part A Ipswich City (Part in BSD) Logan City Pine Rivers Shire Redcliffe City Redlands Shire
Coastal (Part A and B)	Moreton	Gold Coast City Part B Sunshine Coast
Darling Downs and Wide Bay	Moreton	Moreton SD Bal
	Wide Bay–Burnett	Bundaberg Wide Bay–Burnett SD Bal
	Darling Downs	Toowoomba City Darling Downs SD Bal
Mackay–Fitzroy	Mackay	Mackay City Part A Mackay SD Bal
	Fitzroy	Rockhampton Gladstone Fitzroy SD Bal
Western	South West	South West
	Central West	Central West
	North West	North West
North and Far North	Northern	Townsville City Part A Thuringowa City Part A Northern SD Bal
	Far North	Cairns City Part A Far North SD Bal

Detailed information on the structure and purpose of the ASGC is available in the ABS publication *"Statistical Geography Volume 1: Australian Standard Geographical Classification (ASGC)"* (Catalogue Number 1216.0 1996).

Detailed information on the structure and purpose of the ARIA is available in the publication *"Measuring Remoteness: Accessibility/Remoteness Index of Australia (ARIA), Revised Edition"* (Occasional Paper Number 14, Department of Health and Aged Care, 2001).