Australian Government
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# Suicide and hospitalised self-harm in Australia

## Trends and analysis


INJURY RESEARCH AND STATISTICS SERIES NO. 93

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*Authoritative information and statistics to promote better health and wellbeing*

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Australian Institute of Health and Welfare
Canberra

Cat. no. INJCAT 169

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This publication is part of the Australian Institute of Health and Welfare's Injury research and statistics series. A complete list of the Institute's publications is available from the Institute's website <www.aihw.gov.au>.

ISSN 1444-3791
ISBN 978-1-74249-669-6

**Suggested citation**
AIHW: Harrison JE & Henley G 2014. Suicide and hospitalised self-harm in Australia: trends and analysis. Injury research and statistics series no. 93. Cat. no. INJCAT 169. Canberra: AIHW.



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Published by the Australian Institute of Health and Welfare

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**Please note that there is the potential for minor revisions of data in this report. Please check the online version at <www.aihw.gov.au> for any amendments.**

# Contents

# Acknowledgments

The Australian Institute of Health and Welfare (AIHW) acknowledges the financial and project support for this publication provided by the Australian Government Department of Health.

Acknowledgement is also given to the staff at the National Coronial Information System (NCIS) in the Victorian Department of Justice for provision of NCIS data, along with the Coroners and their staff in each state and territory who contribute data to the NCIS system and to officers of state and territory death registries and the ABS officers who assign cause of death codes.

Members of the AIHW National Injury Surveillance Unit Advisory Committee provided valuable comments on a draft.

# Abbreviations

| | |
|---|---|
| ABS | Australian Bureau of Statistics |
| AIHW | Australian Institute of Health and Welfare |
| ASGC | Australian Standard Geographical Classification |
| CO | carbon monoxide |
| COHb | carboxyhaemoglobin |
| Gen X | Generation X |
| Gen Y | Generation Y |
| iGen | iGeneration |
| ICD | International Statistical Classification of Diseases and Related Health Problems |
| ICD-10 | International Statistical Classification of Diseases and Related Health Problems, 10th Revision |
| ICD-10-AM | International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification |
| MCoD | multiple cause of death |
| MLOS | mean length of stay |
| NCIS | National Coronial Information System |
| NMDS | National Minimum Data Set |
| MV | motor vehicle |
| SEIFA | Socio-Economic Indexes for Areas |
| SLA | Statistical Local Area |
| UCoD | underlying cause of death |
| WHO | World Health Organization |
| WW2 | World War 2 |

# Symbols

| | |
|---|---|
| – | nil or rounded to zero |
| n.a. | not available |
| n.p. | not publishable because of small numbers, confidentiality or other concerns about the quality of the data |

# Summary

## Trends in suicide rates

Suicide death rates for males, adjusted for age, fluctuated around 20 deaths per 100,000 population per year in the period 1921 to 2010. Rates for females were about 5 deaths per 100,000 population per year in most of this period, peaking above twice that rate in the 1960s.

Suicide rates for males in the Baby Boomer generation (those born from 1946 to 1965), Gen X (those born from 1966 to 1975) and Gen Y (those born from 1976 to 1985) rose more rapidly with age in their early adult years than occurred in the generations of their fathers and grandfathers. Rates for males in the iGeneration appear not to have risen as far or fast by about age 20 as the 3 preceding generations. For males born in the 20th century, suicide rates from about 50 years have been lower in each more recent generation. For females, there was no marked variation in age-specific rates between recent birth cohorts.

Male rates of suicide by hanging have more than doubled since the early 1980s. Female rates show a similar pattern, although at lower levels. Suicide by hanging has been the most common mechanism of suicide in Australia since 1989 for males and since 1997 for females.

Shooting by firearms was the most common mechanism of suicide by males in Australia for at least 60 years, to the mid-1980s, with a rate above 5 deaths per 100,000 males for nearly all of this period. Rates for males and females declined greatly from the late 1980s.

Rates of suicide due to exposure to poisons (except gas) were similar for males and females from the early 1940s through to 2010. There was a significant peak for both sexes in the 1960s, attributed mainly to barbiturate sedatives.

Poisoning by gas was largely due to carbon monoxide in domestic gas and motor vehicle exhaust gas. Until the 1960s, when toxic 'town gas' was replaced by less toxic gases in most of Australia, domestic gas was the main source, especially for women. Rates rose in the 1980s and 1990s, especially for men, when the source was almost always motor vehicle exhaust gas. A sharp decline after 1997 was most likely due to emission controls, which greatly reduced the amount of carbon monoxide permitted in the exhaust gas of new motor vehicles.

Suicide rates tended to increase with the remoteness of the person's place of residence.

For the period from 2007–08 to 2010–11, suicide rates for Indigenous males and females were around twice as high as the corresponding rates for *Other Australian* males and females.

## Trends in rates of hospitalisation due to intentional self-harm

Rates for females hospitalised as a result of intentional self-harm were at least 40% higher than male rates over the period from 1999–00 to 2011–12, with female cases out-numbering male cases most markedly in the teen years.

Poisons (except gas) accounted for almost 82% of all hospitalisations due to intentional self-harm over the period from 1999–00 to 2011–12. Contact with sharp objects and hanging accounted for a further 12% and 2% respectively.

For the period from 2007–08 to 2010–12, rates of hospitalised intentional self-harm for Indigenous males and females were around 2.5 times and 2 times as high as the rates for *Other Australian* males and females respectively.

# 1 Introduction

Suicide and intentional self-harm are significant public health problems in Australia. Since the mid-1980s, over 2,000 Australians have died by suicide each year, with counts peaking at over 2,600 in 1997 and 1998. Since the turn of the century, more than 20,000 Australians have been admitted to hospital each year as a result of intentionally self-inflicted injuries.

This report provides a statistical picture of suicide and intentional self-harm in Australia based on administrative data sources. It describes:

- deaths and hospitalised injury for 2010–11 identified as being due to intentional self-inflicted injury
- long-term trends in suicide mortality, since the early 1920s, including analyses in terms of age at death, period of death and period of birth (that is, birth cohort)
- trends in hospitalisations due to intentionally self-inflicted injury since the late 1990s (the shorter period than for deaths is due to data availability).

The main categories for analysis are age and sex, changes over time and mechanisms of self-harm. Suicide and hospitalisations due to intentional self-inflicted injury among Indigenous Australians are reported, within the limitations of data and relatively low numbers. Place of residence is also compared for states and territories; remoteness; and socio-economic status of areas (based on SEIFA).

The way in which self-harm is caused (for example, by poisoning, cutting or shooting) is often referred to as the 'mechanism' or 'means' of self-harm, with 'mechanism' being the term used in this report. Mechanisms differ greatly between subgroups of the population and have changed considerably over time, sometimes rapidly. Some changes in occurrence coincided with changes in the availability of a particular mechanism. For example, a significant increase in suicide deaths involving poisoning by drugs, peaking in the mid-1960s, has been attributed largely to changes in the availability of barbiturate sedatives (Oliver & Hetzel 1972; Whitlock 1975). The replacement, around 1970, of toxic 'town gas' by less toxic gases for domestic purposes was accompanied by much reduced rates of suicide by this mechanism in Australia (Burvill 1989). Similar reductions occurred in the United Kingdom and Japan (Kreitman 1976; Lester & Abe 1989).

Understanding such changes is important for two reasons. First, mechanisms of suicide differ greatly in lethality, as well as in frequency of use (Elnour & Harrison 2008; Spittal et al. 2012). The trend in overall suicide rates is a matter of public and policy interest, and trends are less likely to be misinterpreted if the influence of changes in mechanisms is understood. Second, restriction of access to means is one of the approaches advocated for suicide control (see McPhedran & Baker [2012] for references to some of the many papers on this topic).

Most statistical reports on suicide and intentional self-harm present data in terms of period (for example, the year in which a death occurred or a non-fatal injury was sustained) and age when those events occurred. A third perspective, also useful when reporting on suicide and intentional self-harm, is to present the events in terms of age at occurrence and period of birth (for example, Phillips et al. 2010; Snowdon & Hunt 2002). All the individuals born in a particular period (for example, a year or a decade) can be referred to as a birth cohort. While the same data are used to present data in terms of periods or cohorts, the different arrangement sometimes provides additional insights. Selected aspects of the cohort analysis

are included in the chapters on suicide trends, while additional results are presented in Appendix 2.

Many other factors have been reported to be associated with risk of suicide and intentional self-harm (DeLeo et al. 2002; McLean et al. 2008). Deaths data and population data in Australia (as in most other countries) do not generally provide data on characteristics such as mental illness and substance abuse which are thus not reported here.

# Data quality and reliability

Concerns are often expressed that statistics on suicide and intentional self-harm may be affected by errors, perhaps more than most other causes, due to difficulty in ascertaining the true motivation of actions and to the effects of social stigma. These issues have been considered in previous AIHW reports (Harrison et al. 2009; Henley & Harrison 2009) and elsewhere (Claassen et al. 2010). An extensive review of suicide by the Senate Community Affairs Reference Committee made recommendations on data definition, collection and reporting (Senate Community Affairs Reference Committee 2010).

Most statistical accounts focus on deaths by suicide, but similar issues apply to the identification of intentional self-harm cases in hospital data (Pirkis et al. 2009). Some patients may choose not to disclose that their injuries resulted from intentional self-harm, or may be unable to do so due to the nature of the injuries, or because their motives were ambiguous. In very young children, ascertaining whether an injury was due to intentional self-harm can be difficult and may involve a parent or care giver's perception of the intent (Pointer 2013).

Ability to form an intention to inflict self-harm and to understand their implications of doing so require a degree of maturity that is absent in infancy and early childhood. The age at which self-inflicted acts can be interpreted as intentional self-harm is not well-defined and is the subject of debate. For these reasons, few deaths or hospital episodes of children younger than 10 are assigned cause codes for intentional self-harm, and 10–14 is the youngest age-group included in this report.

# Terms, concepts and reporting periods

Some terms and concepts must be introduced to enable understanding of the data presented in this report. The report provides statistics based on analysis of the cases included in the routine national deaths data collection, and on the records in the national collection of data on cases treated as hospital-admitted patients, where the 'external cause' of injury was recorded as being intentional self-harm, including suicide and attempted suicide (see Appendix 1 for a description of inclusion criteria for the report).

'Intentional self-harm' has wider scope than 'suicide', including cases whether or not death was intended, and whether or not the intentional self-harm had a fatal result. This is particularly important for understanding the section of this report on hospitalised cases of intentional self-harm. Episodes of suicidal intentional self-harm in which the person survives (at least for some time) result in many hospital admissions. However, episodes of non-suicidal intentional self-harm also lead to hospital admission. These cases are sometimes described as self-injury or self-mutilation. Typical instances of self-injury involve repeated small burns (for example, with a cigarette), superficial cuts or scratches, or punching a wall, and the motivation most often reported is to manage emotions (Martin et al. 2010). Although

a statistical association has been shown between these behaviours and suicidal self-harm, these self-injury acts are not suicidal.

Unfortunately, ICD-10 and ICD-10-AM do not distinguish between suicidal and non-suicidal intentional self-harm. This is not a major problem when considering deaths reported as due to intentional self-harm, as nearly all such cases appear likely to have had suicidal intent. However, the same cannot be said of hospital cases reported as due to intentional self-harm. A possibly sizable, but ill-defined, proportion of these cases is due to non-suicidal intentional self-harm.

It should also be noted that many acts of intentional self-harm, suicidal or not, result in neither death nor in admission to a hospital. Some of these cases result in attendance at hospital emergency departments, but there these cases of self-harm have not been identified or analysed in any national collection. In an unknown number of other instances, the person survives and does not attend a health care service.

In this report, deaths that were attributed to *Intentional self-harm* (ICD-10) and *Suicide and self-inflicted injury* (a term used in earlier revisions of the ICD) have been labelled as *Suicide*. Hospitalised cases have been labelled as *Intentional self-harm*.

Suicide deaths that occurred in the year to 30 June 2011 (and had been registered by the end of 2011) and cases of intentional self-harm that were admitted to hospital in that year have been reported in chapters 2 and 12 to provide a description of both types of case for a recent period. While there are reasons to doubt that hospitalised intentional self-harm cases can safely be interpreted as providing a good guide to 'attempted suicide' or to total non-fatal intentional self-harm, this is the major source of data that comes closest to doing so. With that caveat, Chapter 14 compares rates of suicide and hospitalised intentional self-harm, for the period 1999–2000 to 2010–01.

Chapter 3 provides data on long-term trends in suicide overall, while Chapters 4 to 9 provide similar information on each of the 5 main mechanisms of suicide in Australia and for the other mechanisms, combined.

Trends in suicide are presented in terms of calendar years. Calendar year of death provides more reliable information on trends in occurrence than year of registration, and has been used where available (that is, for deaths in 1964 and later years). Year of registration is the only date available for deaths before then. However, trends in hospitalised intentional self-harm have been reported in terms of years to 30 June, the periods covered by annual releases of AIHW's National Hospital Morbidity Database data.

# 2 Suicide deaths: 2010–11

## 2.1 Overview

Suicides accounted for 2,282 injury deaths in Australia during 2010–11, just over one-fifth of all injury-related deaths in this period (Table 2.1). There were 3.3 times as many male as female suicide deaths during this period.

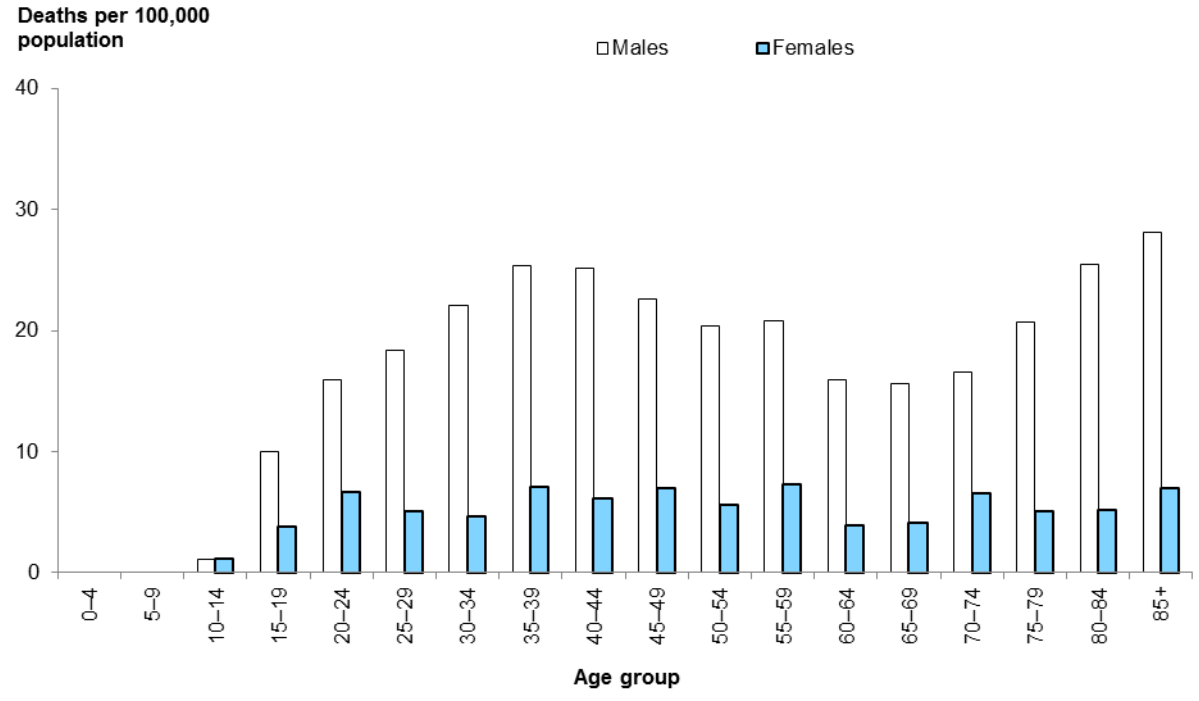
**Table 2.1: Key indicators for suicide deaths, Australia, 2010–11**

| Indicator | Males | Females | Persons |
|---|---|---|---|
| Suicide deaths | 1,755 | 527 | 2,282 |
| Percentage of all injury deaths | 26.3 | 11.9 | 20.5 |
| Standardised rate per 100,000 | 15.9 | 4.6 | 10.1 |

*Source:* AIHW National Mortality Database.

## 2.2 Age and sex distribution

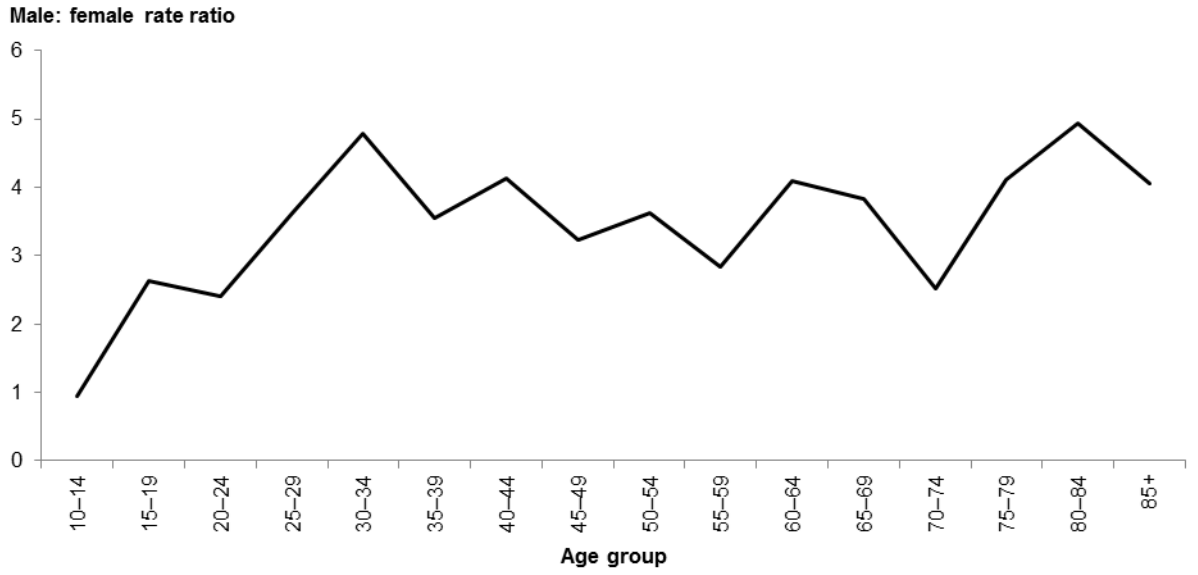
Markedly higher rates of suicide were recorded for males than for females in all age groups except for children aged 10–14 (Figure 2.1). Male rates were highest for those aged 35–44 years and for males aged 80 years and over. Male rates were 3–5 times higher than female rates except at ages below 25–29 (Figure 2.2).




*Note:* Rates for ages 0–4 and 5–9 not reported.

*Source:* AIHW National Mortality Database.

**Figure 2.1: Age-specific suicide rates, by sex, Australia, 2010–11**

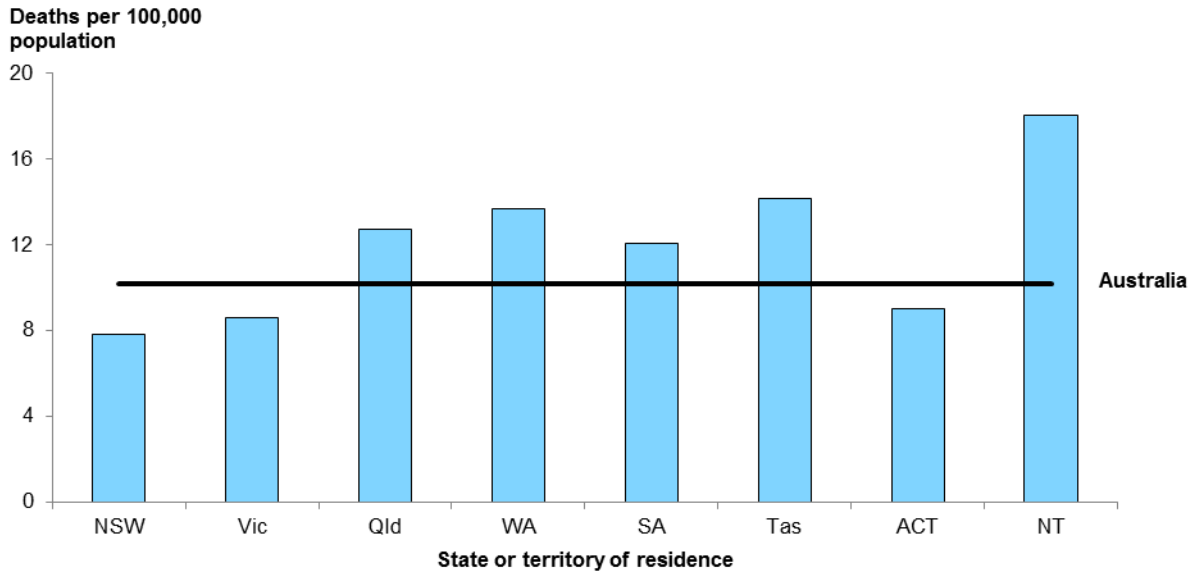



*Source:* AIHW National Mortality Database.

**Figure 2.2: Male to female rate ratio for suicide deaths, Australia, 2010–11**

## 2.3 State and territory rates

Age-adjusted rates for residents of New South Wales, Victoria and the Australian Capital Territory were lower than the national rate of 10.1 deaths per 100,000 population (Figure 2.3). Rates for residents of all other jurisdictions were higher than the national rate. The highest jurisdiction-specific rate was for residents of the Northern Territory: 18.1 suicide deaths per 100,000 population. Due to relatively low case numbers, annual rates for less-populated jurisdictions, such as the Northern Territory and the Australian Capital Territory, can be expected to vary more from year to year than the rates for the more populated jurisdictions such as New South Wales and Victoria.

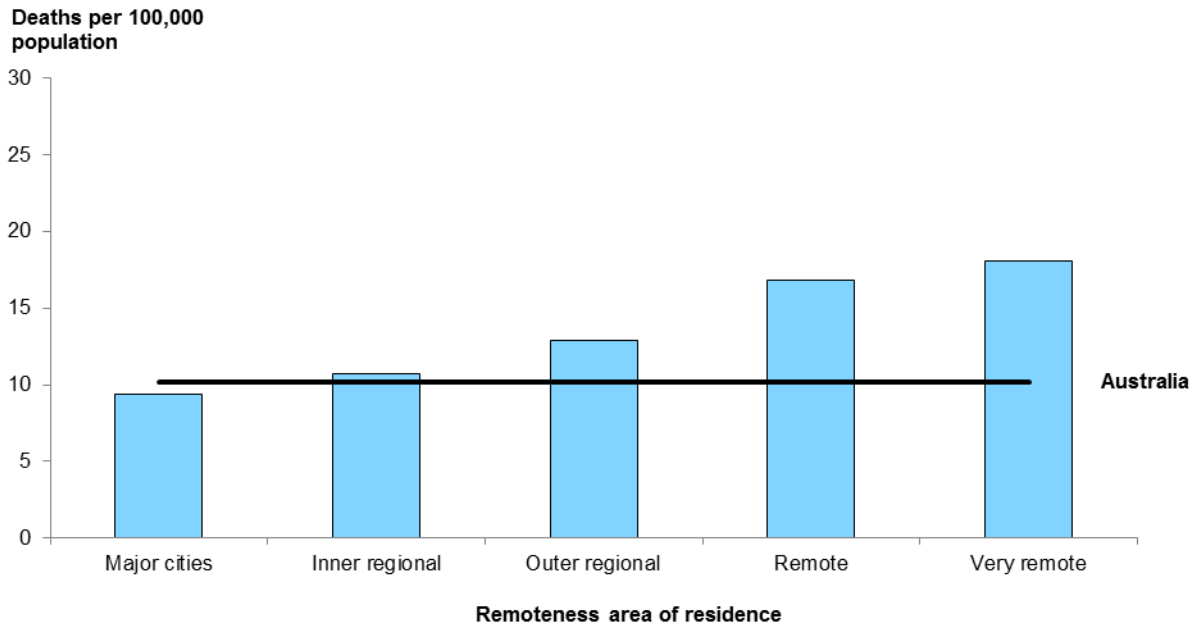



*Source:* AIHW National Mortality Database.

**Figure 2.3: Suicide rates, by state and territory of residence, Australia, 2010–11**

## 2.4 Remoteness of residence

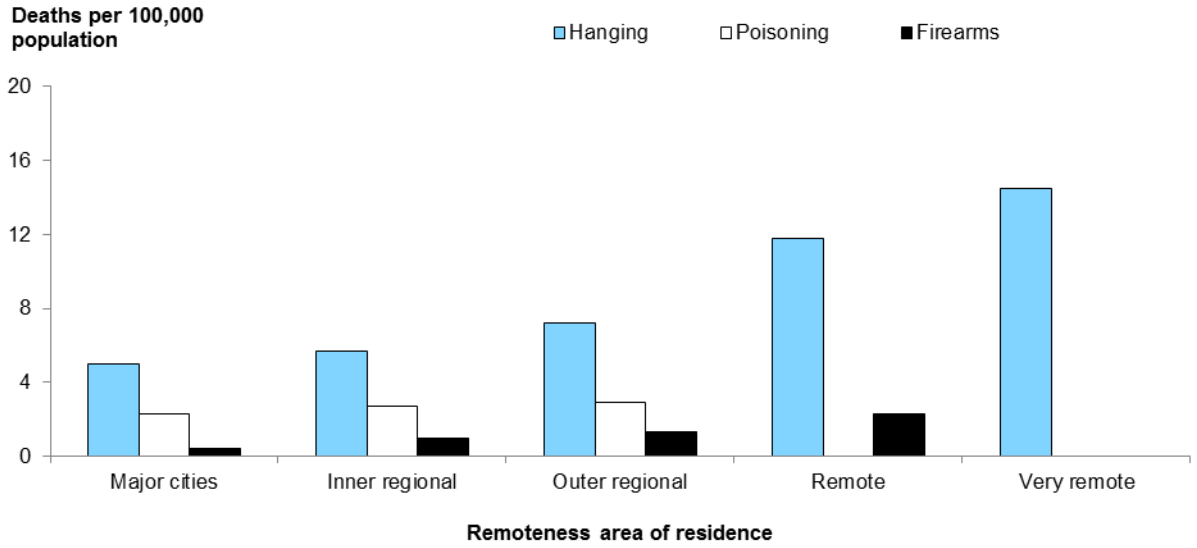
Age-adjusted suicide rates increased with the remoteness of the person's place of residence (Figure 2.4). Residents of *Major cities* recorded a rate lower than the national rate of 10.1 deaths per 100,000 population. Residents for all other remoteness zones recorded rates above the national rate. The rate for residents of the *Very remote* zone (18.1 deaths per 100,000 population) was almost double the rate for residents of the *Major cities* zone (9.4 deaths per 100,000 population). Population and case numbers are much smaller for the *Remote* and *Very remote* areas than for *Major cities*, and so annual rates can be expected to vary more from year to year than the rates for *Major cities*.




*Source:* AIHW National Mortality Database.

**Figure 2.4: Suicide rates, by remoteness area of residence, Australia, 2010–11**

Rates also increased with the remoteness of the person's place of residence for suicide deaths due to hanging (Figure 2.5). The rate for residents of the *Very remote* zone (14.5 deaths per 100,000 population) was almost 3 times as high as the rate for residents of the *Major cities* zone (5 deaths per 100,000 population). A similar pattern was seen for suicide deaths due to firearms, although the number of deaths among residents of the *Very remote* zone was too small to be published. Rates for suicide deaths due to poisoning (including poisoning by gas) were similar for residents of the 3 least-remote zones, but rates for the 2 most remote zones were not published due to small case numbers.



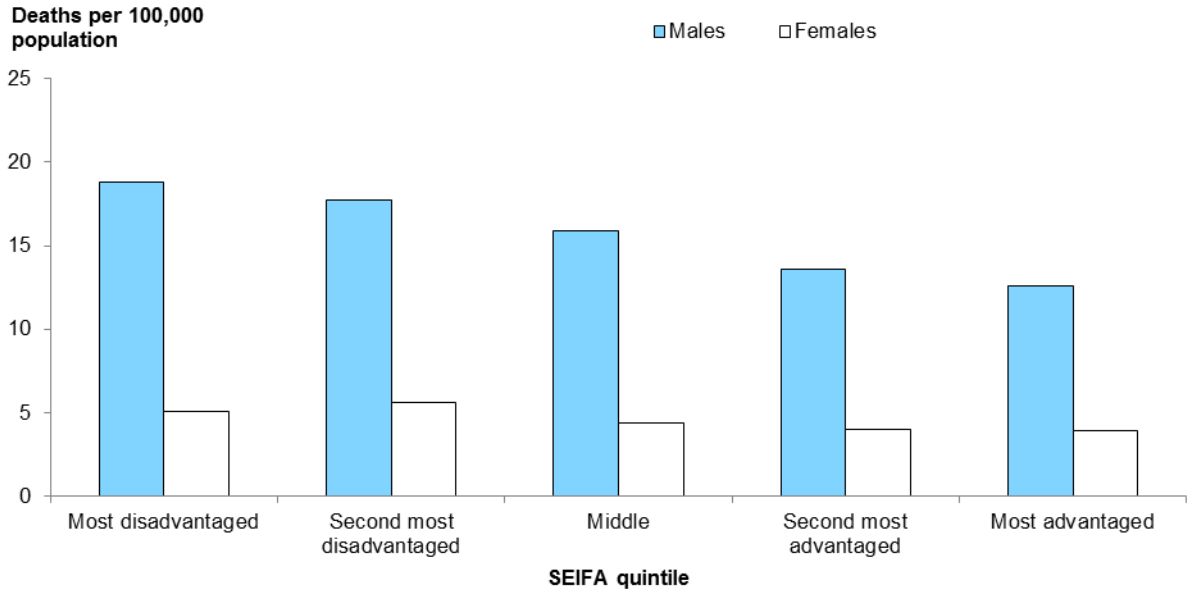

*Note:* Rates for poisoning deaths for *Remote* and *Very remote* areas and rates for firearms deaths for *Very remote* areas are not shown due to small numbers.

*Source:* AIHW National Mortality Database.

**Figure 2.5: Suicide rates for hanging, poisoning and firearms deaths, by remoteness area of residence, Australia, 2010–11**

## 2.5 Socioeconomic status

Age-adjusted rates of suicide were highest for the 20% of males who lived in the areas with most disadvantage, and decreased as the level of disadvantage of the person's area of residence lessened (Figure 2.6). The rate for the 20% of males living in the most disadvantaged areas was close to 1.5 times the rate for the 20% of males living in the least disadvantaged areas. This pattern was less marked for female rates in relation to level of disadvantage.




*Source:* AIHW National Mortality Database.

**Figure 2.6: Suicide rates, by SEIFA quintiles, by sex, Australia, 2010–11**

## 2.6 Mechanism of suicide

The most frequently recorded mechanism of suicide was *Hanging, strangulation and suffocation*, which accounted for 54% of deaths (1,231) in 2010–11 (Table 2.2). Poisoning by exposure to substances other than gases was also a common mechanism of suicide, accounting for almost 14% (317) deaths in 2010–11. This mechanism was more common among females than males, accounting for almost 29% of female suicides, and less than 10% of male suicides.

**Table 2.2: Mechanism of suicide, by sex, Australia, 2010–11**

| | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|
| **Mechanism of suicide** | **Count** | **%** | **Count** | **%** | **Count** | **%** |
| Hanging, strangulation and suffocation | 995 | 56.7 | 236 | 44.8 | 1,231 | 53.9 |
| Poisons (except gas) | 165 | 9.4 | 152 | 28.8 | 317 | 13.9 |
| Gas[(a)] | 181 | 10.3 | 37 | 7.0 | 218 | 9.6 |
| Jumping from a high place, or jumping or lying before a moving object | 142 | 8.1 | 49 | 9.3 | 191 | 8.4 |
| Firearms | 142 | 8.1 | 12 | 2.3 | 154 | 6.7 |
| Cutting, piercing and blunt objects | 56 | 3.2 | 17 | 3.2 | 73 | 3.2 |
| Drowning and submersion | 33 | 1.9 | 14 | 2.7 | 47 | 2.1 |
| Smoke, fire and flames, and hot substances | 12 | 0.7 | 6 | 1.1 | 18 | 0.8 |
| Crashing of motor vehicle | 18 | 1.0 | 4 | 0.8 | 22 | 1.0 |
| Other and unspecified mechanisms | 11 | 0.6 | 0 | 0.0 | 11 | 0.5 |
| **Total suicides** | **1,755** | **100** | **527** | **100** | **2,282** | **100** |

(a) Most suicides as a result of exposure to gas involve exposure to motor vehicle exhaust gas.

*Source:* AIHW National Mortality Database.

Table 2.3 lists the type of poisoning agent reported for the suicide deaths that resulted from poisoning. More than 1 substance was recorded in some cases. Almost 50% (160) of suicides due to poisoning by substances other than gases involved the use of *Antiepileptic, sedative-hypnotic and antiparkinsonism drugs.* Of this group, almost 82% (131) had taken benzodiazepines. Almost 40% (128) of suicides due to poisoning by substances other than gases involved the use of *Psychotropic drugs, nec,* with a further 35% (113) of suicides involving the use of *Narcotics and psychodysleptics [hallucigens]*.

Almost 92% (202) of suicides due to poisoning by exposure to gases were reported as being due to the toxic effects of carbon monoxide. While ICD-10 codes do not describe the source of carbon monoxide, other evidence shows that the great majority of deaths by this mechanism in Australia involve motor vehicle exhaust gas. This is discussed in greater detail in Chapter 7.

**Table 2.3: Poisoning-related suicide deaths, by type of poisoning agent, Australia, 2010–11**

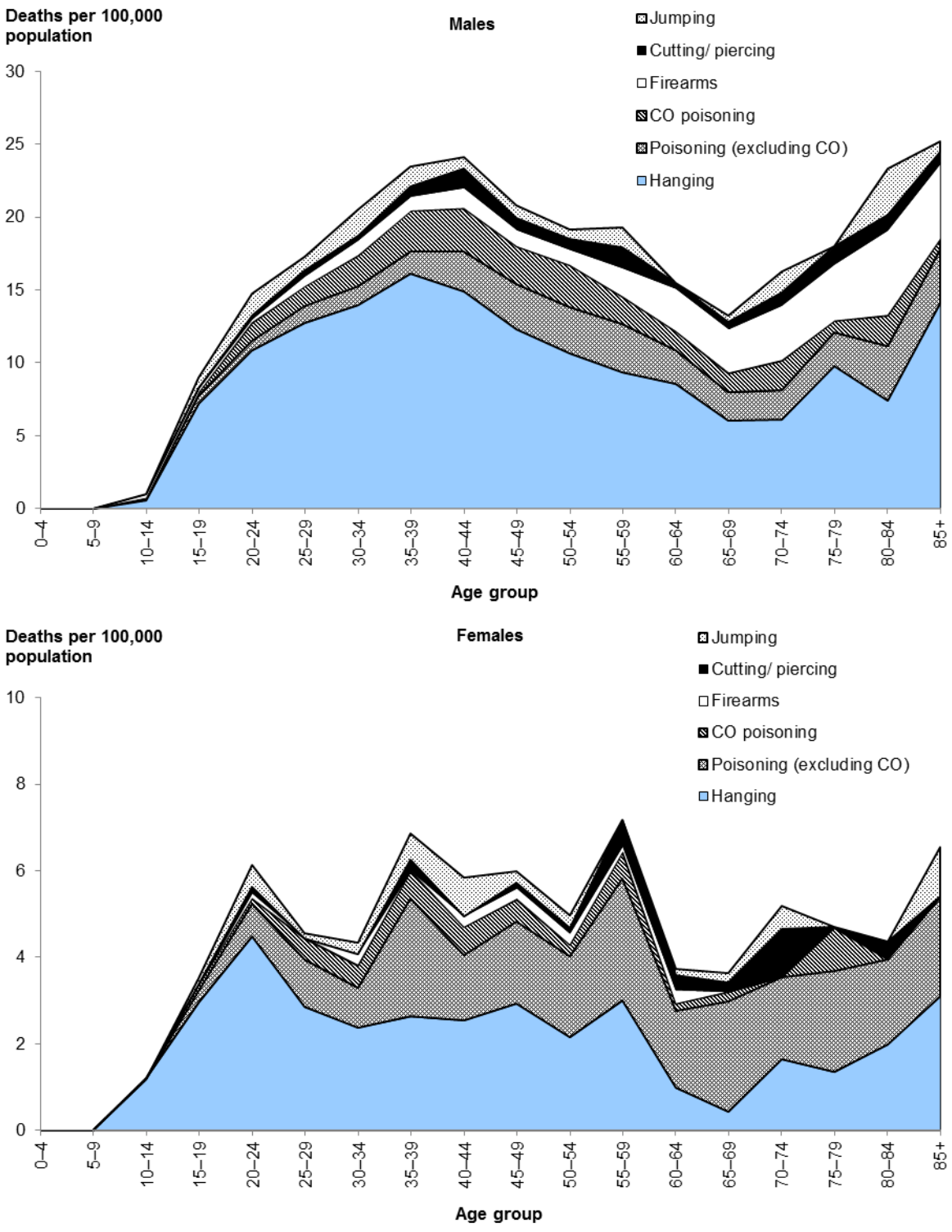
| Poisoning agent | Number of deaths | % |
|---|---|---|
| **Poisons (except gas)** | **323** | **60.4** |
| Antiepileptic, sedative-hypnotic and antiparkinsonism drugs | 160 | 49.5 |
| *Benzodiazepines* | *131* | *40.6* |
| Psychotropic drugs, nec | 128 | 39.6 |
| Narcotics and psychodysleptics [hallucinogens] | 113 | 35.0 |
| Nonopioid analgesics, antipyretics and antirheumatics | 48 | 14.9 |
| Alcohol | 42 | 13.0 |
| Primarily systemic and haematological agents | 13 | 4.0 |
| Drugs primarily affecting the autonomic nervous system | 12 | 3.7 |
| Drugs primarily affecting the cardiovascular system | 11 | 3.4 |
| Hormones and their synthetic substitutes and antagonists, nec | 11 | 3.4 |
| Other and unspecified solid and liquid substances | 47 | 14.6 |
| **Gaseous substances** | **220** | **41.1** |
| Carbon monoxide | 202 | 91.8 |
| Other gases, fumes and vapours | 18 | 8.2 |
| **Total number of poisoning suicide deaths**[(a)] | **535** | |

(a) The total of the values shown in this table for the categories of poisoning agents exceeds the total number of deaths because some cases have been exposed to more than 1 poisoning agent. The *Underlying cause of death* code in the NMD record is used to determine if death was due to poisoning by exposure to a toxic substance while *Multiple cause of death* codes are used to determine the type of poisoning agent.

*Source:* AIHW National Mortality Database.

Figure 2.7 shows age-adjusted rates of suicide by selected mechanisms and 5-year age groups, for males and females. Mortality due to hanging was higher than for any other mechanism across all age groups. Male rates for hanging were highest for those aged 35–44 and those aged 85 and over. Rates for deaths due to firearms tended to be higher in older age groups.

Female rates for suicide by hanging were higher than those for any other mechanism in all age groups except 60–79 years, at which age cases by poisoning (except gas) was highest. Female rates for hanging by suicide were highest for those aged 20–24 years.



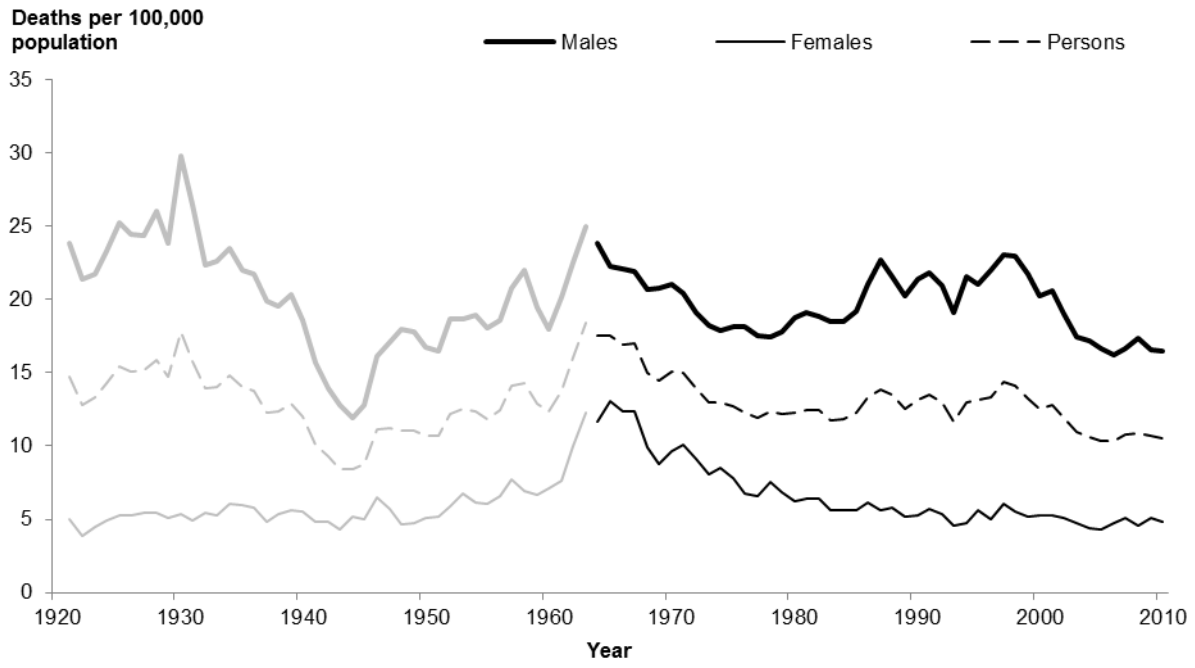

*Note:* Most deaths within the category 'CO poisoning' are as the result of exposure to motor vehicle exhaust gas.

*Source:* AIHW National Mortality Database.

**Figure 2.7: Age-specific male and female suicide rates, by selected mechanisms of suicide, Australia, 2010–11**

# 3 Trends of suicide by all mechanisms 1921–2010

Overall suicide death rates for males, adjusted for age, fluctuated above and below a rate of about 20 deaths per 100,000 population per year in the period 1921–2010 (Figure 3.1). Rates for females were about 5 deaths per 100,000 population per year throughout most of this period, with a peak of over twice this rate in the 1960s.




*Notes*

1. Rates for 1921 to 1963 are by year of registration (grey) and rates for 1964 to 2010 are by year of death (black).
2. A table corresponding to this figure, Table A4.1, can be found in Appendix 4.

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 3.1: Suicide rates, by sex, Australia, 1921 to 2010**

The next 5 chapters, which present data specific to the main mechanisms of suicide, provide insights into these variations in the occurrence of suicide in Australia. Some preliminary observations are made here.

First, some variations in suicide rates coincide, more or less, with social and economic events and it is tempting to assume a causal connection. For example, the highest annual rates for males in this period were in 1930 and 1931, during the Great Depression. However, male rates had been quite high since the middle of the 1920s, several years before the economic downturn commenced in 1929, and were somewhat lower in 1932, the year in which unemployment rates were highest. While it is problematic to establish a direct link between suicide rates and the Great Depression, some studies do point to a relationship between unemployment and suicide. A study looking at the relationship between suicide and unemployment in Australia between 1907 and 1990 concluded that there was strong support

for the hypothesis that unemployment is significant as a predisposing factor for increasing the risk of suicide, especially in males (Morrell et al. 1993). Another study investigating respondents to the New Zealand 1991 census concluded that being unemployed was associated with a twofold to threefold increased relative risk of death by suicide, compared with being unemployed, although half of this association might be attributable to mental illness (Blakely et al. 2003).

Second, some variations shown in Figure 3.1 and elsewhere in the report are largely, or entirely, due to factors other than variation in the occurrence of suicide in the Australian population. The most striking example of this is the apparent dip in male suicide rates that coincides with World War 2 (WW2). This is at least partly due to mismatch between cause of death data and population data in that period. More than half a million men, nearly all aged from 20 to 50 years, were absent from Australia as members of the armed forces for part of this period. Deaths of service personnel from any cause while they were overseas were never included in Australian death registration data (AIHW 2005). However, population estimates for the period were not adjusted to allow for their absence, leading to an age- and sex-specific dip in calculated rates of death, including deaths from suicide.

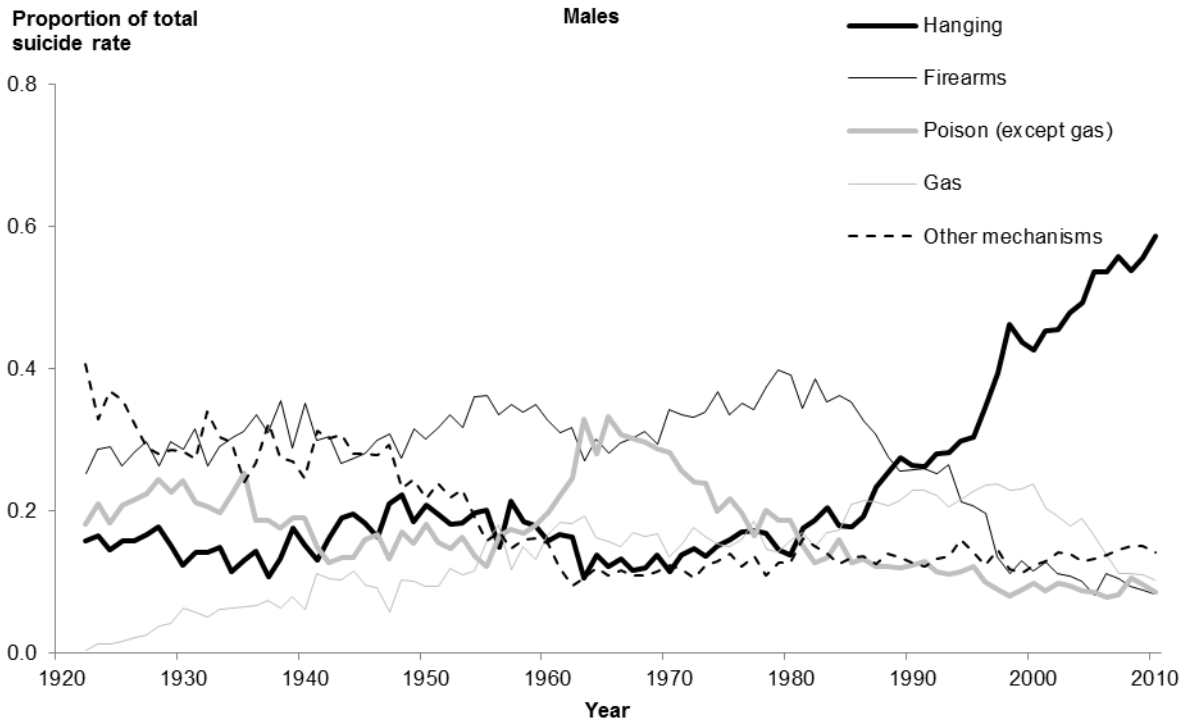
Third, some variations evident in an overview, such as Figure 3.1, are best described in those parts of the report that focus on suicide by particular mechanisms. The most striking example is the period of high suicide rates that peaked in the 1960s, due to a very large rise in the number cases involving poisoning by certain medications. This is considered in Chapter 6.

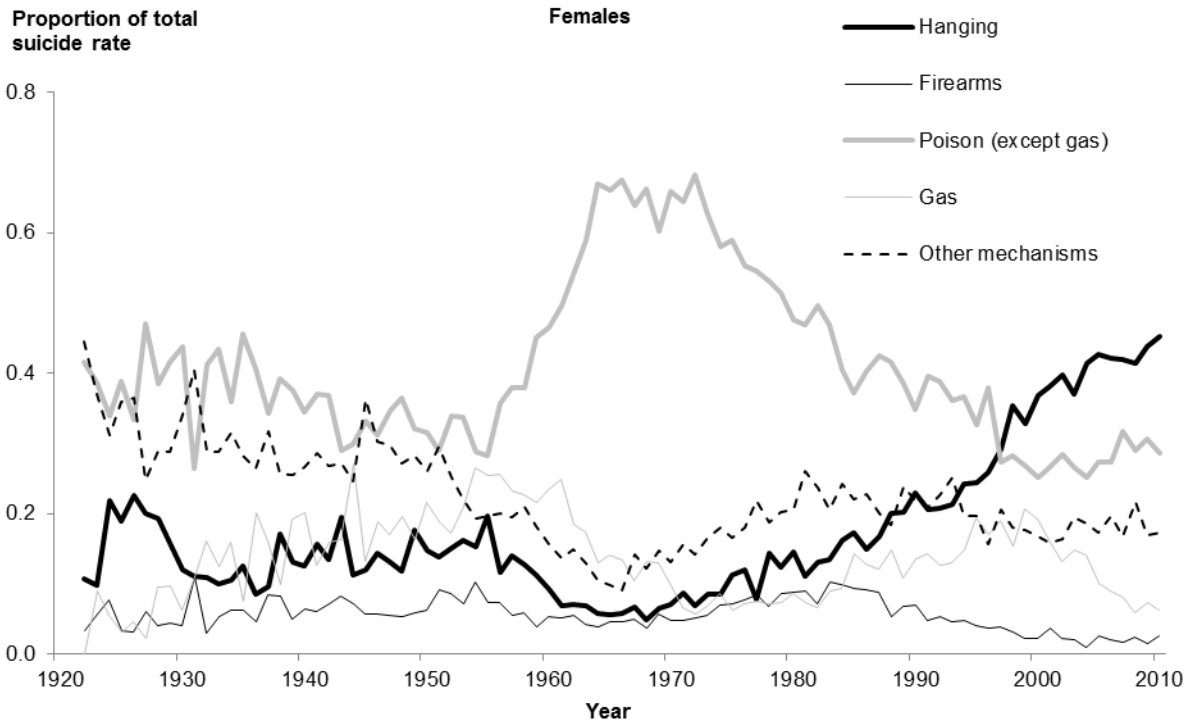
## Mechanism-specific proportions by year and sex

The pattern of suicide deaths by different mechanisms changed greatly over the period from 1922 to 2010. Figure 3.2 provides an overview, and each of the mechanisms shown here is considered in more detail in a later chapter. However, 2 other points are made here.

First, hanging has become by far the leading mechanism of suicide in Australia. For most of the period since 1922, hanging was the mechanism of about 1 in 5 male suicides. That proportion has risen steeply since the early 1980s, and almost 3 in 5 male suicides in 2010 were by hanging. Hanging is also the leading mechanism for women in Australia, accounting for more than 2 in 5 suicides in 2010.

Second, the frequency of poisoning by substances other than gas as a mechanism of suicide rose and fell dramatically in the middle of the 20th century for males and females. This is considered further in Chapter 6.



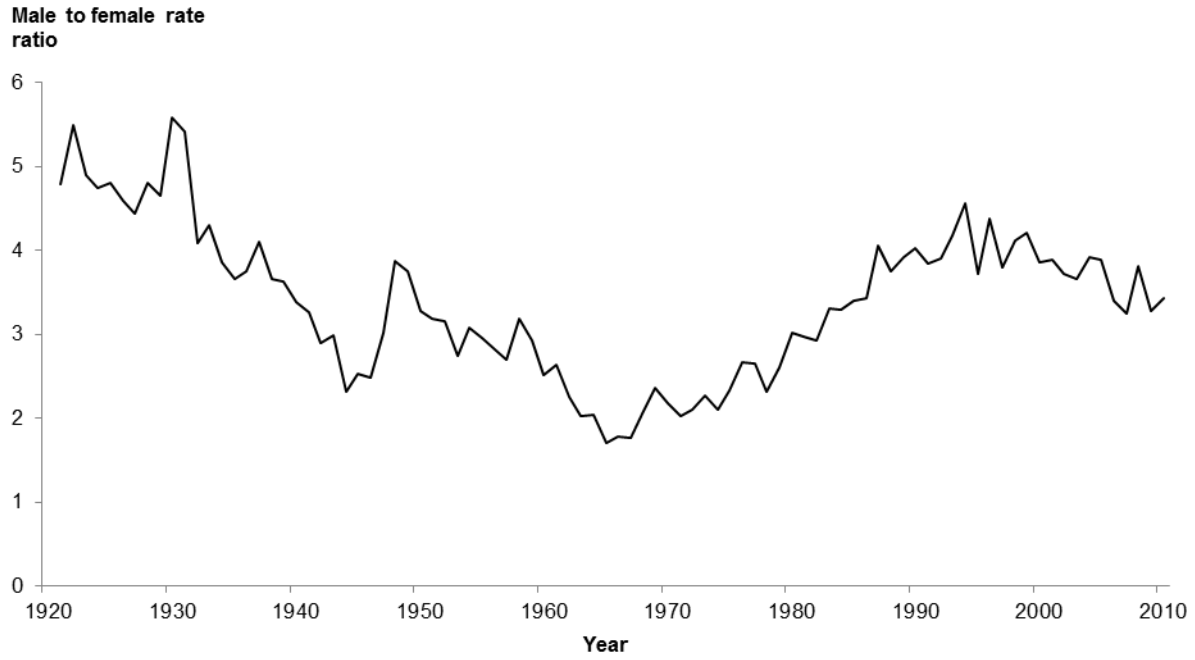

*Notes:* Deaths resulting from exposure to gas mostly involve carbon monoxide.

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 3.2: Mechanism-specific proportions of deaths, for males and females, Australia, 1922 to 2010**

## Trends by age group and sex

Male rates were markedly higher than female rates over the entire period from 1921 to 2011 (Figure 3.3). Apart from the dip associated with data issues during WW2, and a period during the 1960s when suicide by certain pharmaceutical drugs was frequent among both sexes, male rates were more than 3 times higher than female rates. More recently, the ratio has declined from about 4 in the mid-1990s to less than 3.5.



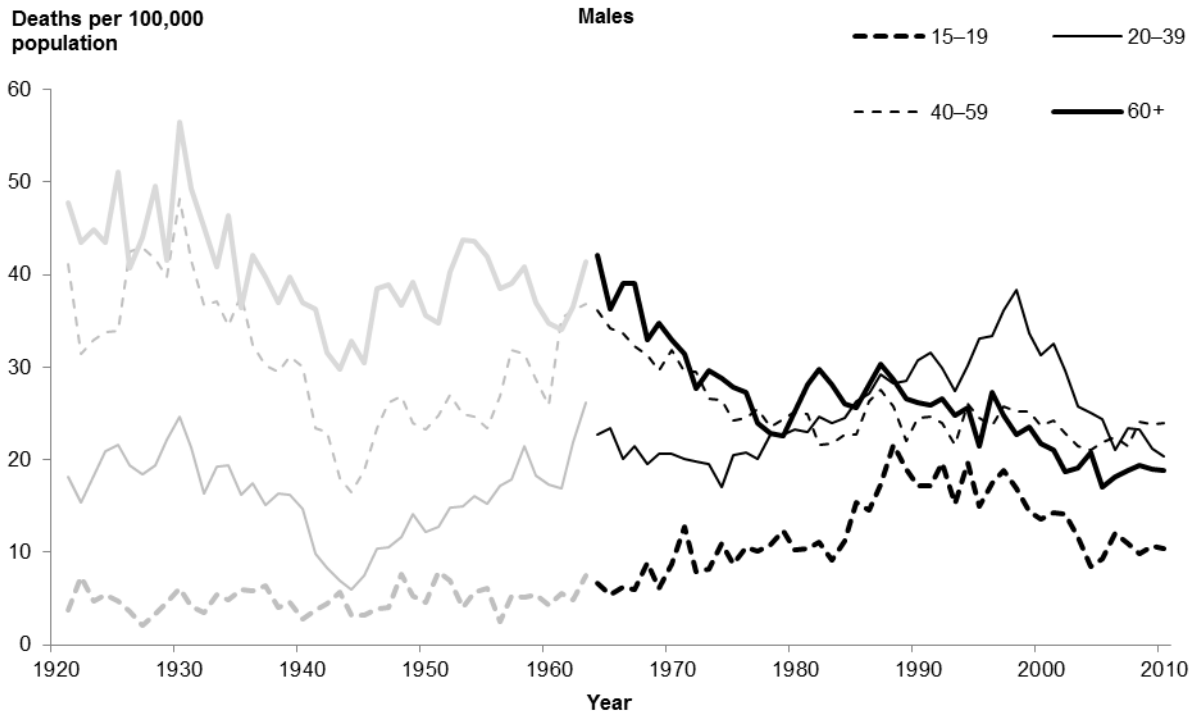

*Source:* AIHW National Mortality Database and GRIM Books.

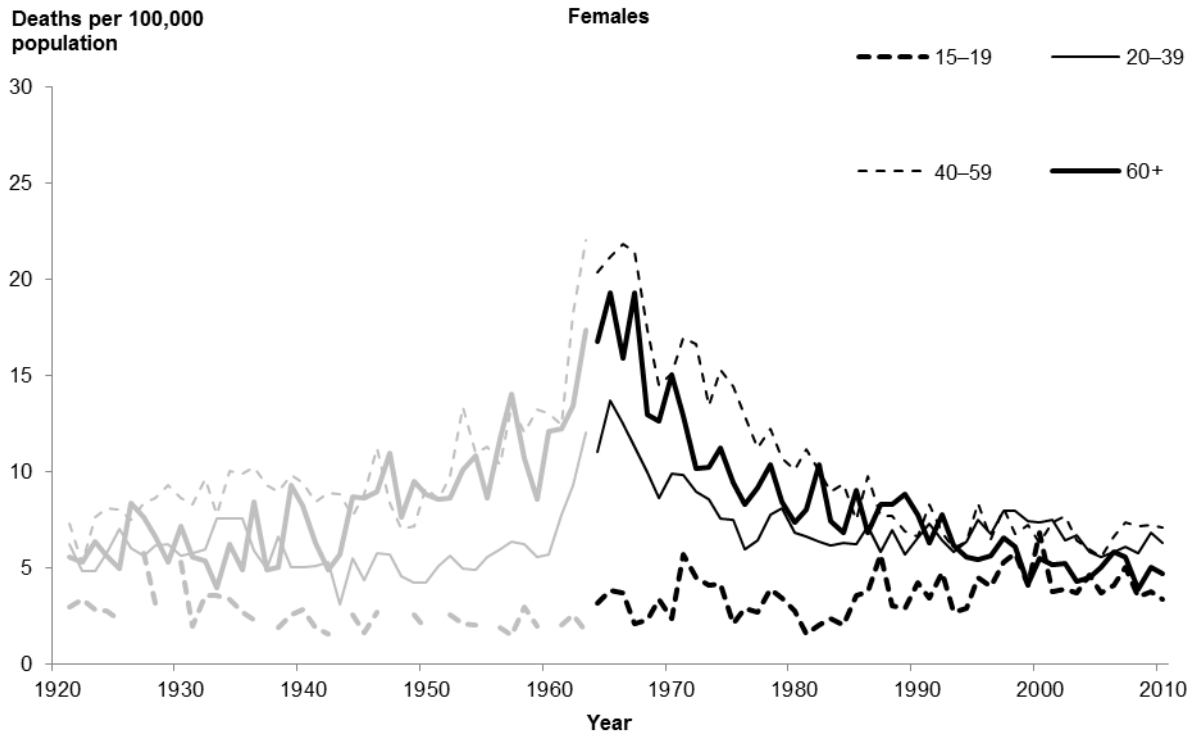
**Figure 3.3: Male to female rate ratio for suicide deaths, Australia, 1921 to 2010**

Population-based rates of suicide deaths that occurred in a given year were not the same for all age groups. Rates were very low at ages 10–14, the youngest age included here. The age distribution of annual suicide rates in Australia changed considerably in the period considered (Figure 3.4).

In the first half or so of the period, annual rates for males were lowest for young men and higher for older men. Rates at age 60 and older were roughly twice as high as rates at age 20–39 and about 8 times as high as at age 15–19. The pattern changed and became more complex in the latter part of the period. Broadly, annual rates became more similar for older and younger men. Contributing to this were reductions in annual rates at older ages and rises in annual rates at younger ages. Notably, annual rates for males at ages 15–19 rose gradually from about 5 deaths per 100,000 population until the 1960s, to a peak over 20 in the late 1980s, since which time they have tended to decline.

Annual rates for females showed relatively little variation by age except for a peak in the 1960s (see Chapter 6).




*Note:* Rates for 1921 to 1963 are by year of registration (grey) and rates for 1964 to 2010 are by year of death (black).

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 3.4: Male and female suicide rates, for selected age groups, Australia, 1921 to 2010**

## Trends by birth cohort

The same data can be presented so as to show rates according to the periods in which people were born. A 'birth cohort' refers to everyone born in a particular period. Birth cohorts can be defined in terms of any range of birth dates for which data are available, and many shorthand terms are used (McCrindle 2014).

The *Statistician's report on the 2006 Census* specified names and periods for Australian generations (ABS 2009b), and the naming of birth cohorts used there is applied in this report. One variation is made here: those born in the decade 1975 to 1984 ('Gen X') are distinguished from those born in the following decade ('Gen Y'), because the suicide data show differences between them. The periods of birth and terms used to refer to these cohorts are shown in Table 3.1 below.

**Table 3.1: Birth cohorts by period of birth and title**

| Period of birth | Title |
|---|---|
| 1886 to 1905 | Hard-timers |
| 1906 to 1925 | Frugal generation |
| 1926 to 1945 | Lucky generation |
| 1946 to 1965 | Baby boomers |
| 1966 to 1975 | Gen X |
| 1976 to 1985 | Gen Y |
| 1986 to 1994 | iGen |

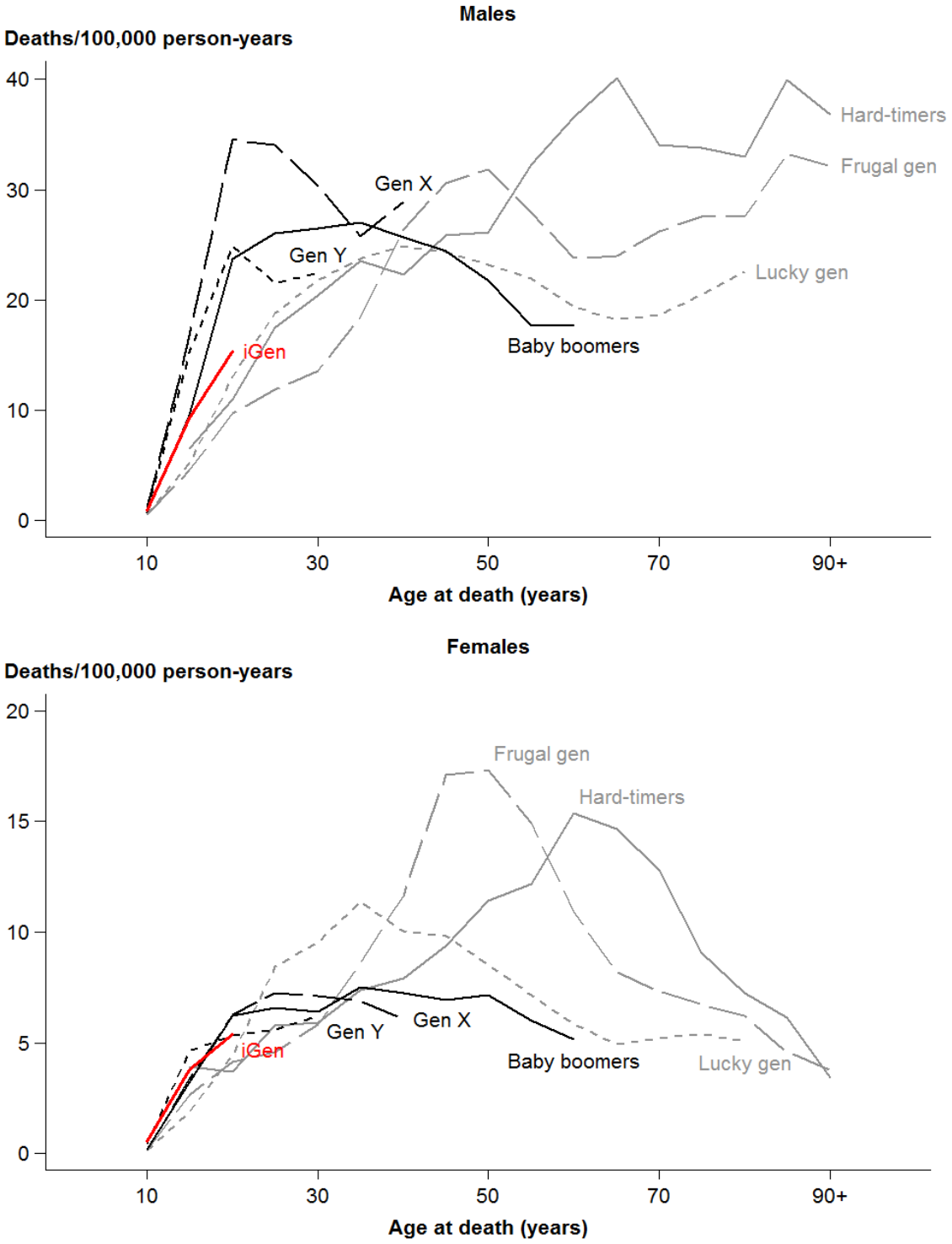
*Source:* (ABS 2009).

Each line in Figure 3.5 shows how suicide rates changed with age for people born into a particular birth cohort. In this figure, the cohort-specific lines are aligned in terms of age at death, which facilitates comparison, between cohorts, of suicide rates over the life-course.

For males, Figure 3.5 shows 2 striking changes in the evolution of suicide rates with age. First, rates rose further and faster at ages 15 to mid-20s for Baby Boomer, Gen X and Gen Y birth cohorts than in the generations of their fathers and grandfathers. A similar pattern was reported for males in the USA (Phillips et al. 2010). Somewhat reassuringly, rates for males in the iGeneration appear not to have risen as far or fast by age 20 as for the 3 previous generations.

Second, rates of suicide for those aged about 50 and above have declined with each generation so far.

Rates for 3 of the cohorts of females peak at a younger age in the more recently-born cohorts, as discussed in Chapter 6. Otherwise rates for females appear similar over the cohorts presented here.




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

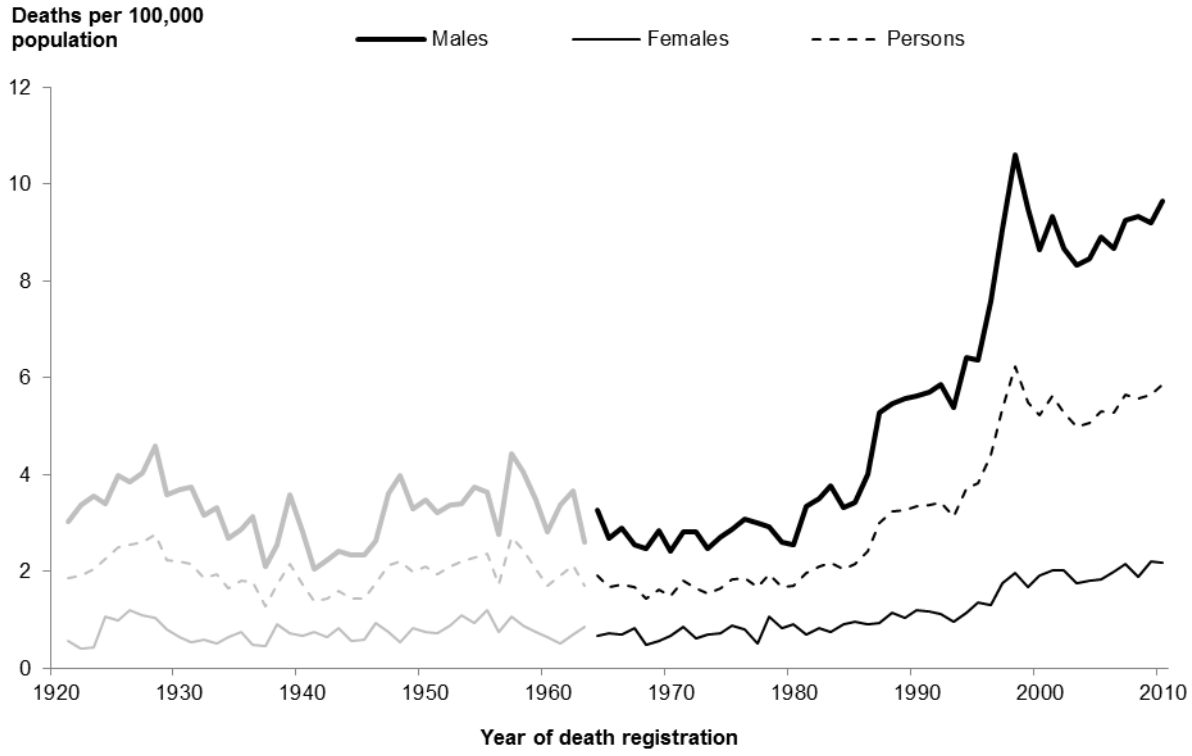
*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 3.5: Male and female rates of suicide, by period of birth and age at death, Australia, 1921 to 2010**

# 4 Trends in suicide by hanging

## 4.1 Trends: 1921–2010

Age-adjusted male rates for suicide by hanging fluctuated between 1921 and the early 1980s, after which they have risen steeply (Figure 4.1). A similar pattern was observed for female rates, although at lower levels. As noted earlier (Figure 3.2) , hanging has been the most common mechanism of suicide in Australia since 1989 for males and since 1997 for females.




*Notes*

1. Rates for 1921–1963 are by year of registration (grey) and rates for 1964–2010 are by year of death (black).
2. A table corresponding to this figure, Table A4.2, can be found in Appendix 4.

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 4.1: Rates of suicide by hanging, Australia, 1921 to 2010**

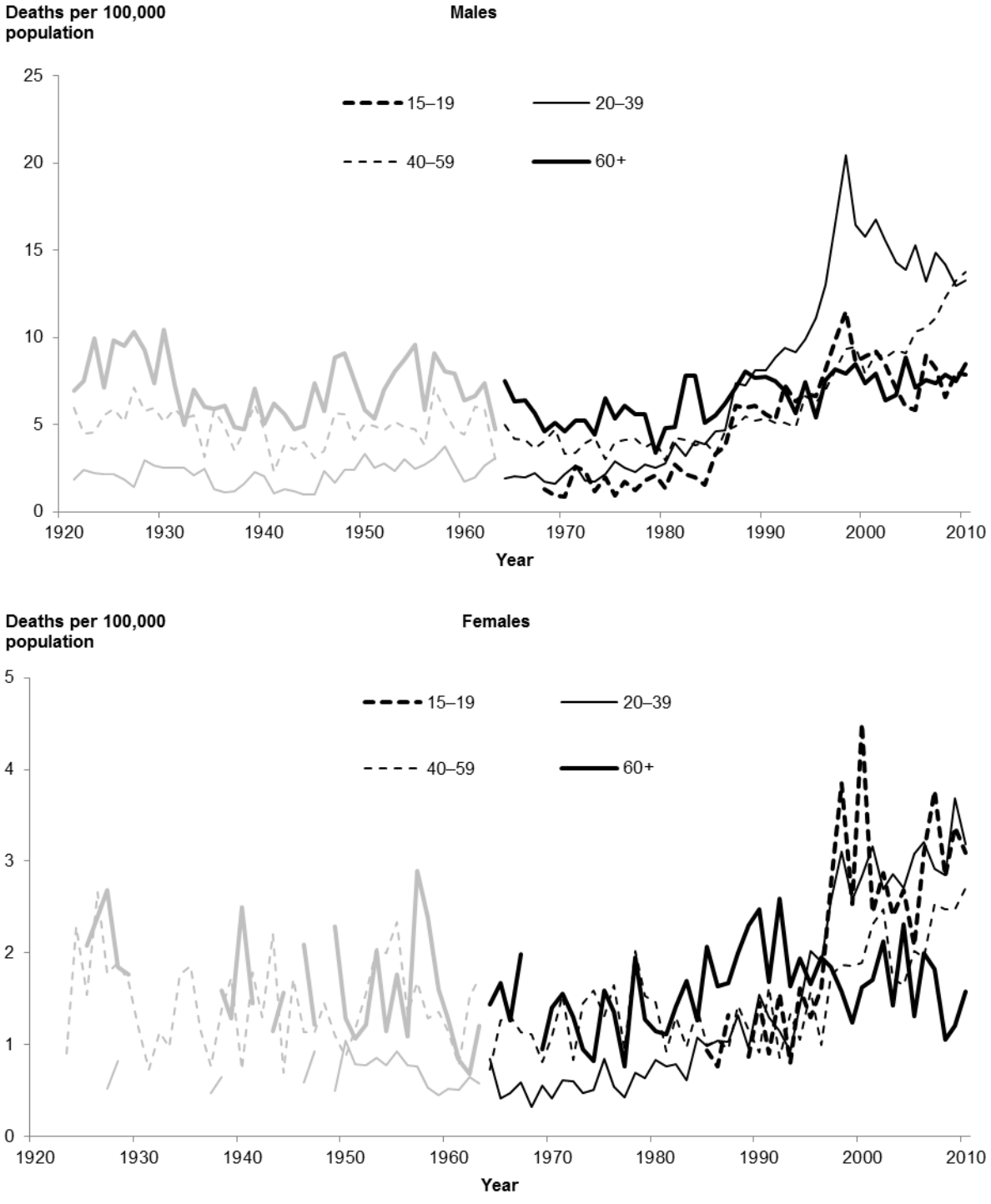
Despite fluctuations, there was no distinct trend in the male-to-female rate ratio over the period from 1921 to 1981 (Figure 4.2). Over this period, male rates were generally 4 to 5 times as high as female rates.


*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 4.2: Male to female rate ratio for suicide by hanging, Australia, 1921 to 2010**

## Trends by age group and sex

Trends in rates for the 3 younger age-bands shown in Figure 4.3 are broadly similar to the all-ages pattern, though the extent of the rise in recent decades and its timing differs somewhat between the age bands. In contrast, rates of suicide by hanging for those aged 60 and over remained relatively steady over the entire period from 1921 to 2010. Rates for females were lower and fluctuations more prominent, reflecting smaller case numbers.




*Notes*

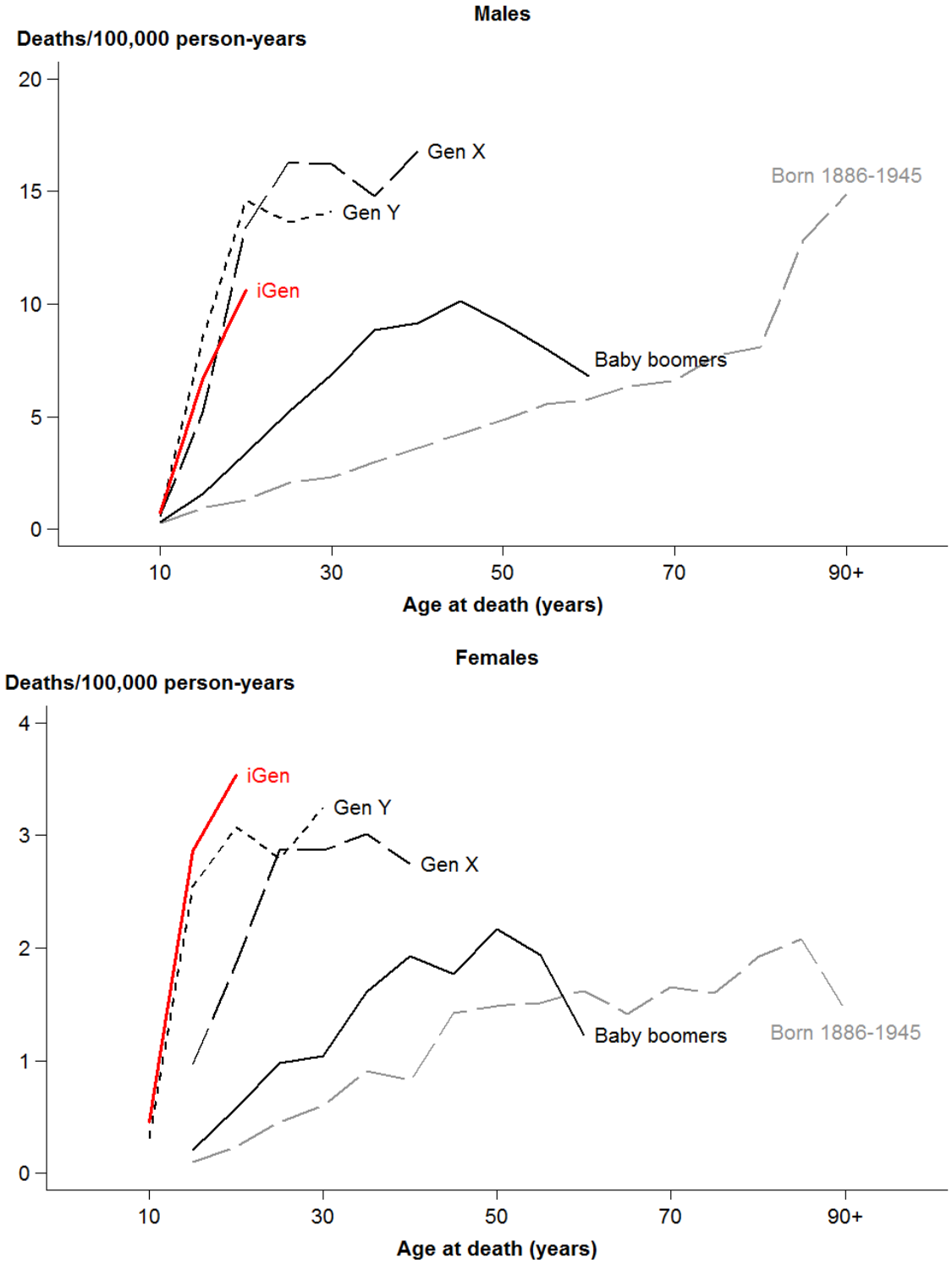
1. Rates for 1921–1963 are by year of registration (grey) and rates for 1964–2010 are by year of death (black).
2. Rates for males and females aged 15–19 for the period from 1921 to 1963 are not shown due to small cases numbers.

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 4.3: Male and female rates of suicide by hanging, for selected age groups, Australia, 1921 to 2010**

## Trends by birth cohort

The pattern of suicide by hanging has changed dramatically between birth cohorts (Figure 4.4). For the several cohorts born up to the end of WW2, rates of suicide by hanging rose slowly with age to about age 70, by which age rates were about 5 per 100,000 males and 1.5 per 100,000 females. Rates tended to be highest in old age, though case numbers were relatively small, reflecting the smaller size of earlier cohorts and the relatively small proportion of members of those cohorts who survived to old age. In striking contrast, for those born in the last third of the 20th century, rates of suicide by hanging rose rapidly with age, reaching levels from about age 25 onwards that were more than 4 times the rates of the earlier generations at the same age. While rates in these generations tended to level off from age 25, there is no strong indication that the rates are declining with age. Particularly disturbing is the persistence of high rates for Gen X males through their fourth decade of age, and the unprecedentedly high female rates charted for the youngest generation. Baby boomers, born between the end of WW2 and the mid-1960s, show an intermediate pattern.




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

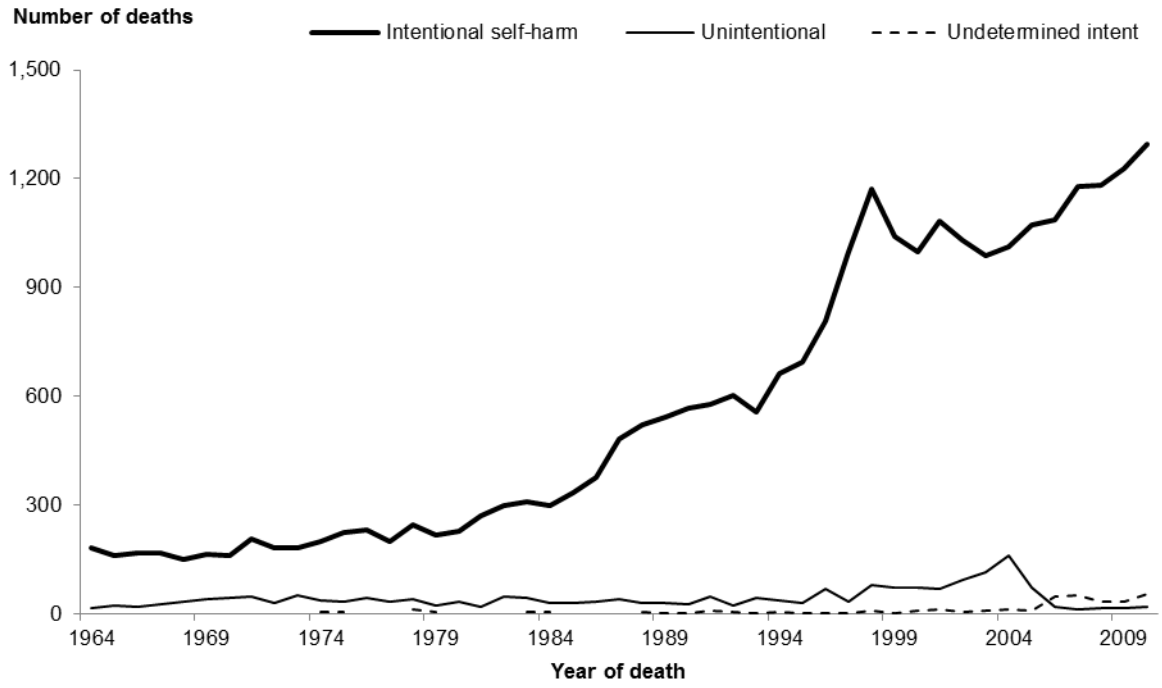
*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 4.4: Male and female rates of suicide by hanging, by period of birth and age at death, Australia, 1921 to 2010**

## 4.2 Trends by injury intent

External causes of deaths are classified according to intent (for example, intentional self-harm) and mechanism (for example, hanging). Consideration of all deaths due to a particular mechanism can sometimes give useful insights into the number of suicide deaths, for example because numbers of cases with undetermined intent, if large, can be relevant to interpretation of the suicide numbers.

The great majority of all deaths in Australia due to hanging and strangulation have been attributed to intentional self-harm throughout the period charted (Figure 4.5). A small but noticeable increase in the number of deaths coded as unintentional hanging and strangulation early in the first decade of the 21st century reflects a change in the way cause-of-death information was obtained and processed, rather than a rise in the number of unintentional deaths due to this mechanism, and these deaths are mainly due to intentional self-harm (Harrison et al. 2009). See also Appendix 1, Data Issues.



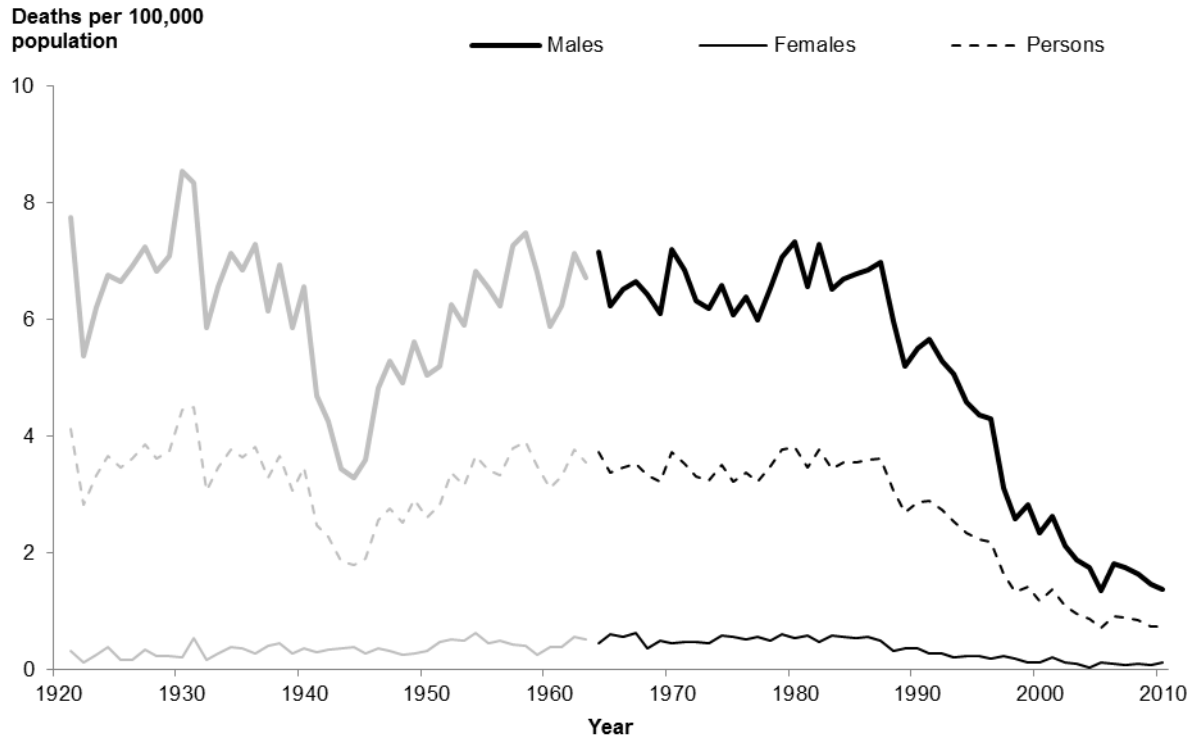

*Source:* AIHW National Mortality Database.

**Figure 4.5: Number of deaths by hanging, by intent, Australia, 1964 to 2010**

# 5 Trends in suicide by firearms

## 5.1 Trends: 1921–2010

Shooting by firearms was the most common mechanism of suicide by males in Australia in the 20th century until the mid-1980s (Figure 5.1). Apart from the period of WW2, when a statistical aberration produced a transient dip (see Section 3.1), the rate was generally 6 deaths per 100,000 males or higher until the late 1980s, after which it declined significantly, to below 2 per 100,000 males.



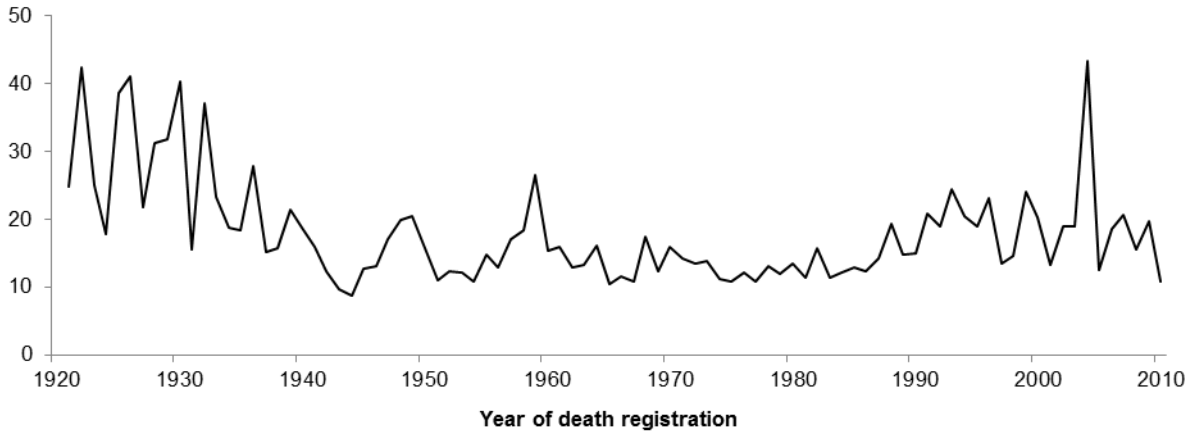

*Notes*

1. Rates for 1921 to 1963 are by year of registration (grey) and rates for 1964 to 2010 are by year of death (black).
2. A table corresponding to this figure, Table A4.3, can be found in Appendix 4.

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 5.1: Suicide rates by firearms, Australia, 1921 to 2010**

Female rates of suicide by this mechanism were low throughout the period, being less than one-tenth of the male rates except briefly in the WW2 period, when the male rates were depressed by statistical factors (Figure 5.2).




*Source:* AIHW National Mortality Database and GRIM Books.

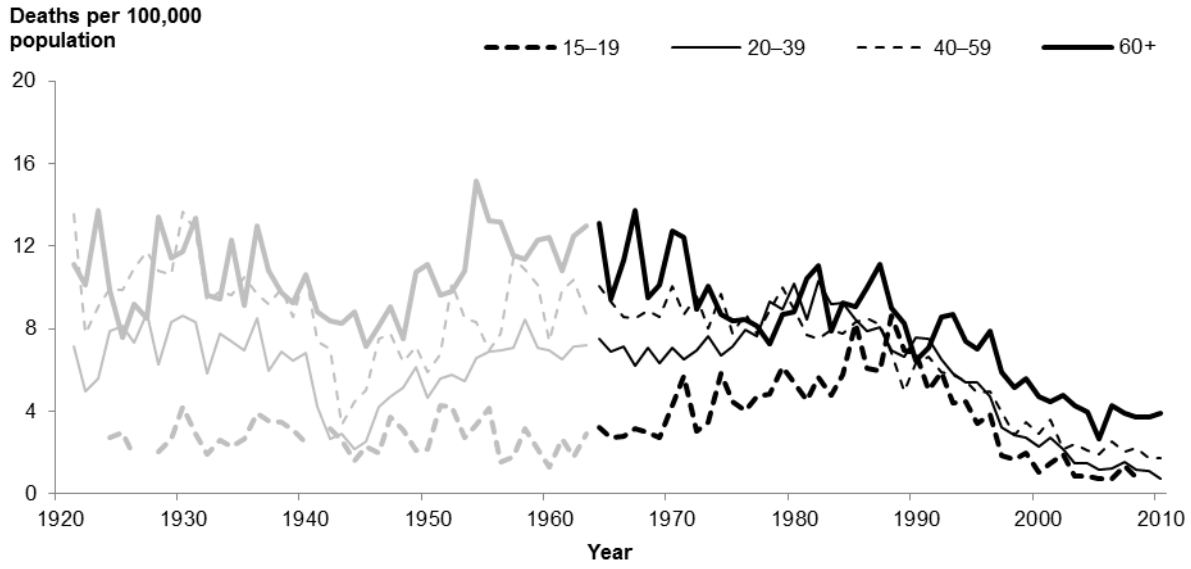
**Figure 5.2: Male to female rate ratio for suicide by firearms, Australia, 1921 to 2010**

## Trends by age group and sex

As the main mechanism of suicide by males until the 1980s, it is to be expected that the rates by age for firearm suicide (Figure 5.3) would be similar to those for suicide by all mechanisms combined (Figure 3.4), with rates for older men higher than for younger men.

Note that the dip in rates during WW2 is deepest for the age-groups of males who were most likely to be overseas in the armed services. The dip occurred at least partly because the absence overseas of service personnel was not allowed for in population estimates, but deaths overseas of service personnel were not registered in Australia.

Age-specific rates for female suicide using firearms are not presented because case numbers are low and rates are unstable.




*Note:* Rates for 1921 to 1963 are by year of registration (grey) and rates for 1964 to 2010 are by year of death (black).

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 5.3: Male suicide rates by firearms, for selected age groups, Australia, 1921 to 2010**

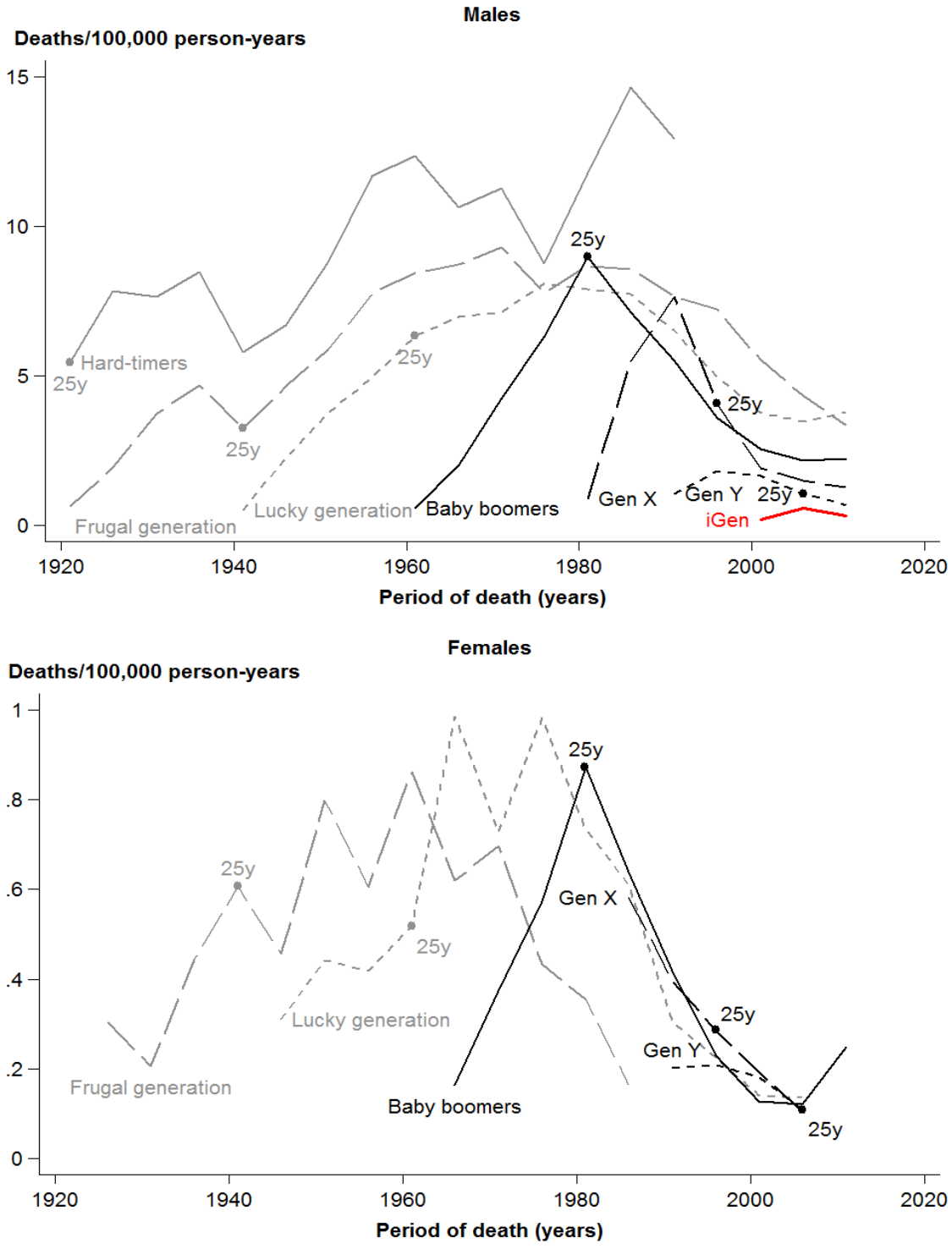
## Trends by birth cohort

Age-specific rates of suicide by means of firearms are shown in Figure 5.4 for birth cohorts, graphed against period of death. Female rates in 3 birth cohorts (Lucky generation; Baby boomers; and Gen X) declined at about the same time, suggesting influential period factors (that is, factors occurring in a particular period of time).

The patterns of change for male cohorts have similarities with and differences from those for female cohorts. As for females, rates for male Baby boomers declined sharply after the early 1980s, when they were aged in their 20s, and rates for Gen Y were low. Rates for males in the iGen were at least as low as for Gen Y. Rates for males in the Frugal generation, Lucky generation and Gen X also declined late in the 20th Century, but somewhat later than for females in those generations.

Males and females in Gen Y and the iGeneration have thus far shown no indication of following previous generations of Australians in the frequent use of firearms as a means of suicide.

Several studies have examined the deaths data for indications of an effect related to the mass shooting at Port Arthur in 1996, and the regulatory changes and gun buy-back scheme prompted by it. Findings have been mixed, including acceleration of a downward trend that had already commenced (Chapman et al. 2006) and no effect (McPhedran & Baker 2012). It is generally acknowledged that rates of firearm suicide were declining before 1996, and some authors have pointed to means restriction as the most plausible explanation for this (Spittal et al., 2012). None of these studies has incorporated data on exposure to the risk factor in question (for example, prevalence of firearm ownership, or ready access to firearms), or in potentially important knowledge of or attitudes towards firearms, which might have changed over time for any of several reasons. However, (Ozanne-Smith et al. 2004), in a study of firearm-related deaths in Victoria, reported finding associations between declining firearm suicide, the reduced availability of firearms, and regulatory changes.




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

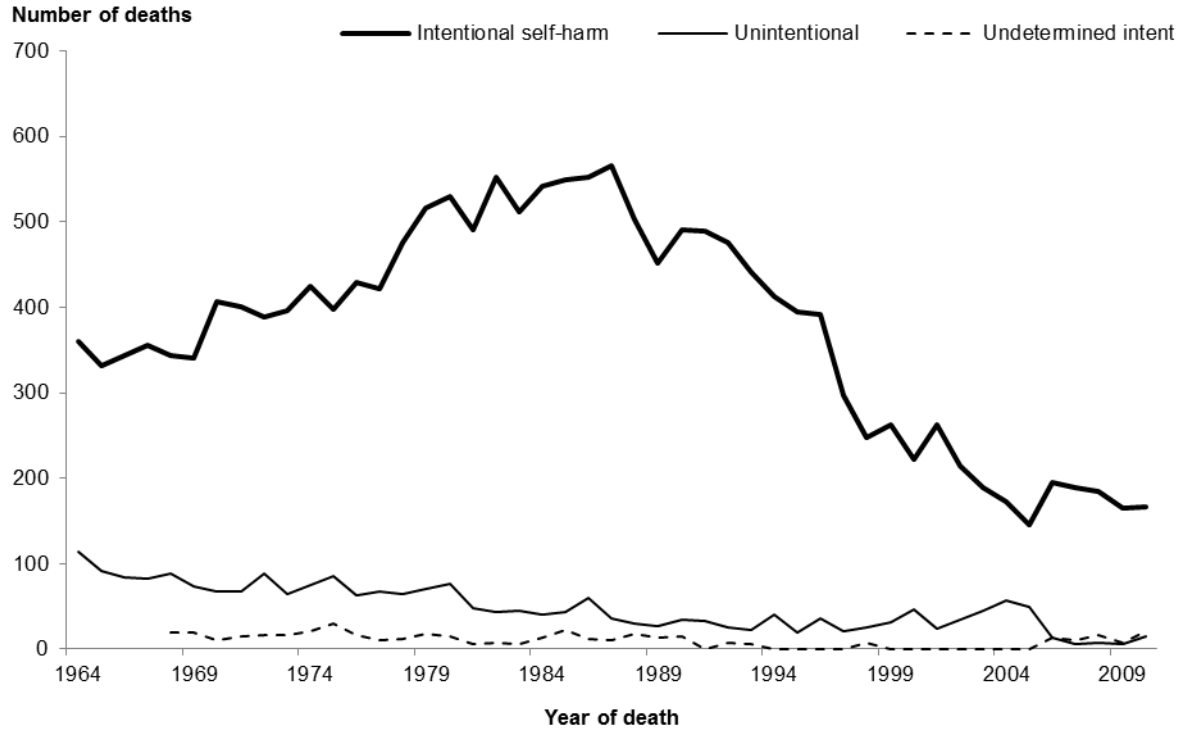
*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 5.4: Male and female rates of suicide by firearms, by period of birth and period of death, Australia, 1921 to 2010**

## 5.2 Trends by injury intent

Intentionally self-inflicted cases made up the bulk of all fatal shootings by firearms in Australia throughout the period since the mid-1960s (Figure 5.5). Cases reported as unintentional accounted for about 1 in 4 cases at the beginning of the period, a proportion which declined to about 1 in 10 by the mid-1980s.

A small but noticeable increase in the number of deaths coded as being due to unintentional firearm discharges early in the first decade of the 21st century reflects a change in the way cause-of-death information was obtained and processed, rather than a rise in the number of unintentional deaths due to this mechanism, and these deaths are mainly due to intentional self-harm (Harrison et al. 2009). See also Appendix 1, Data issues.




*Source:* AIHW National Mortality Database.

**Figure 5.5: Number of deaths by firearms, by intent, Australia, 1964 to 2010**

# 6 Trends in suicide by poisons (except gas)

Intentional self-poisoning by other substances is considered here, while suicidal poisoning by gas is discussed in Chapter 7.

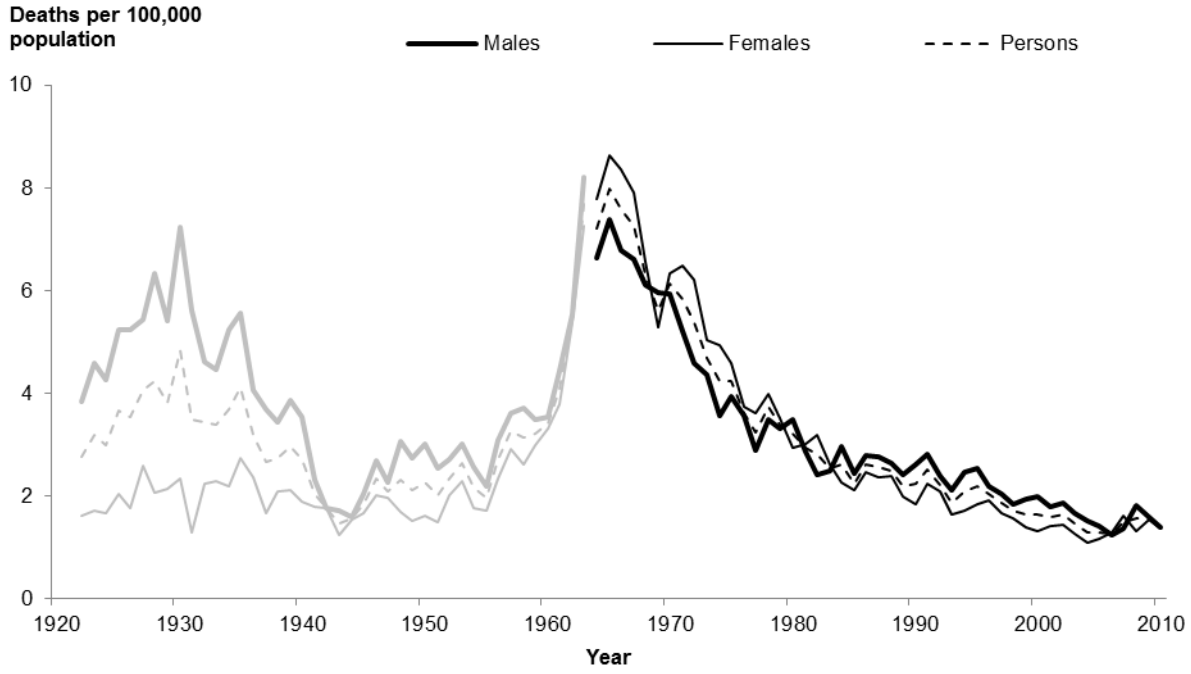
Little information is available in the cause of death data on the substances involved in cases that occurred in the period from 1922 to the late 1960s. More detail is available for deaths registered from 1968 and still more from 1979, reflecting the additional specificity of more recent revisions of the ICD. Pharmaceutical drugs predominate, especially sedatives and sleeping medicines (see Table 2.3 and Section 6.3).

## 6.1 Trends: 1922–2010

Age-adjusted rates for both male and female suicides due to exposure to poisons (except gas) were remarkably similar from the early 1940s through to 2010 (Figure 6.1). This similarity is noteworthy because male rates greatly exceed female rates for the other main mechanisms of suicide.

Both male and female rates were characterised by a peak during the 1960s, attributed chiefly to barbiturate poisoning. In March 1960, a wide range of prescription medicines, including barbiturate sedatives and hypnotics, were made more available via the Pharmaceutical Benefits Scheme (Oliver & Hetzel 1973). Barbiturates can be lethal in amounts only a few times more than the prescribed dose. However, in the early 1960s, 100–300 tablets or capsules were available on a single prescription, with repeats. In July 1967, in response to concerns over misuse of some categories of drugs, the number of tablets or capsules of barbiturates was limited to 25 for a single prescription and no repeat prescriptions were allowed. Suicidal and unintentional deaths from this cause began to decline soon after.

For males, there was also a peak in rates centred around 1930, which was not observed in the female rates. This peak is similar to that observed for all male suicide rates, as discussed in Section 3.1 of this report.

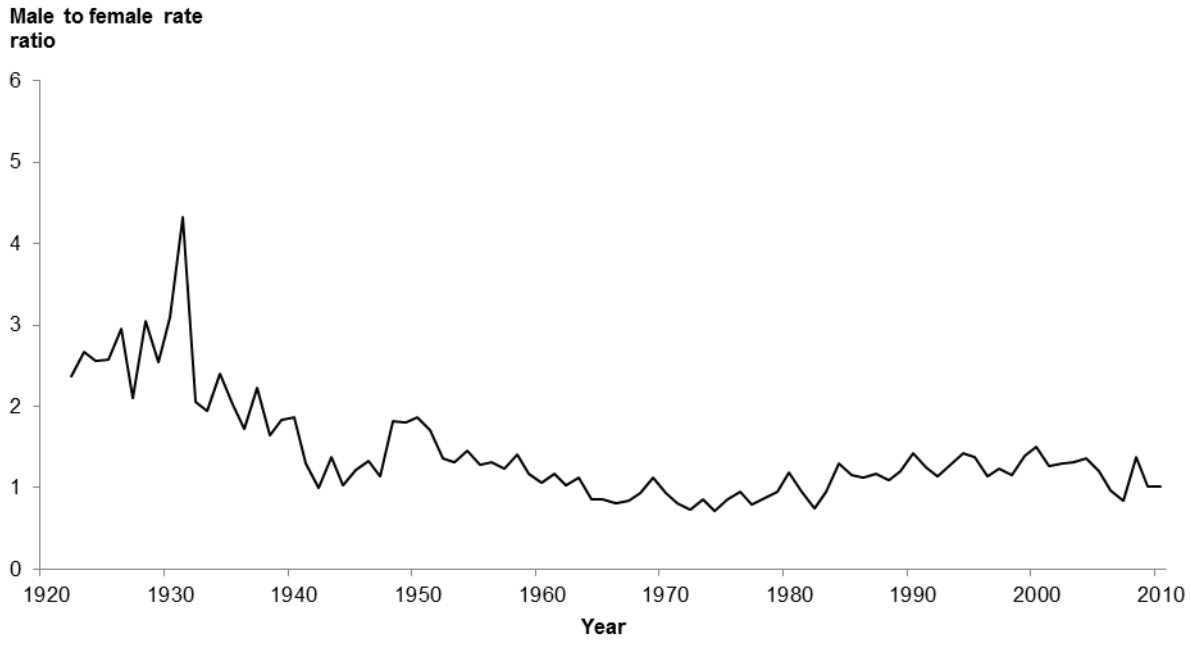



*Notes*

1. Rates for 1922 to 1963 are by year of registration (grey) and rates for 1964 to 2010 are by year of death (black).
2. A table corresponding to this figure, Table A4.4, can be found in Appendix 4.

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 6.1: Suicide rates by exposure to poisons (except gas), Australia, 1922 to 2010**



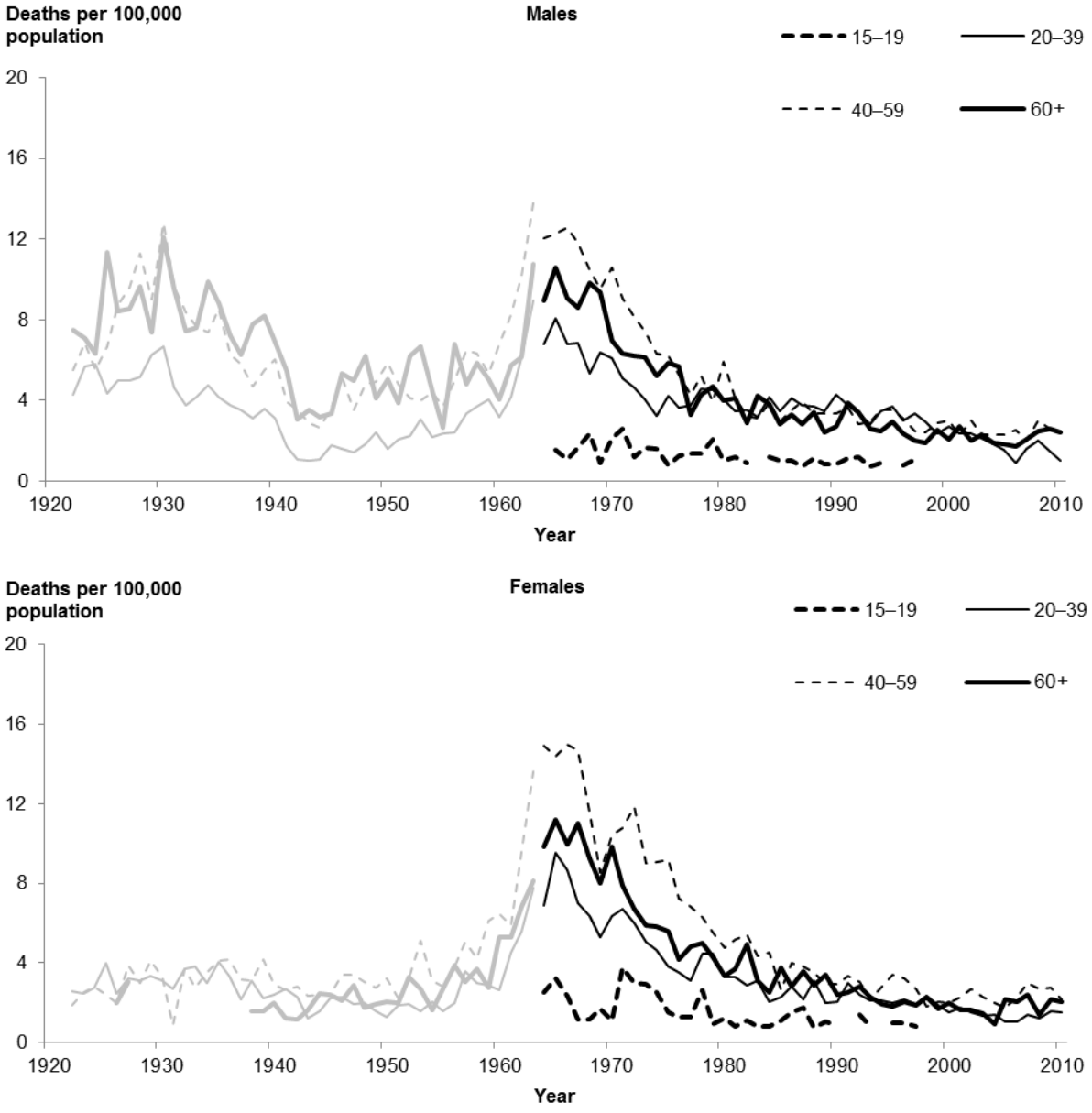

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 6.2: Male to female rate ratio for suicides by exposure to poisons (except gas), Australia, 1922 to 2010**

## Trends by age group and sex

Male rates for suicides due to exposure to poisons (except gas) were noticeably higher than female rates in the period from 1922 to around 1940 (Figure 6.2) but rates for males and females were remarkably similar for the remainder of the period through to 2010.

The peak in male and female rates observed during the 1960s for suicides due to exposure to poisons (except gas) was evident across all age groups charted, except the youngest (Figure 6.3). The peak was highest for middle-aged males and females.




*Notes*

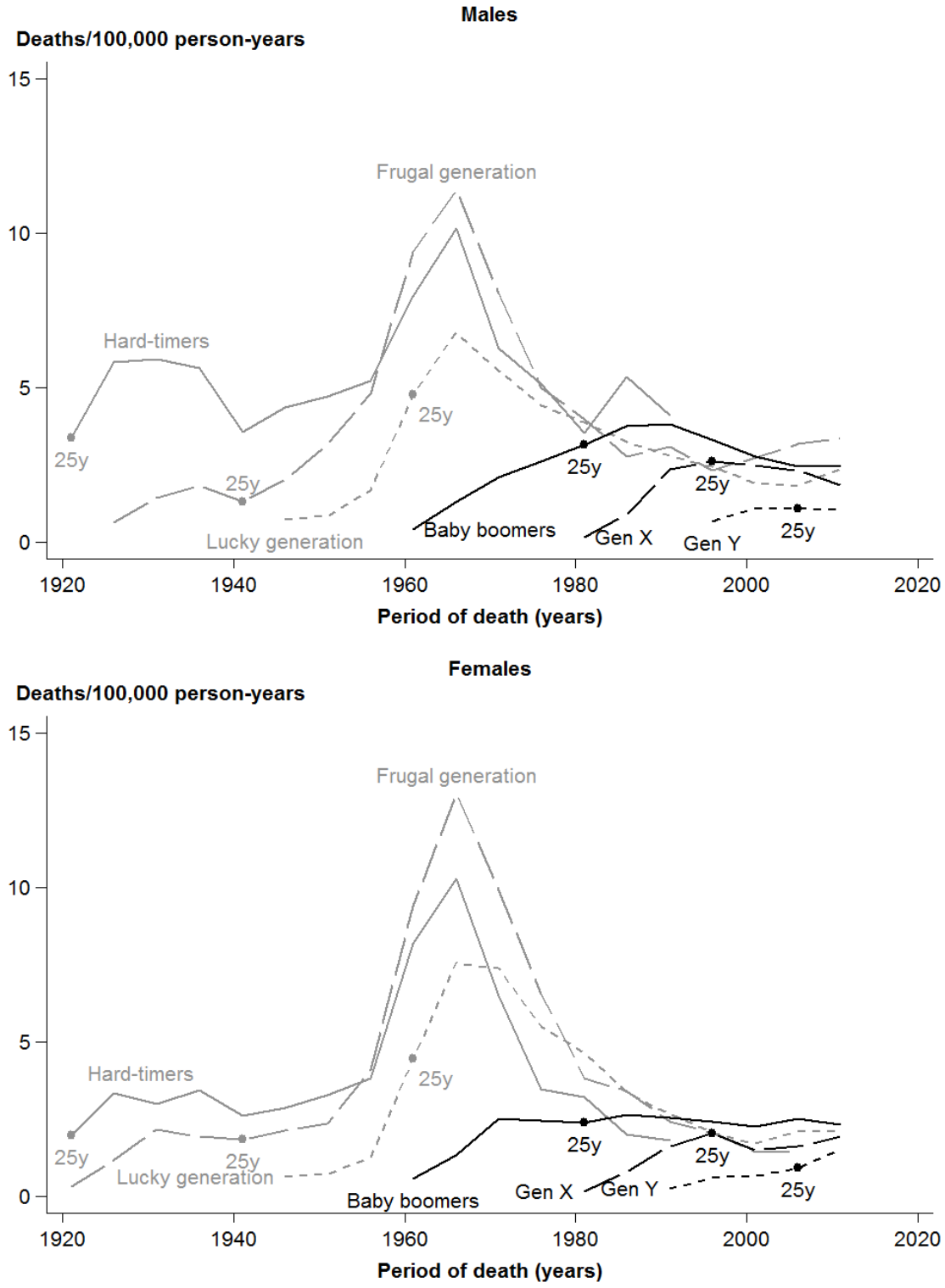
1. Rates for 1922 to 1963 are by year of registration (grey) and rates for 1964 to 2010 are by year of death (black).
2. Male and female rates for those aged 15–19 for the period 1922 to 1963 are not shown due to small case numbers.

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 6.3: Male and female suicide rates by exposure to poisons (except gas), for selected age groups, Australia, 1922 to 2010**

## Trends by birth cohort

Age-specific rates of suicide by *Exposure to poisons (except gas)* are shown in Figure 6.4 for birth cohorts, aligned on period of death. Male and female rates in 3 birth cohorts (Hard-timers, the Frugal Generation and the Lucky Generation) all peaked sharply during the 1960s, suggesting influential period factors. As noted above, changes in types and availability of sedatives and sleeping medications, particularly barbiturates, have been proposed as the main causal factor for this peak in rates (Oliver & Hetzel 1972). Most members of the Baby boomer cohort were too young to have been much exposed to the barbiturates which were widely available during the 1960s, while those in later generations were born after this event. Notably, the extent of the exposure to barbiturates was similar for males and females.




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

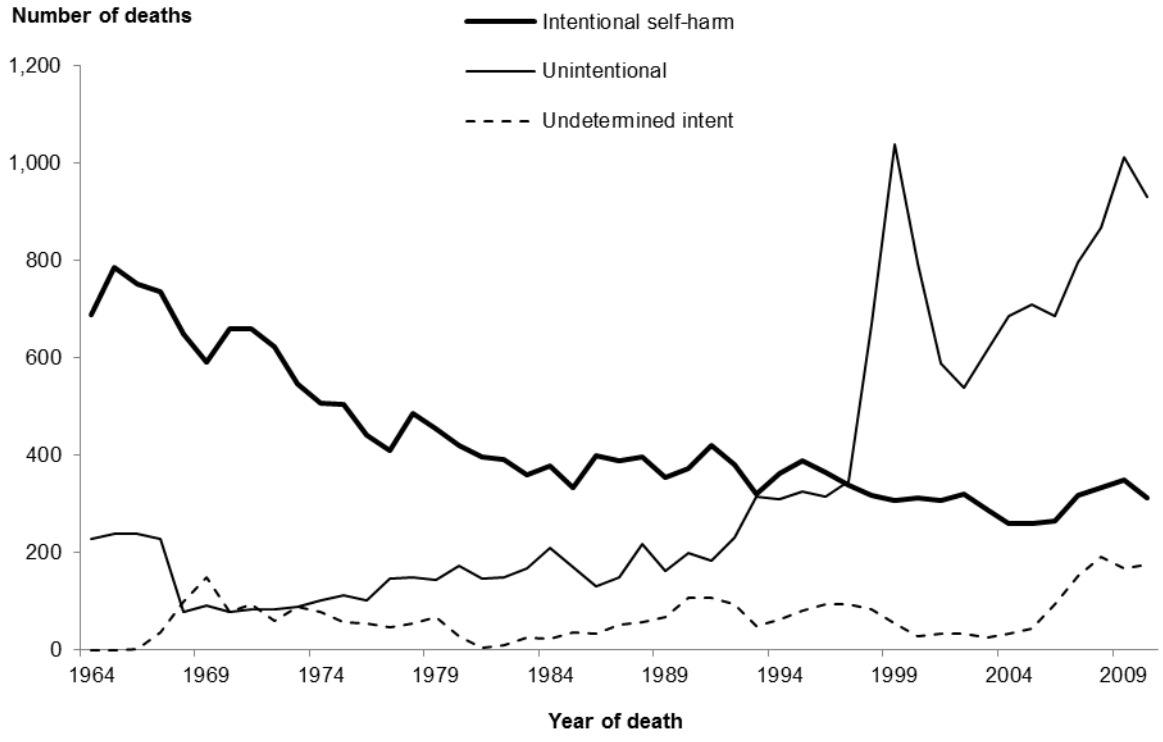
**Figure 6.4: Male and female rates of suicide by poisons (except gas), by period of birth and period of death, Australia, 1921 to 2010**

## 6.2 Trends by injury intent

Unlike hanging and firearms, the number of 'unintentional' and 'undetermined intent' deaths due to *Exposure to poisons (except gas)* was significant when compared to the number of deaths due to intentional self-harm over the period from 1964 to 2010 (Figure 6.5). From the late 1990s to the end of the period, the number of unintentional deaths for this mechanism was markedly higher than the number of deaths due to intentional self-harm.

The sharp increase in the number of unintentional deaths in the late 1990s is at least partly a result of coding changes: previously, many cases involving unintentional drug poisoning were coded to mental health codes in the ICD (Kreisfeld & Harrison 2005). This occurred at a time of high mortality due to heroin overdoses, which declined from about 2000 (Degenhardt et al. 2014).

The number of deaths classified as 'undetermined intent' varied markedly over the period from 1964 to 2010, with the highest count (192 deaths) observed in 2008.

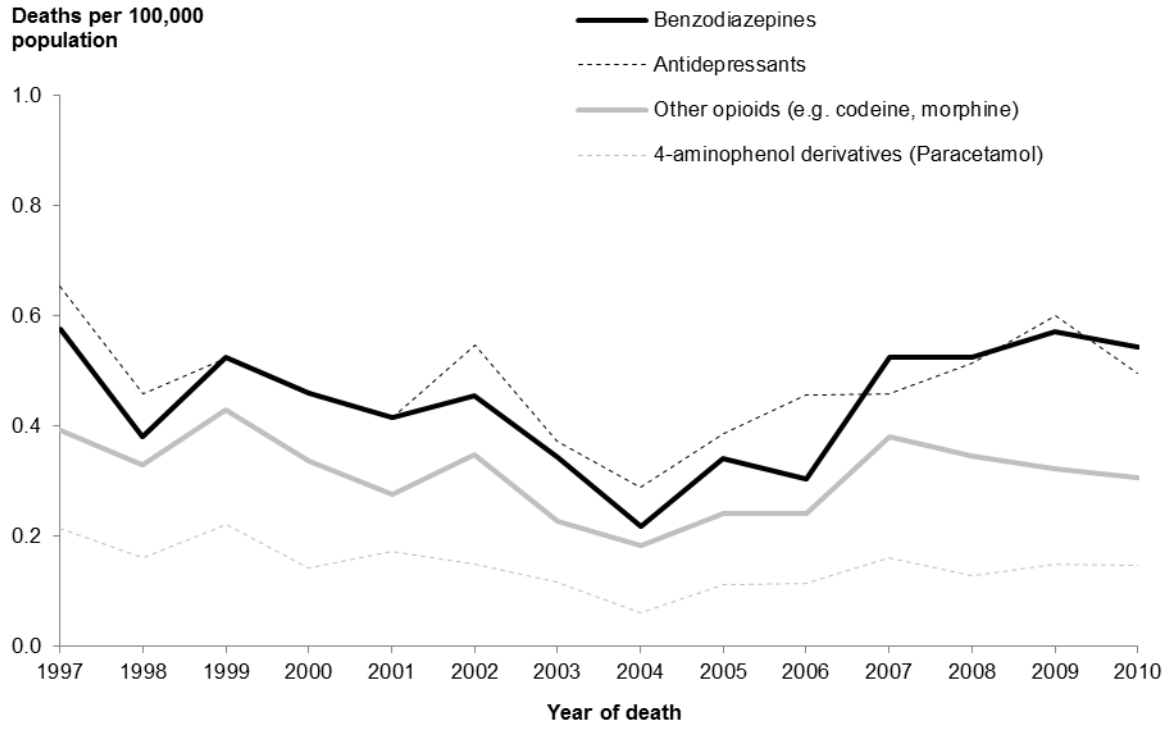



*Source:* AIHW National Mortality Database.

**Figure 6.5: Number of deaths by exposure to poisons (except gas), by intent, Australia, 1964 to 2010**

## 6.3 Trends for commonly used drugs

Figure 6.6 shows the age-adjusted rate of suicide deaths involving 4 different classes of commonly used drugs for the period from 1997 to 2010. Rates for cases involving poisoning benzodiazepines and antidepressants were the highest over this period. The percentage of these deaths that involved benzodiazepines increased from around 30% to around 40% over the period.




*Source:* AIHW National Mortality Database.

**Figure 6.6: Suicide rates by poisoning, by exposure to commonly used drugs, Australia, 1997 to 2010**

# 7 Trends in suicide by gas

Interpretation of changes in rates for suicides due to poisoning by exposure to gas is complicated by the involvement of 2 main sources of gas—domestic utility gas and motor vehicle exhaust gas—with different but overlapping time-courses. Suicide deaths involving both of these sources occur because of exposure to toxic levels of carbon monoxide (CO).

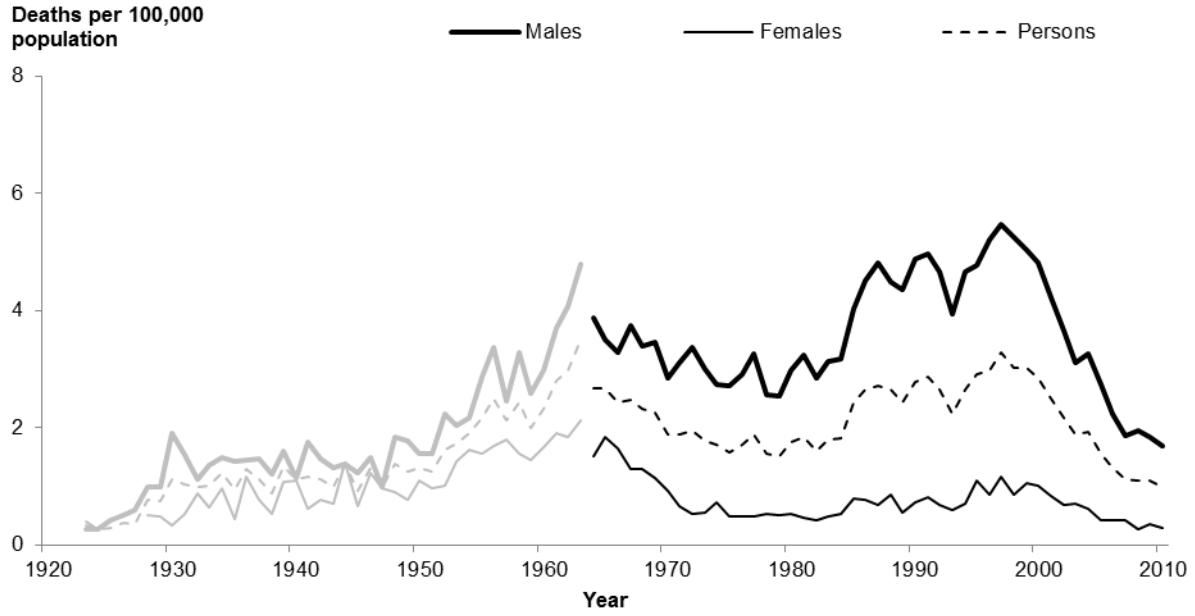
Gas-fuelled cooking and heating appliances have been common in Australia since the 1920s. Until the 1960s they were usually fuelled by 'manufactured gas' derived from coal, toxic because of its high CO content. By the 1970s, after a generally rapid transition, this fuel had largely been replaced by 'natural gas' (mainly methane) and liquefied petroleum gas (LPG; propane and butane), neither of which contains significant amounts of CO.

Ownership of motor vehicles, mainly passenger cars with petrol engines, became widespread in Australia in the 1950s. The exhaust gas of petrol engines contains potentially toxic levels of CO, which can be reduced by various technologies. Emission control requirements, introduced in 1986 (for environmental reasons) and tightened several times since, have greatly reduced the allowed content of CO in the exhaust gas of new vehicles.

It is not practicable to report cases of suicide by gas according to source of exposure in the years before 1964, due to the nature of the available data. Useful distinctions are possible using more recent data, though changes in classification complicate this. Accordingly, Section 7.1 presents data for all suicides involving poisoning by exposure to gas for the period 1922 to 2010, while Section 7.3 presents data and discussion separately for suicides involving poisoning by exposure to domestic utility gas and motor vehicle exhaust gas for the period commencing 1964. Section 7.3 also provides a more detailed discussion of the 2 main sources of CO.

## 7.1 Trends: 1922–2010

Age-adjusted rates for male suicides due to poisoning by exposure to gas varied markedly over the period from 1922 to 2010 (Figure 7.1). Rates rose substantially between about 1950 and the early 1960s before dipping slightly. Rates remained elevated for much of the 1980s and 1990s before dipping dramatically towards the end of the period. A similar pattern was observed for female rates, although to a lesser extent.



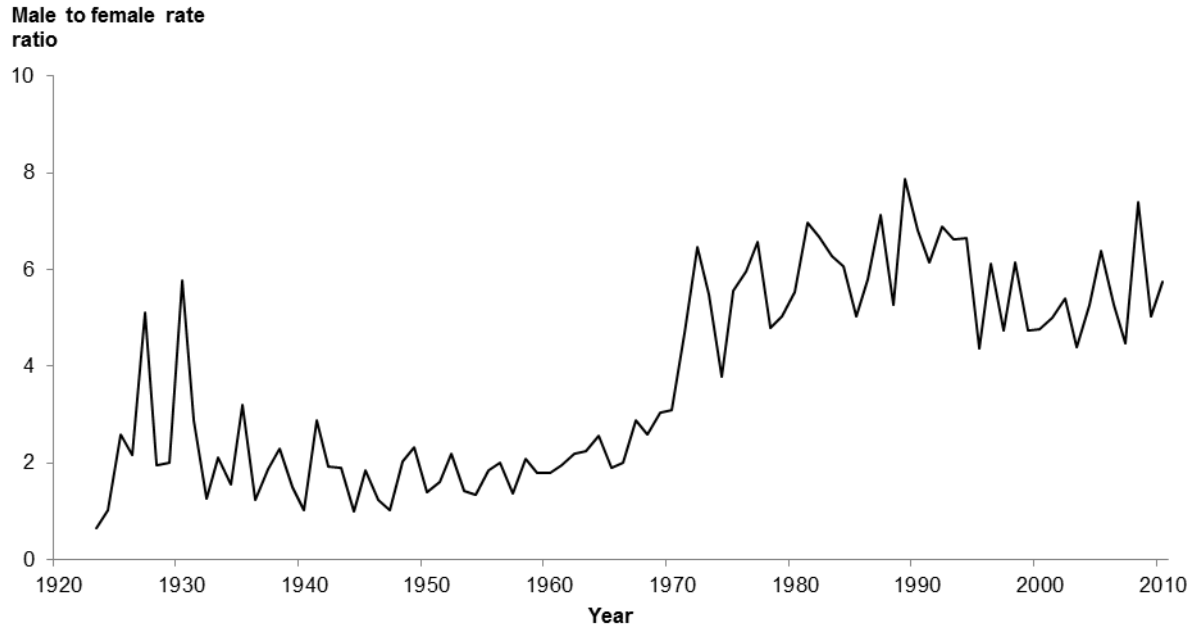

*Notes*

1. Rates for 1922 to 1963 are by year of registration (grey) and rates for 1964 to 2010 are by year of death (black).
2. A table corresponding to this figure, Table A4.5, can be found in Appendix 4.

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 7.1: Suicide rates by exposure to gas, Australia, 1922 to 2010**

After fluctuations in the 1920s, male rates of suicide due to poisoning by exposure to gases were consistently around double those of female rates from the early 1930s to the mid-1960s, when the rate ratio increased to around 6 (Figure 7.2).



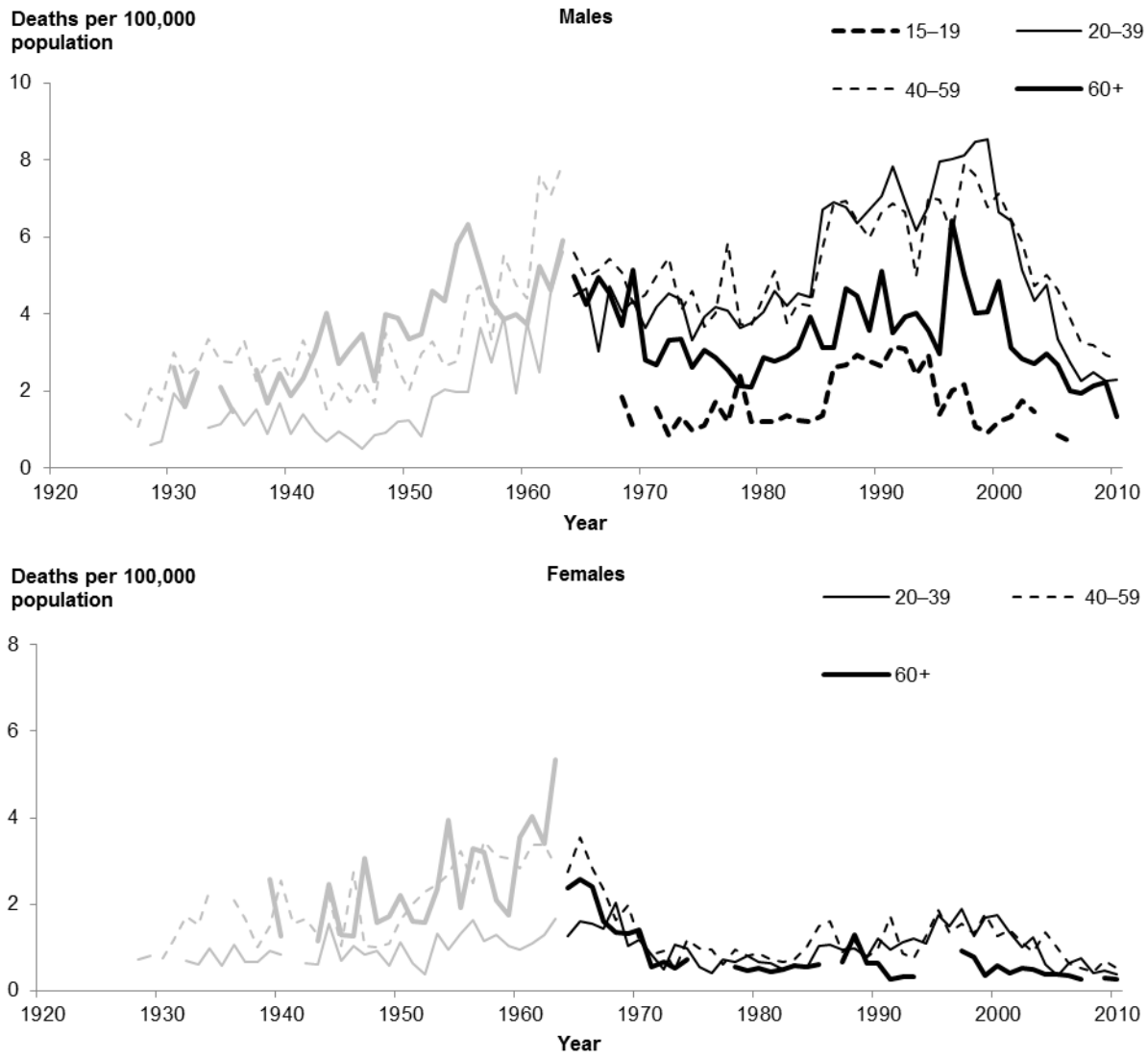

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 7.2: Male to female rate ratio for suicide by exposure to gas, Australia, 1922 to 2010**

## Trends by age group and sex

Broadly similar patterns in rates were observed for male suicides due to poisoning by exposure to gaseous substances for all 4 age groups over the period from 1922 to 2010 (Figure 7.3). From the start of the period to the early 1960s, rates for males aged 20–39 were generally lower than rates for males in the 2 oldest age groups. However, from the early 1970s through to 2010, rates for males aged 20–39 were the highest, along with males aged 40–59. Rates for males aged 15–19 remained relatively low for most of this period, except for a period from the mid-1980s to the mid-1990's when rates were up to 3 times as high compared to the rest of the period.

Rates for females in the 2 oldest age groups were highest during most of the 1950s and 1960s. Rates for females aged 15–19 were not presented due to low case numbers.




*Notes*

1. Rates for 1922 to 1963 are by year of registration (grey) and rates for 1964 to 2010 are by year of death (black).
2. Rates for females aged 15–19 and rates for males aged 15–19 for the period from 1922 to 1963 are not shown due to low case numbers.

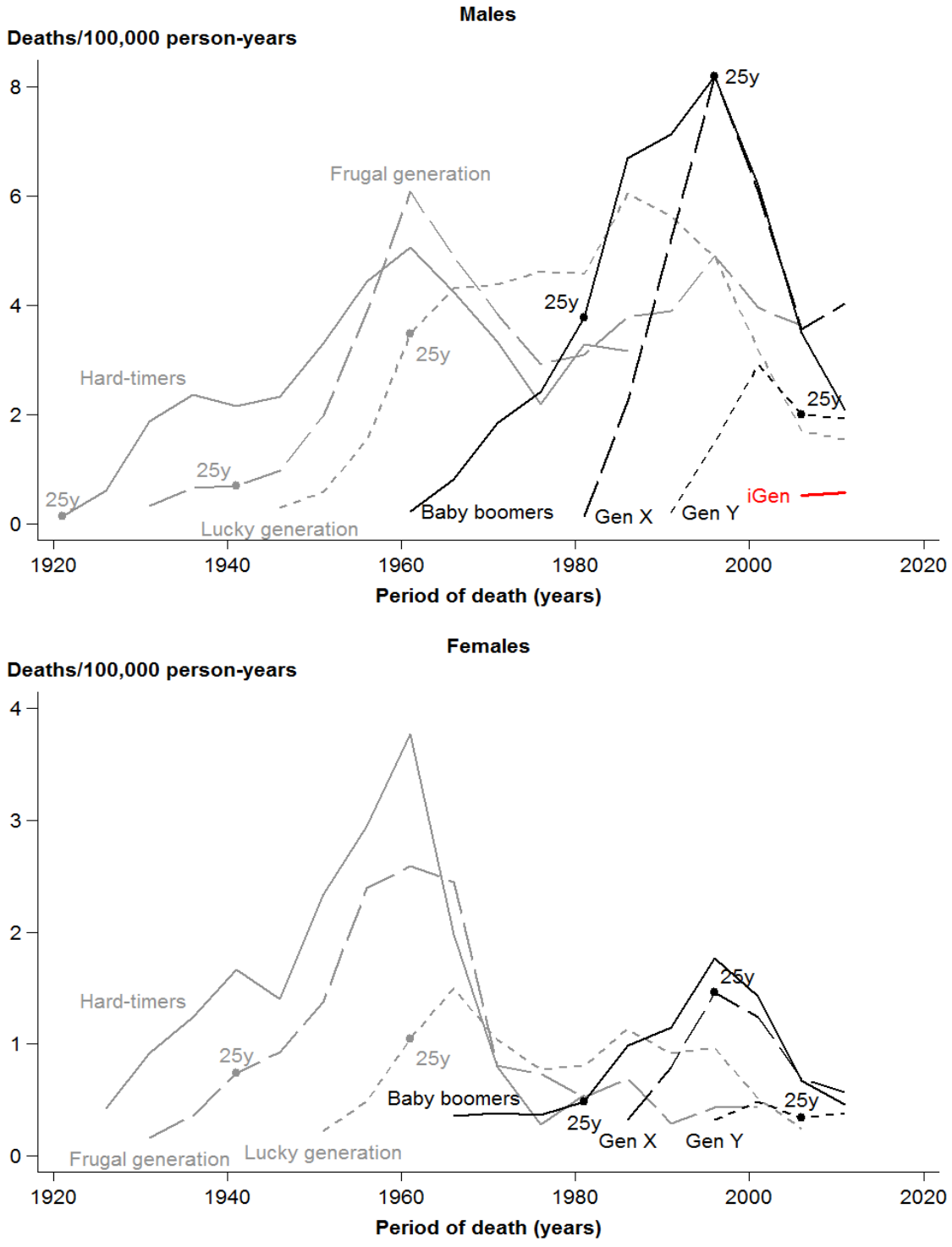
*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 7.3: Male and female suicide rates by exposure to gas, for selected age groups, Australia, 1922 to 2010**

## Trends by birth cohort

Age-specific rates of suicide by exposure to gas are shown in Figure 7.4 for birth cohorts. When these rates are aligned on period of death, it can be seen that male and female rates in 2 birth cohorts (Hard-timers and Frugal Generation) both peaked around 1960, suggesting influential period factors. There was also a moderate peak in female rates for the Lucky Generation centred around the mid-1960s.

Male and female rates in 2 birth cohorts (Baby boomers and Gen X) both peaked sharply during the late 1990s, irrespective of age, again suggesting influential period factors. There was also a moderate peak in male rates for the Frugal Generation cohort for the same period. Male rates for the Lucky Generation peaked about 10 years earlier.




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 7.4: Male and female rates of suicide by gas, by period of birth and period of death, Australia, 1921 to 2010**

## 7.2 Trends by injury intent

Intentionally self-inflicted cases made up the bulk of all poisonings due to gases in Australia throughout the period since the mid-1960s (Figure 7.5). The moderately elevated number of unintentional deaths mainly during the 1960s may be related to accidental exposure to gases leaking from domestic appliances then fired by toxic coal gas.


*Source:* AIHW National Mortality Database.

**Figure 7.5: Number of deaths by exposure to gas, by intent, Australia, 1964 to 2010**

## 7.3 Trends by exposure to domestic gases and motor vehicle exhaust

Understanding trends in data on suicide by gas requires recognition that 2 main sources have been involved: domestic utility gas (that is, gas used for cooking and heating) and motor vehicle exhaust gas. Important changes in trends of deaths from these sources occurred in the 1960s and 1990s. However, study of these periods is complicated by changes in the form of deaths data (with a transition to electronic unit record data in 1964) and changes in the version of the ICD in use.

Data are shown in this section as case counts by the source of gas. Because the data changes referred to occurred between ABS reference years, data in this section are presented in terms of reference years.

## Distinguishing sources of gas in ICD revisions

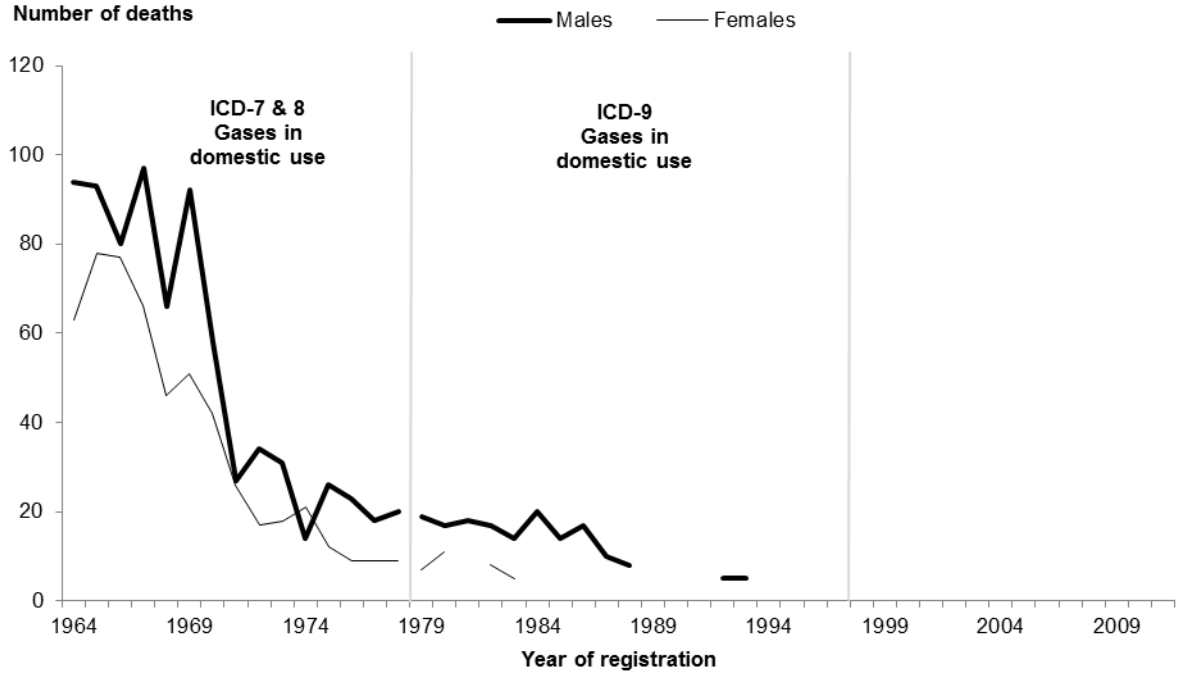
Figure 7.6 shows suicide deaths due to poisoning by gas from 1964 to 2011, the period for which deaths data exist as electronic unit records (in the National Mortality Database). Four revisions of the ICD (ICD-7 to ICD-10) were used to code causes of deaths during this period. Changes between the revisions affect the types of cases that can be distinguished. ICD revisions 7 and 8 provide the same information on suicide by gas, and so they are considered together. Revisions 9 and 10 were both applied to data for 1997 and 1998, providing useful overlap.

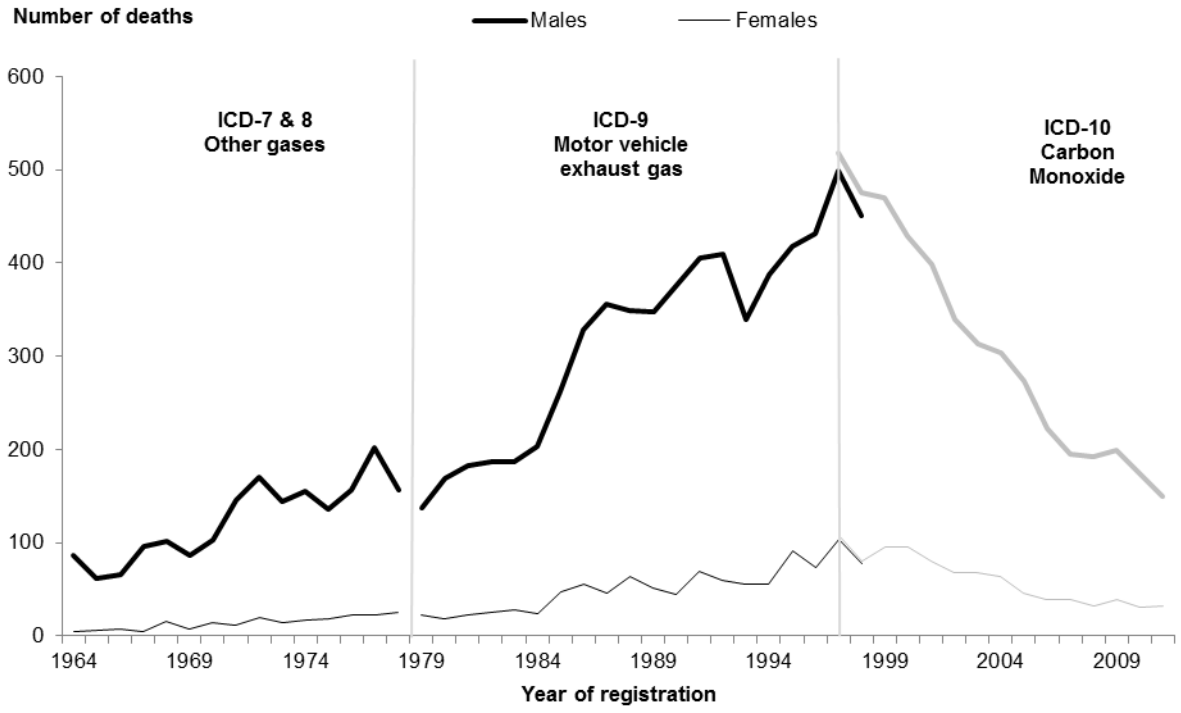
ICD revisions 7, 8 and 9 all include a category for domestic gas, allowing the numbers of cases coded to this cause to be charted in the upper panel of Figure 7.6 for the years 1964 to 1998. ICD-10 does not have an equivalent category. However, by the last part of the period in which ICD-9 was used, the number of suicide cases attributed to domestic gas had dropped to a low level (for example, a total of 6 cases in the last 2 years in which ICD-9 was used) and motor vehicle exhaust gas was the reported source for over 95% of cases. Scrutiny of the literature and of National Coronial Information System (NCIS) data for more recent years has given no indication that the number of cases due to domestic gas has increased substantially.

ICD-9 is the only revision to have a category specifically for suicide by motor vehicle exhaust gas (E952.0). Cases with this code are charted in the lower panel of Figure 7.6 for the years 1979 to 1998. Note that the case counts near the start of that period are similar to the ICD-8 counts of suicide by 'other gases'. Burvill (1989), in a paper on patterns of suicide by gassing in Australia during the period when ICD 6, 7 and 8 were in use, stated that suicide by 'other gases in the great majority of cases means carbon monoxide poisoning from the exhaust of motor vehicles'.

ICD-10 does not have a category for suicide by motor vehicle exhaust gas. However, multiple causes of death are recorded in this period, allowing cases of suicide by gas to be restricted to the cases due to the toxic effects of carbon monoxide, the poisoning agent in suicide by motor vehicle exhaust gas (ICD-10 part of lower panel in Figure 7.6). The ABS coded the deaths registered in 1997 and 1998 to both ICD-9 and ICD-10, allowing assessment of how closely case-counts of ICD-10 suicide by carbon monoxide (ICD-10) correspond to suicide by motor vehicle exhaust gas (ICD-9). In the period of overlap, suicide by motor vehicle exhaust gas (ICD-9) accounted for almost 96% of all suicides by carbon monoxide (ICD-10) for both males and females.

While there is no exact correspondence of scope between the charted cases in the 3 periods, Figure 7.6 provides the best practicable presentation of trends in cases of suicide by gas due to each of the 2 main sources since 1964.




*Notes*

1. Year of registration counts less than 5 are not shown.
2. In the bottom figure, the black lines for both males and females, extending into the ICD-10 period, show the number of deaths coded to ICD-9 code E952.0: *Suicide by exposure to motor vehicle exhaust gas*, in 1997 and 1998, when cases were coded according to ICD-9 and ICD-10. The grey lines represent the number of deaths assigned ICD-10 codes for *Carbon monoxide poisoning.*

*Source:* AIHW National Mortality Database.

**Figure 7.6: Suicide deaths by domestic gases and motor vehicle exhaust, by ICD period and sex, Australia, 1964 to 2011**

## Domestic utility gas

The most notable feature depicted in the upper panel of Figure 7.6 is the sharp decrease in suicidal deaths from exposure to domestic gases for both males and females from about 1964 to the early 1970s.

Domestic gas was widely available in cities and towns in Australia from the last quarter of the 19th century. It was usually made by carbonising black coal, which produces gas with a high CO content. Gas was mainly used for lighting until the early part of the 20th century, when electricity replaced it for that purpose. Cooking and heating emerged as new uses for gas. By the 1930s, nearly every new home in Melbourne had a gas stove and most also had a gas hot-water system and a gas heated copper, for washing clothes (Proudley 1987).

By-products of oil refining partly (as blends) or wholly (as LPG) replaced coal gas from the late 1950s (Proudley, 1987). Natural gas (methane) replaced all other sources in much of Australia in about 1970. Where natural gas was not available, the usual alternative was LPG (propane). Neither natural gas nor LPG has significant CO content, though combustion of either in a poorly ventilated space can create toxic conditions.

Poisoning by domestic gas became a fairly common mechanism of suicide during the 1920s (Burvill, 1989), peaking in the early 1960s. Unintentional deaths were not infrequent.

After the peak in the early 1960s, suicide deaths by domestic gas dropped rapidly to a very low level in Victoria and in most other parts of Australia by the early 1970s. The decline coincides with the changes in the composition of domestic gas noted above. A partial exception to the pattern of decline is NSW, where case numbers dropped rapidly by approximately half in the 1970s, before declining more gradually to a very low level over about 10 years. The reasons for this difference are not known.

## Motor vehicle exhaust gas

While similar numbers of men and women died each year from suicide by domestic gas, many more men than women died from suicide by motor vehicle (MV) exhaust gas (as seen in the lower panel of Figure 7.6). In the mid to late 1960s, about as many men died by exhaust gas as by domestic gas, while many more women died by means of domestic gas than exhaust gas.

There was a marked increase in the annual number of MV exhaust gas suicide cases for both males and females, reaching a peak in 1997. For males, there was more than a fivefold increase from 87 deaths in 1964 to 499 deaths in 1997, while for females, the number of deaths increased from 5 in 1964 to 104 in 1997.

Case counts declined steeply after the peak, the numbers in the ABS reference year of 2011 being less than one-third of the 1997 peak for both males and females (the decline was even larger in terms of population-based rates).

The Commonwealth Government has set standards for MV emissions, including CO emissions, since the 1970s <www.infrastructure.gov.au/roads/environment/emission>. Considering petrol-powered passenger vehicles, the largest reductions applied to new vehicles sold from 1 February 1986, when permitted CO dropped from 24.2 g/km to 9.3 g/km. A further large reduction was applied to new models introduced from 1 January 1997 and to new vehicles sold from 1 January 1999, when permitted CO dropped to 2.1 g/km. Further tightening reduced allowed emissions to 1 g/km for new models introduced from July 2008 and to new vehicles sold from July 2010.

Studies have investigated possible effects of these changes on suicide rates by MV exhaust gas.

Vehicles manufactured after 1997 were under-represented among MV exhaust gas suicide deaths in Victoria in 2002, though socioeconomic factors might have contributed to this. Some fatal cases occurred in vehicles manufactured under the 2.1 g/km limit, though average blood levels of carboxyhaemoglobin (COHb) were lower in these cases than in cases involving older vehicles (Brennan et al. 2006).

Statistically significant correlations were found between rates of MV exhaust gas suicide among residents of specific small areas (postcodes; statistical subdivisions) and the proportions of registered vehicles in the same areas that had been manufactured before 1986 or before 1999 (Studdert et al. 2010). Data were examined for the 6 years 2001 to 2006. Statistical models were adjusted for socioeconomic factors at area level.

These studies suggest that the reduction of MV exhaust gas suicide deaths in Australia might be a fortunate, though unintended, consequence of the CO emission controls. However, even if the relationship is causal (and the authors of both studies rightly note their limitations), neither the mechanism nor the relationship of risk to permitted emission level are clearly established. Studdert and others (2010) appear to show effects of both the reduction from 24.2 g/km to 9.3 g/km and that from 9.3 g/km to 2.1 g/km. However, Brennan et al. (2006) found deaths in vehicles built to meet the 2.1 g/km limit. Is the decline entirely due to declining case lethality, or has use of the method also declined, perhaps due to knowledge of the emission controls?

A finding by Brennan and others (2006), of lower post-mortem COHb in cases that occurred with cars manufactured after 1997, raises the possibility that a larger proportion of individuals who use this method might survive as the proportion of post-1997 vehicles increases. It is unclear whether to expect an increase in hospitalised cases if that is so; admission might be expected in cases where a person is found alive but unconscious, but perhaps not in cases in which a person does not become unconscious. Brennan and others (2006) presented inconclusive data on admitted cases of intentional self-harm by gas in Victoria from 1998–2002. National rates for the 12 years to 2010–11 show a decline in rates of hospitalised cases, but much less than the decline in fatal cases (Figure 14.5). For those hospitalised as a result of poisoning by exposure to gaseous substances, the percentage of cases exposed to motor vehicle exhaust fell from 75% to 66% in the period from 2006–07 to 2011–12 (Figure 12.12). This can be interpreted as a continuation of the decline in case-lethality for intentional self-harm by gas reported previously (Elnour & Harrison 2008; Studdert et al. 2010).

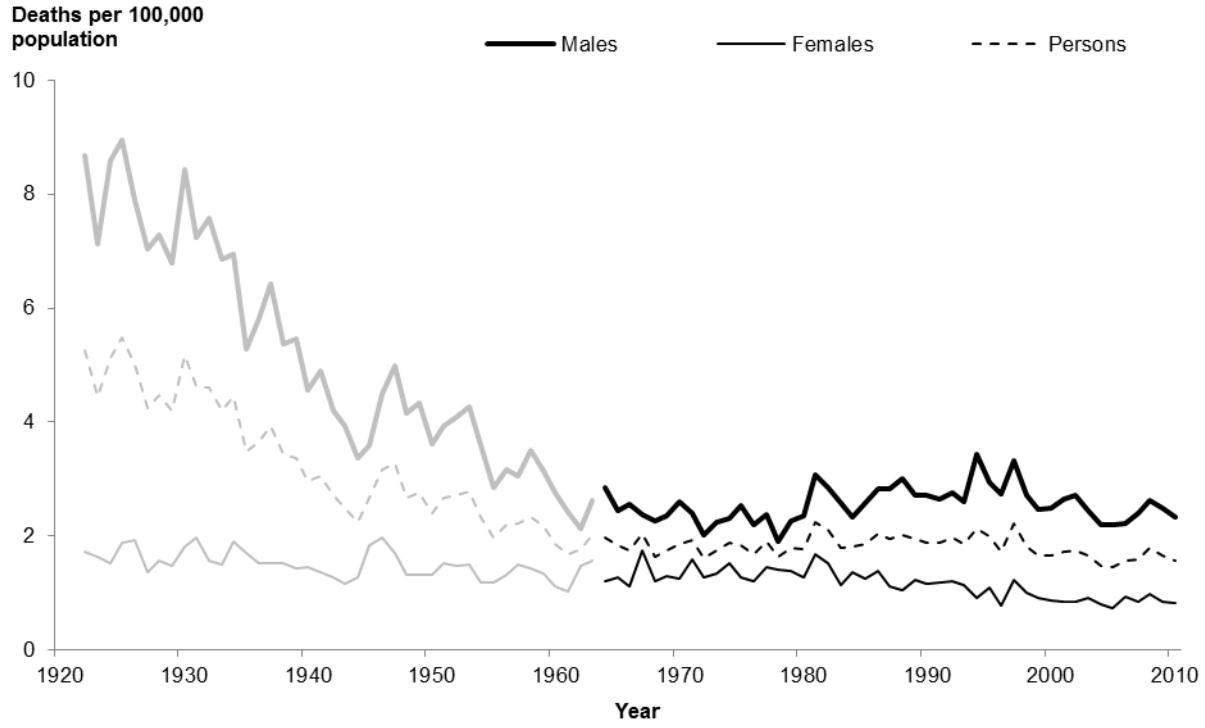
Most passenger vehicles in Australia remain registered for more than a decade after initial purchase, so nearly a decade had to pass after each of these standards was introduced before half of all registered vehicles were ones that met that standard. For example, 45% of passenger vehicles registered in 1997 had been manufactured before 1987 (ABS 1998). Similarly, 40% of passenger vehicles registered in 2009 had been manufactured before 1999 (ABS 2009a). Moreover, the vehicle fleet is older in some parts of Australia than others, and segments of the population with relatively high suicide rates might be expected to tend to own relatively old vehicles (for example, young adults and poorer people).

# 8 Trends in suicide by other mechanisms

## 8.1 Trends: 1922–2010

This section reports briefly on trends of suicide by mechanisms other than hanging, shooting and poisoning by gases or other substances.

Age-adjusted rates for male suicides due to other mechanisms of injury fell markedly between 1922 and the early 1960s and were relatively steady thereafter (Figure 8.1). Due to a lack of available data for nearly all mechanisms of injury between 1922 and 1963, other than those discussed previously in this report, the specific mechanisms responsible for the fall in male rates prior to 1963 are not able to be determined. Female rates were steady over the entire period from 1922 to 2010.




*Notes*

1. Rates for 1922 to 1963 are by year of registration (grey) and rates for 1964 to 2010 are by year of death (black).
2. A table corresponding to this figure, Table A4.6, can be found in Appendix 4.

*Source:* AIHW National Mortality Database and GRIM Books.

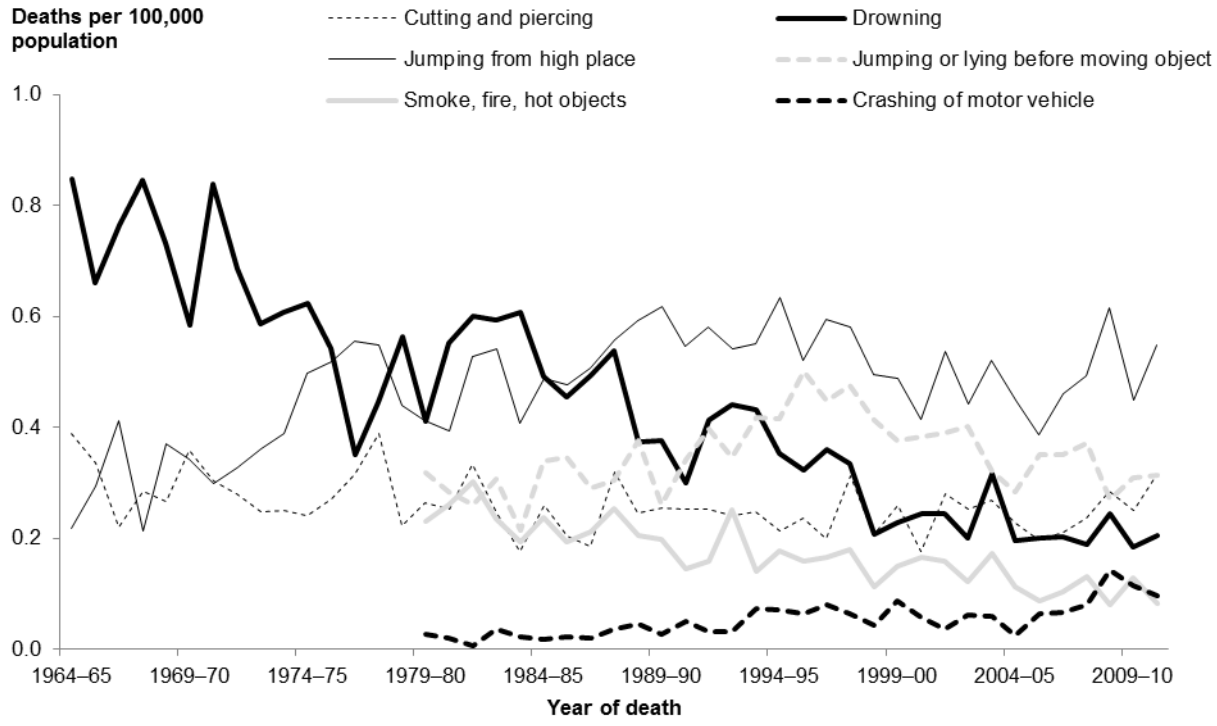
**Figure 8.1: Suicide rates for deaths due to other mechanisms, Australia, 1922 to 2010**

## 8.2 Trends by mechanism

Figure 8.2 shows age-adjusted suicide rates for other mechanisms of suicide for the period from 1964–65 to 2010–11. It should be noted that specific ICD codes for mechanisms involving crashing of motor vehicle; exposure to smoke, fire and hot objects; and jumping or lying before moving object did not exist prior to the implementation of the ninth revision of the ICD, which was applied to Australian deaths data from 1979.

There was a marked downward trend in rates of suicide due to drowning over this period. Rates for suicide due to contact with a sharp object were relatively steady while rates for suicide due to jumping from a high place were relatively steady from the mid-1970s, after a rise early in the period charted.

Rates for suicides involving crashing of a motor vehicle rose over the period from 1979–80 (though at a low level), while rates for suicides involving exposure to smoke, fire, flames and hot objects decreased. Rates of suicide due jumping or lying before a moving object rose to a peak in the mid-1990s before declining.




*Note:* Rates for Smoke, fire, hot objects, Jumping and lying before moving object and Crashing of motor vehicle are not available before 1979–80.

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure 8.2: Suicide rates for deaths due to selected mechanisms, Australia, 1964–65 to 2010–11**

# 9 Trends in suicide rates by remoteness: 2001–02 to 2010–11

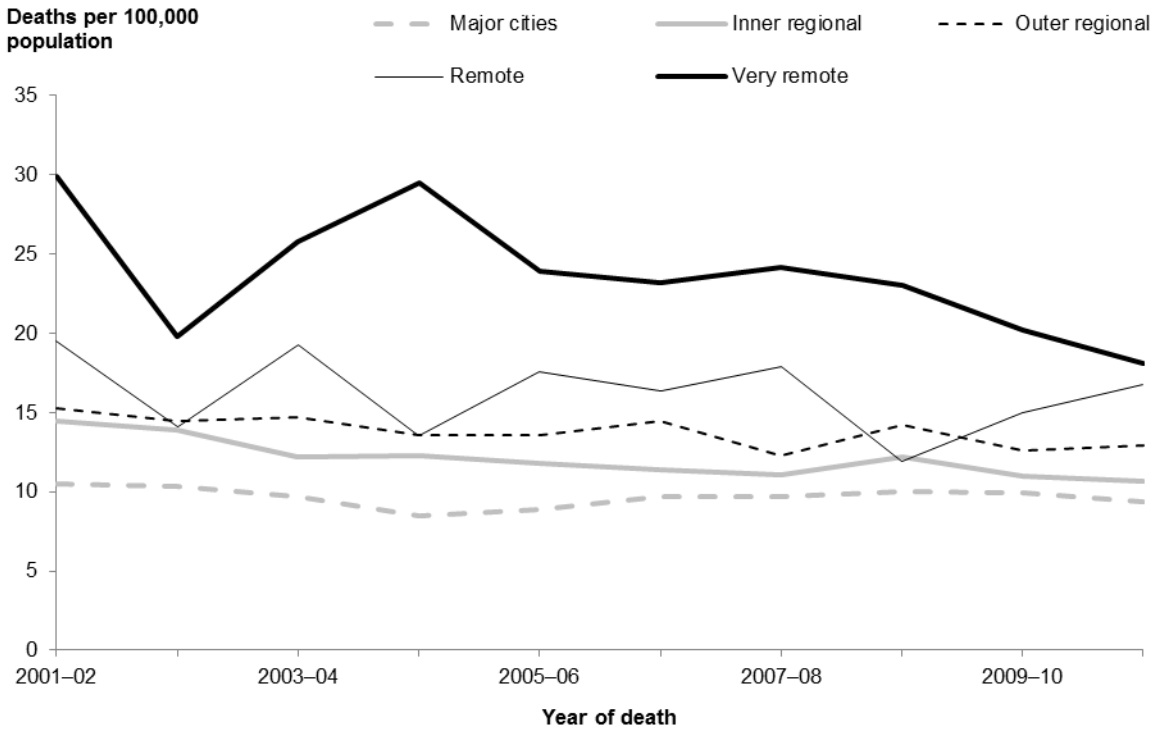
Rates of suicide in 2010–11 rose with the remoteness of place of residence (Section 2.4). Figures 9.1 to 9.3 show the same pattern in age-adjusted suicide rates for all causes and for selected mechanisms of suicide by remoteness area of residence for the period from 2001–02 to 2010–11, the period for which comparable remoteness data are available.

Rates for residents of *Major cities* were the lowest of all 5 remotness zones in every year and rates for residents of the *Very remote* zone were consistently the highest, with rates for residents of the other zones intermediate (Figure 9.1). Rates for the *Remote* and *Very remote* zones fluctuated due to relatively small counts. Rates for residents of the *Very remote* zone declined in the last 4 years charted and the rate was similar to that for residents of the *Remote* zone at the end of the period.

A pattern in rates, similar to that described above for all causes of suicides, was also observed for deaths due to hanging (Figure 9.2). There was a slight increase over time in rates for residents of the *Very remote* zone during this period, while rates for the residents of the other 4 zones were relatively steady.

Similar to the pattern for suicides from all causes and for suicides due to hanging, rates for suicide deaths due to firearm discharges tended to increase with the remoteness of the person's place of residence (Figure 9.2). There were slight decreases over time in rates for residents of *Inner regional* and *Outer regional* zones, while rates for residents of the *Remote* zone fluctuated markedly due to relatively small counts. Counts for residents of the *Very remote* zone were too small for any meaningful interpretation of trends in rates.

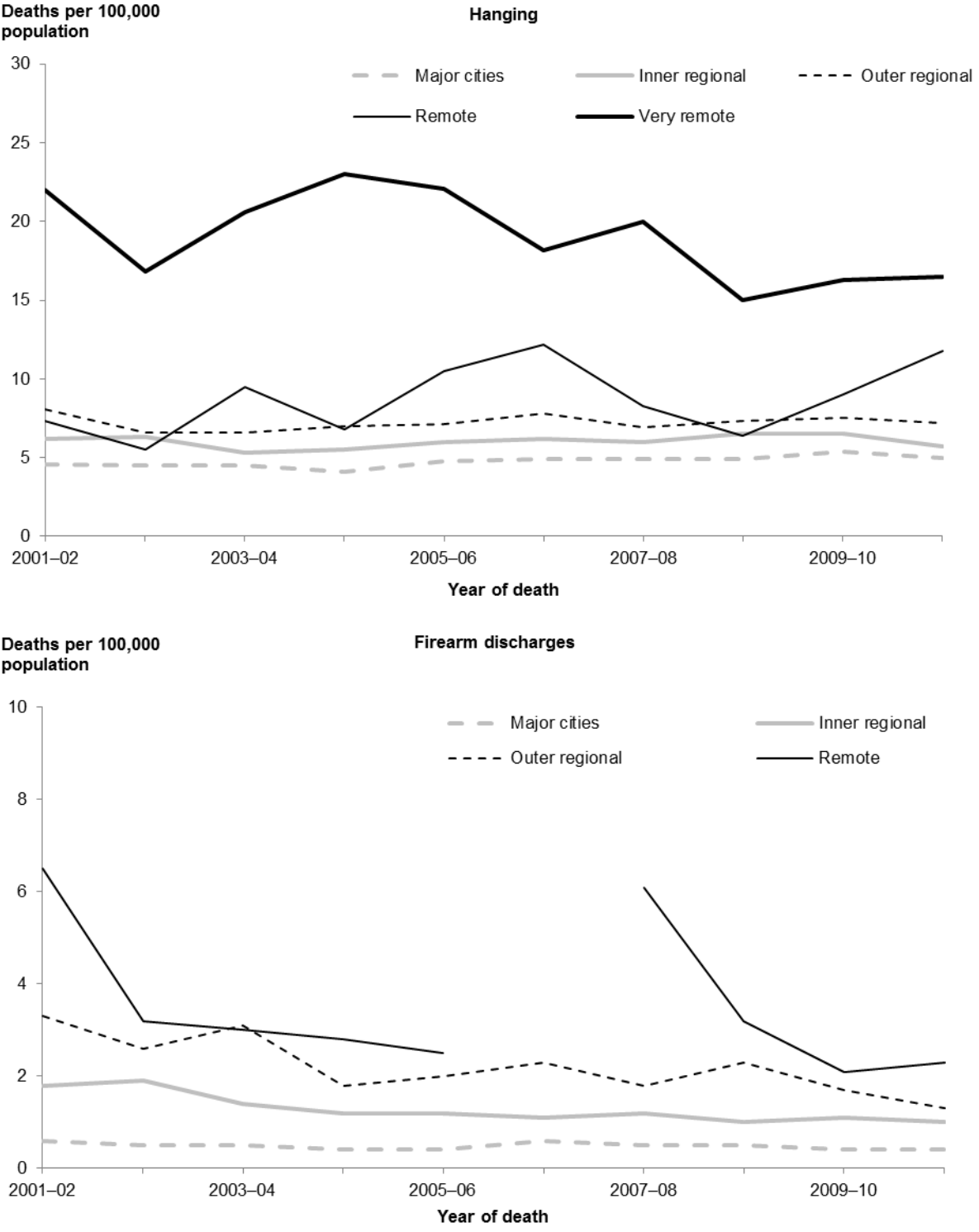
Suicide rates due to exposure to poisons other than gases and deaths due to exposure to gaseous substances, were similar for residents of the 3 least remote zones (Figure 9.3). Rates for those exposed to poisons other than gases for these 3 zones were relatively steady over this period, while rates for those exposed to gaseous substances exhibited a downward trend, most noticeable in residents of the *Inner Regional* zone. Counts for residents of the *Remote* and *Very remote* zones for both these mechanisms were too small for meaningful interpretation of trends in rates.




*Note:* Rates not shown prior to 2001–02 since comparable population data for remoteness areas was not available.

*Source:* AIHW National Mortality Database.

**Figure 9.1: Suicide rates, by remoteness area of residence, Australia, 2001–02 to 2010–11**

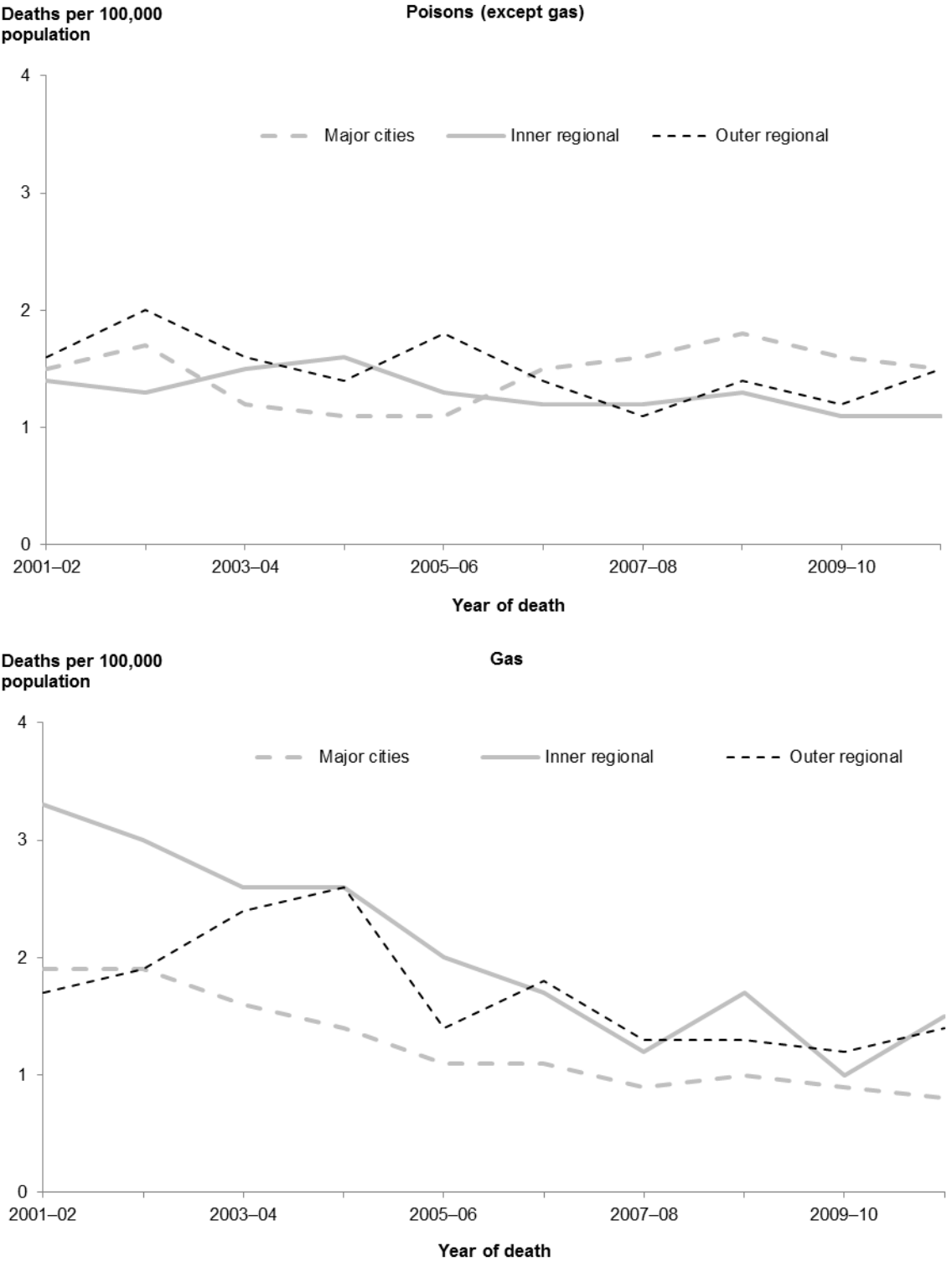



*Notes*

1. Rates for firearm discharges for the *Very remote* region and the *Remote* region for 2006–07 are not shown due to small case numbers.
2. Rates not shown prior to 2001–02 since comparable population data for remoteness areas was not available.

*Source:* AIHW National Mortality Database.

**Figure 9.2: Suicide rates for deaths due to hanging and firearm discharges, by remoteness area of residence, Australia, 2001–02 to 2010–11**




*Notes*

1. Rates for the *Remote* and *Very remote* regions are not shown due to small cases numbers.
2. Rates not shown prior to 2001–02 since comparable population data for remoteness areas was not available.

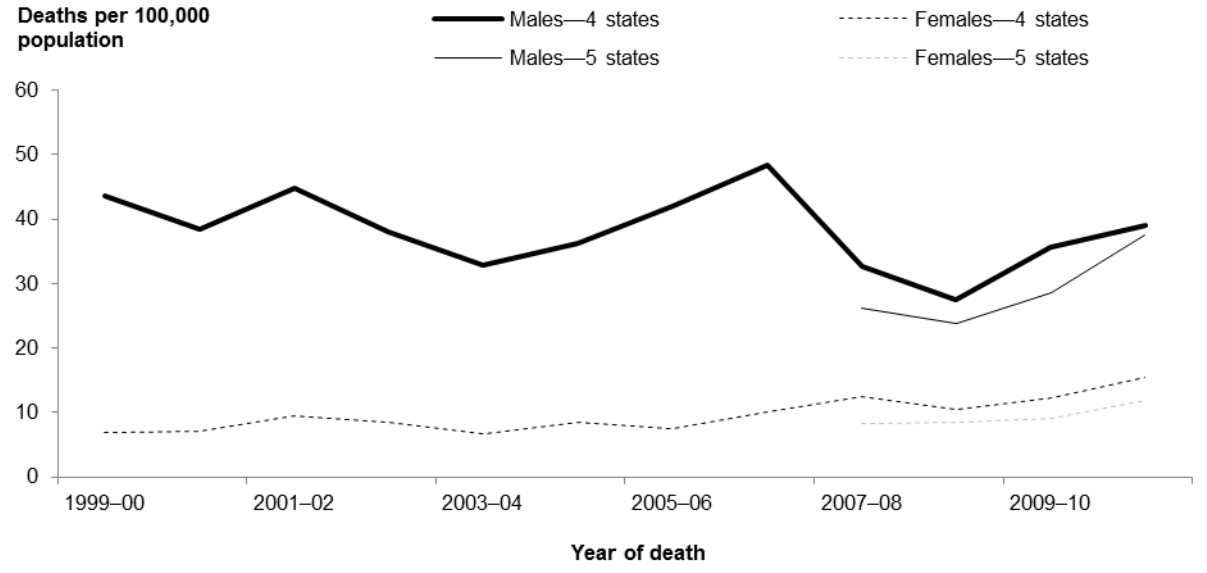
*Source:* AIHW National Mortality Database.

**Figure 9.3: Suicide rates for deaths due to exposure to poisons (except gas) and poisoning by exposure to gas, by remoteness area of residence, Australia, 2001–02 to 2010–11**

# 10 Suicide of Indigenous Australians

Data limitations restrict the period and jurisdictions for which trends in suicide rates can be presented for Indigenous Australians. Data are presented here for 4 jurisdictions from 1999–00 and 5 jurisdictions from 2007–08.

Despite fluctuations, there was a weak, although not statistically significant, downward trend in suicide rates for Indigenous males over the period from 1999–00 to 2010–11 (Figure 10.1). There was less fluctuation in rates for Indigenous females, which steadily increased, although not significantly, over this period. Rates based on data from 5 jurisdictions (including data from New South Wales) were lower than rates based on data from 4 jurisdictions for the period from 2007–08 to 2010–11.

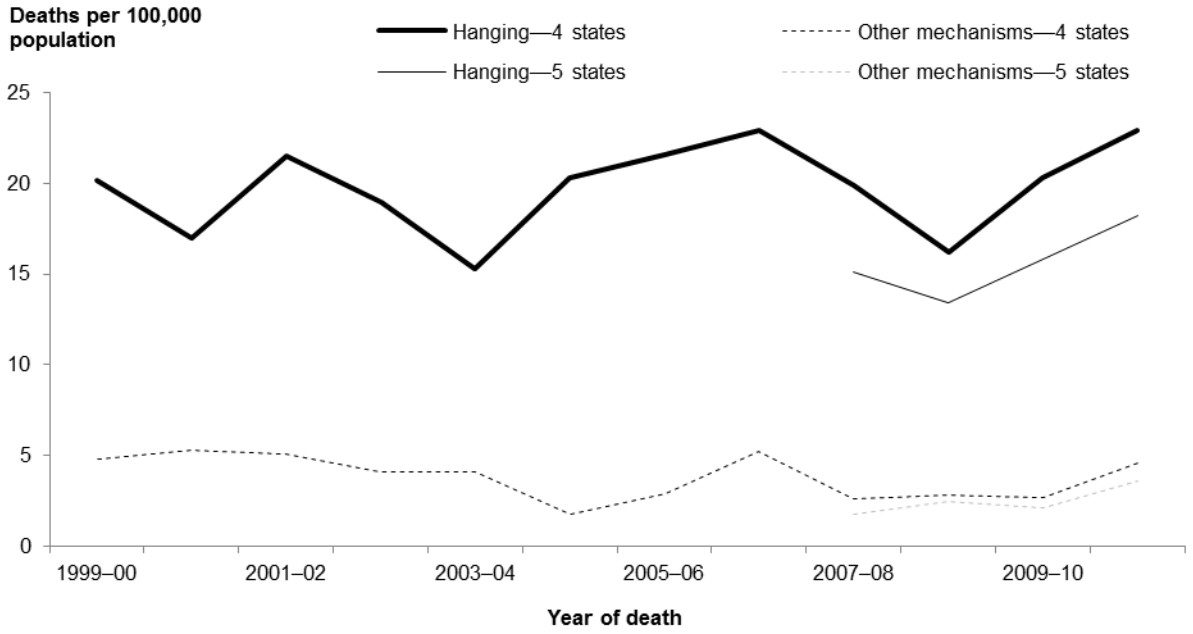



*Note:* Four-state data are for residents of Queensland, Western Australia, South Australia and the Northern Territory. Five-state data are for residents of these 4 states plus residents of New South Wales.

*Source:* AIHW National Mortality Database.

**Figure 10.1: Suicide rates for Indigenous Australians, Australia, 1999–00 to 2010–11**

Suicide rates for Indigenous Australians as a result of hanging fluctuated over the period from 1999–00 to 2010–11 (Figure 10.2). Rates for suicide by hanging were consistently 4 or more times as high as rates for all other mechanisms of suicide combined over this period. When rates of suicide by hanging were based on data from all 5 jurisdictions (that is, including New South Wales), they were lower than rates based on the 4 jurisdictional data alone for the period from 2007–08 to 2010–11.

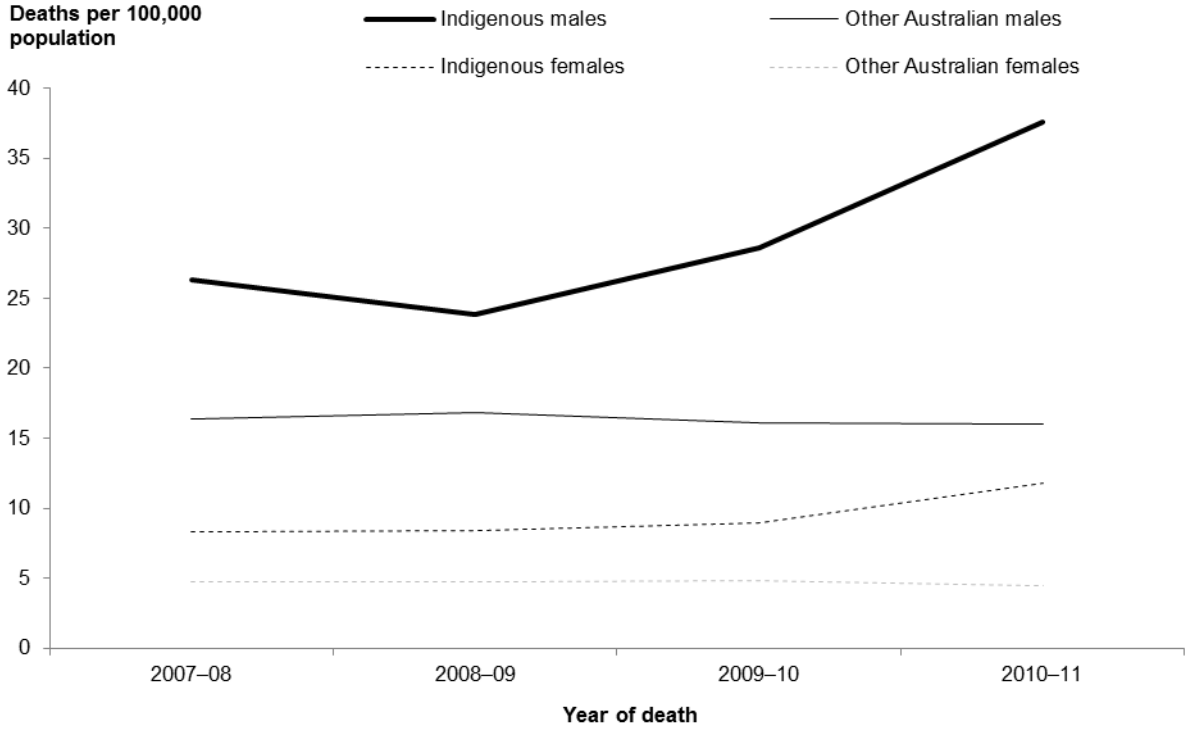



*Note:* Four-state data are for residents of Queensland, Western Australia, South Australia and the Northern Territory. Five-state data are for residents of these 4 states plus residents of New South Wales.

*Source:* AIHW National Mortality Database.

**Figure 10.2: Suicide rates for Indigenous Australians, for hanging and all other mechanisms, Australia, 1999–00 to 2010–11**

In New South Wales, Queensland, Western Australia, South Australia, Northern Territory, for the period from 2007–08 to 2010–11, suicide rates for Indigenous males and females were around 2 times as high as the corresponding rates for *Other Australian* males and females across these jurisdictions (Figure 10.3). Suicide rates for Indigenous males increased between 2008–09 and 2010–11, while rates for the Indigenous females, and non-Indigenous males and females were relatively stable over this period.




*Note:* Data are for New South Wales, Western Australia, South Australia, Northern Territory and Queensland.

*Source:* AIHW National Mortality Database.

**Figure 10.3: Suicide rates for Indigenous Australians and Other Australians, by sex, Australia, 2007–08 to 2010–11**

For the Australian population as a whole, suicide rates tend to rise with the remoteness of place of residence and were about twice as high for residents of *Very remote* areas as for residents of *Major cities* in 2010–11 (Figure 2.6). Aboriginal and Torres Strait Islander people comprise a much larger proportion of the population in *Remote* (16.5%) and *Very remote* (45.8%) areas than in *Major cities* (1.5%) or *Inner Regional* areas (3.6%) (ABS 2013a).

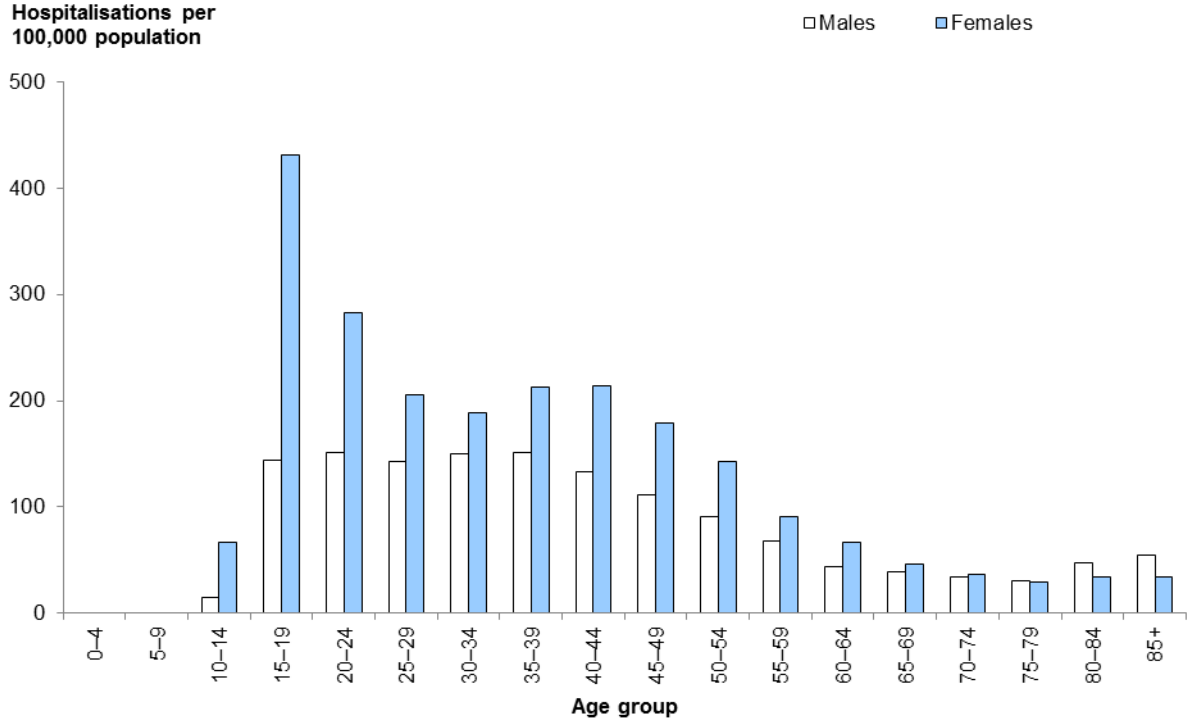
Calculation of suicide rates for Indigenous Australians by remoteness of place of residence is complicated by evidence that while indigenous identification in cause of death data is high for residents of *Remote* and *Very remote* zones it is considerably lower for residents of major cities and regional areas ABS (2013b).

# 11 Hospitalised intentional self-harm: 2010–11

This chapter presents information on people hospitalised in 2010–11 due to intentional self-harm. Note that this includes cases with suicidal intent and intentional self-harm without suicidal intent, but available data do not allow these types of case to be distinguished. For example, some individuals may cut themselves repeatedly as a means of coping with psychological distress but without an intention of suicide.

## 11.1 Age and sex distribution

In contrast to suicide deaths, where male rates were generally markedly higher than female rates, females recorded higher age-adjusted rates of hospitalisation due to intentional self-harm than males across all age groups from those aged 10–14 to those aged 60–64 (Figure 11.1). Female rates were highest for those aged 15–19, while for males, rates were similar for those from ages 15–19 years to 35–39.



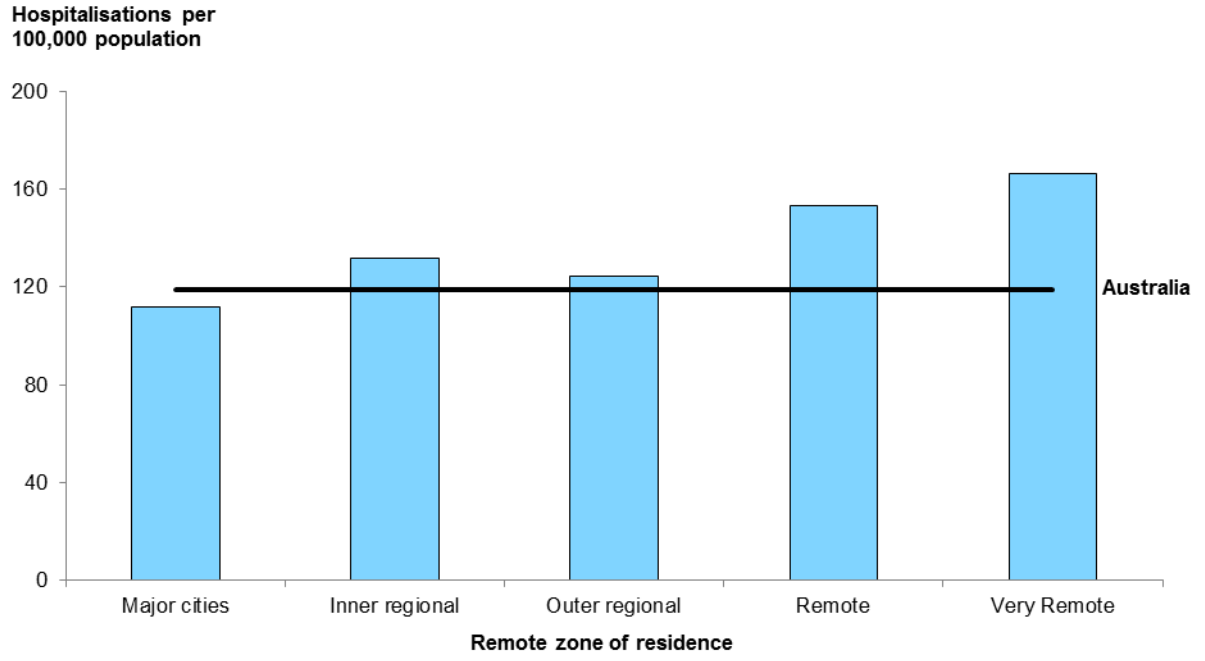

*Note:* Rates for ages 0–4 and 5–9 not reported.

*Source:* AIHW National Morbidity Database.

**Figure 11.1: Age-specific rates of hospitalisation as a result of intentional self-harm, by sex, Australia, 2010–11**

## 11.2 Remoteness of residence

Age-adjusted rates for hospitalisations due to intentional self-harm tended to increase with the degree of remoteness of the person's place of residence (Figure 11.2). Residents of *Major cities* recorded a rate lower than the national rate of 118.8 cases per 100,000 population, while residents for all other remoteness zones recorded rates above the national rate. The rate for residents of the *Very remote* zone (166.2 hospitalisations per 100,000 population) was almost 1.5 times the rate for residents of the *Major cities* zone (111.6 hospitalisations per 100,000 population).

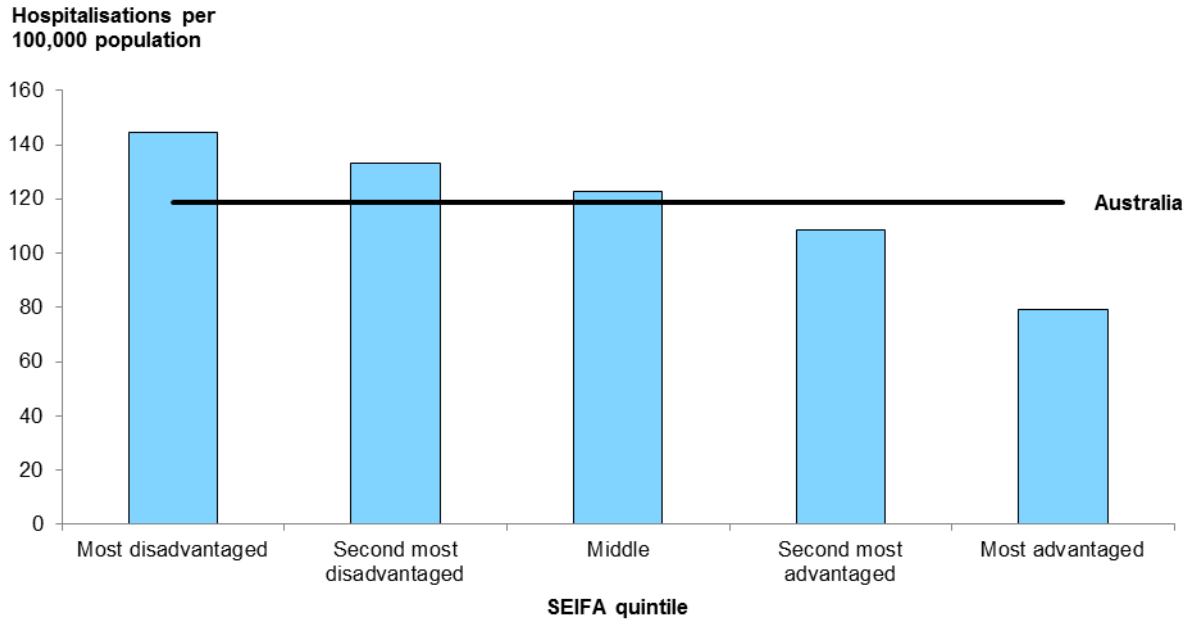



*Source:* AIHW National Morbidity Database.

**Figure 11.2: Rates of hospitalisation as a result of intentional self-harm, by remoteness area of residence, Australia, 2010–11**

## 11.3 Socioeconomic status

Age-adjusted rates for hospitalisations due to intentional self-harm decreased as the level of socio-economic disadvantage lessened (Figure 11.3). The rate for the *Most disadvantaged* quintile (144.5 hospitalisations per 100,000 population) was more than 80% higher than the rate for the *Most advantaged* quintile.




*Source:* AIHW National Morbidity Database.

**Figure 11.3: Rates of hospitalisation as a result of intentional self-harm, by SEIFA quintile, Australia, 2010–11**

# 11.4 Mechanism

Exposure to poisons other than gas accounted for more than 80% (21,016) of hospitalisations resulting from intentional self-harm in 2010–11 (Table 11.1). This mechanism of injury was responsible for over 85% (13,892) of all female hospitalisations and nearly three-quarters (73%, or 7,124) of all male hospitalisations during this period. Injuries due to contact with sharp objects were also numerous, accounting for 13% of hospitalisations resulting from intentional self-harm.

**Table 11.1: Counts of hospitalisation as a result of intentional self-harm, by mechanism of injury, by sex, Australia, 2010–11**

| Mechanism of injury | Males | % | Females | % | Persons | % |
|---|---|---|---|---|---|---|
| Hanging | 404 | 4.1 | 177 | 1.1 | 581 | 2.2 |
| Firearms | 23 | 0.2 | 6 | 0.0 | 29 | 0.1 |
| Poisons (excluding gas) | 7,124 | 73.1 | 13,892 | 85.2 | 21,016 | 80.6 |
| Gas[(a)] | 231 | 2.4 | 83 | 0.5 | 314 | 1.2 |
| Drowning | 12 | 0.1 | 15 | 0.1 | 27 | 0.1 |
| Smoke, fire, hot objects | 62 | 0.6 | 58 | 0.4 | 120 | 0.5 |
| Sharp objects | 1,577 | 16.2 | 1,811 | 11.1 | 3,388 | 13.0 |
| Blunt objects | 38 | 0.4 | 16 | 0.1 | 54 | 0.2 |
| Jumping from high place | 56 | 0.6 | 70 | 0.4 | 126 | 0.5 |
| Jumping or lying before moving object | 23 | 0.2 | 13 | 0.1 | 36 | 0.1 |
| Crashing of motor vehicle | 51 | 0.5 | 31 | 0.2 | 82 | 0.3 |
| Other specified | 98 | 1.0 | 82 | 0.5 | 180 | 0.7 |
| Unspecified | 49 | 0.5 | 60 | 0.4 | 109 | 0.4 |
| **Total** | **9,748** | **100** | **16,314** | **100** | **26,062** | **100** |

(a) Hospitalisations due to poisoning by exposure to gas predominantly involve carbon monoxide.

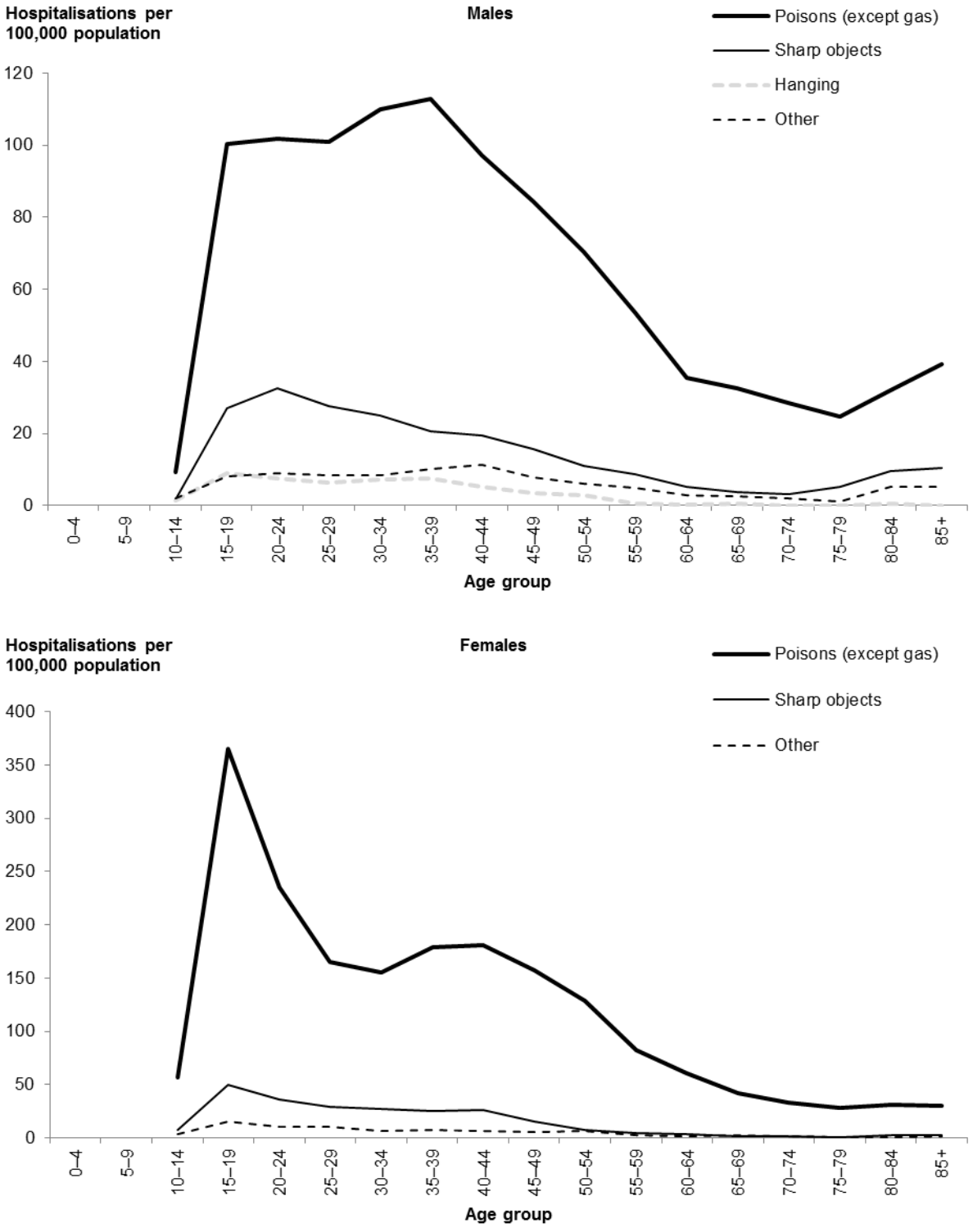
*Source:* AIHW National Morbidity Database.

Age-specific rates differed greatly between males and females for some mechanisms of intentional self-harm (Figure 11.4).

Rates for males by exposure to poisons other than gases were highest for those from 15–19 to 35–39 years of age, while females had a much higher and sharper peak at 15–19 years, following a pattern more similar to that of males in older age groups.

Rates of hospitalised intentional self-harm by cutting were highest at young ages for both sexes, peaking at 20–24 for males and 15–19 for females.

Hospitalised intentional self-harm by hanging was less frequent in both sexes, age-specific case numbers being too low to chart for females.




*Note:* Rates for ages 0–4 and 5–9 not reported.

*Source:* AIHW National Morbidity Database.

**Figure 11.4: Age-specific male and female rates of hospitalisation as a result of intentional self-harm, by mechanisms of injury, Australia, 2010–11**

## Lethality

The lethality of a mechanism of suicide can be estimated by dividing the number of deaths in mortality data by the sum of that plus hospitalised cases that did not end with the death of the patient (Elnour & Harrison 2008; Spittal et al. 2012).

Hanging and firearms were the 2 most lethal mechanisms of injury in relation to intentional self-harm in 2010–11 (Table 11.2). Over 88% of instances involving intentional self-harm by firearms resulted in death, while the corresponding figure for hanging was over 70%. Mechanisms such as exposure to poisons other than gases, and contact with sharp objects, which accounted for the vast majority of hospitalisations due to intentional self-harm, had very low lethality, as death occurred in around 2% or less of instances where these mechanisms were used.

**Table 11.2: Lethality of intentional self-harm injury, by mechanism of injury, Australia, 2010–11**

| Mechanism of injury | Non- fatal hospitalisations | Deaths | Lethality[(a)] |
|---|---|---|---|
| Hanging | 517 | 1,231 | 70.4 |
| Firearms | 20 | 154 | 88.5 |
| Poisons (except gas) | 20,934 | 317 | 1.5 |
| Gas[(b)] | 312 | 218 | 41.1 |
| Drowning | 26 | 47 | 64.4 |
| Smoke, fire, hot objects | 119 | 18 | 13.1 |
| Sharp objects | 3,383 | 72 | 2.1 |
| Jumping from high place | 118 | 122 | 50.8 |
| Jumping or lying before moving object | 35 | 69 | 66.3 |
| Crashing of motor vehicle | 82 | 22 | 21.2 |
| Other specified | 233 | 11 | 4.5 |
| Unspecified | 108 | 1 | 0.9 |
| **Total** | **25,887** | **2,282** | **8.1** |

(a) Lethality = deaths/(deaths + non-fatal hospitalisations) multiplied by 100.

(b) Hospitalisations due to poisoning by exposure to gas predominantly involve carbon monoxide.

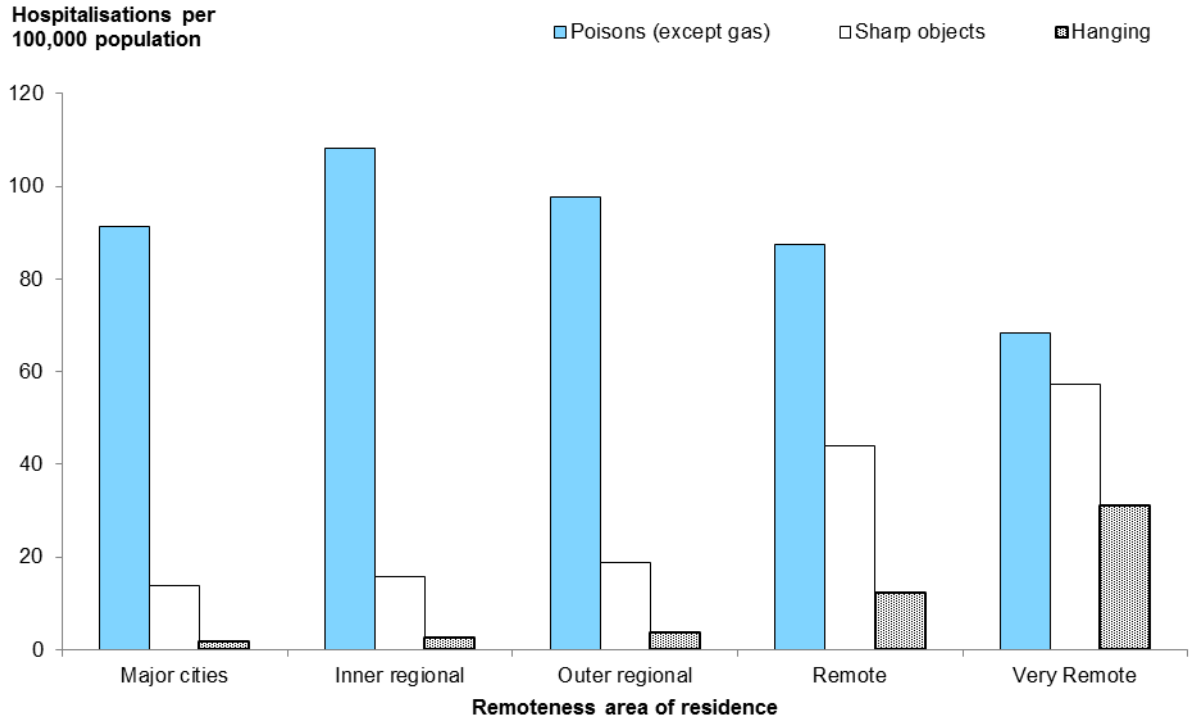
*Source:* AIHW National Mortality Database and AIHW National Morbidity Database.

## Remoteness area of residence

Age-adjusted rates for hospitalisations due to intentional self-harm due to exposure to poisons other than gas tended to decrease with the degree of remoteness of the person's place of residence, although the rate for residents of *Major cities* was lower than that for residents of *Inner regional* and *Outer regional* zones (Figure 11.5).

In contrast, rates for hospitalisations due to intentional self-harm as a result of contact with sharp objects or as a result of hanging increased with the remoteness of the person's place of residence. In relation to sharp objects, the rate of hospitalisation for residents of the *Very remote* zone (57.2 hospitalisations per 100,000 population) was more than 4 times the rate for residents of the *Major cities* zone, while for hanging, the rate for residents of the *Very remote*

zone (31.2 hospitalisations per 100,000 population) was around 16 times the rate for residents of the *Major cities* zone.

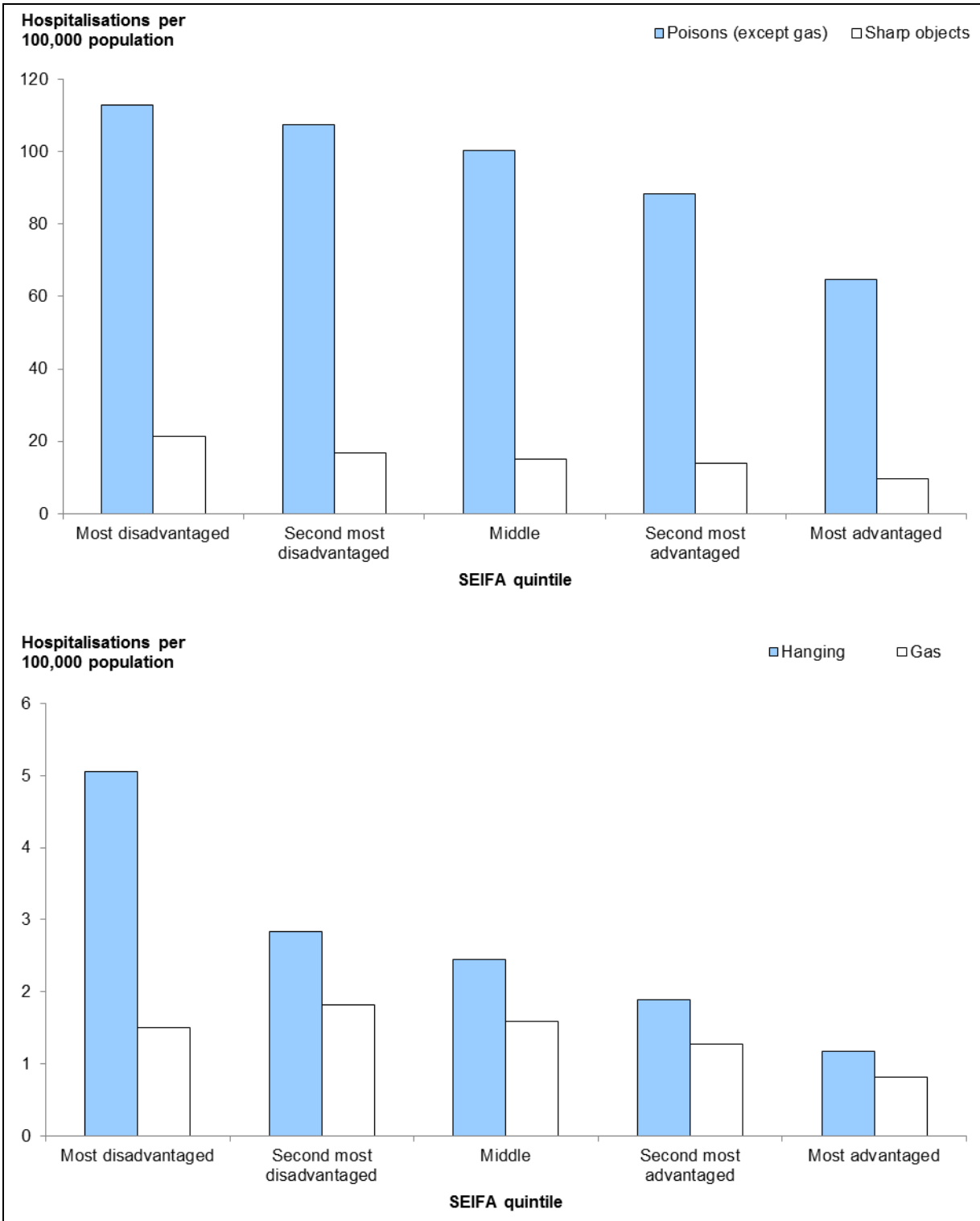



*Source:* AIHW National Morbidity Database.

**Figure 11.5: Rates of hospitalisation as a result of intentional self-harm due to exposure to poisons (except gas), to contact with sharp objects, and to hanging, by remoteness of residence, Australia, 2010–11**

## Socioeconomic status

Age-adjusted rates for hospitalisations due to intentional self-harm generally decreased as the level of socio-economic disadvantage lessened, regardless of the mechanism of injury (Figure 11.6). For all mechanisms of injury, except for hanging, the rate of hospitalisation for the 20% of residents living in the *Most disadvantaged* quintile was approximately twice that of the 20% of residents living in the *Most advantaged* quintile. For hanging, the rate for the 20% of residents living in the *Most disadvantaged* quintile was more than four times as high as that for the 20% of residents living in the *Most advantaged* quintile.




*Note:* Hospitalisations due to poisoning by exposure to gas predominantly involve carbon monoxide.

*Source:* AIHW National Morbidity Database.

**Figure 11.6: Rates of hospitalisation as a result of intentional self-harm due to exposure to poisons (except gas) and to contact with sharp object , to hanging and to exposure to gas, by SEIFA quintile, Australia, 2010–11**

## Poisons (except gas)

Almost 35% of persons hospitalised as a result of intentional self-harm involving poisoning by exposure to drugs, medicaments and biological agents had taken benzodiazepines (Table 11.3). Corresponding figures for paracetamol and antidepressants were 29% and 25% respectively. For those who had taken substances which were chiefly non-medicinal, more than 87% had consumed alcohol.

**Table 11.3: Hospitalisations as a result of intentional self-harm due to exposure to poisons (except gas), by poisoning agent, Australia, 2010–11**

| Poisoning agent | Count | % |
|---|---|---|
| **Drugs, medicaments and biological agents** | **20,499** | **97.5** |
| Psychotropic drugs, nec | 8,872 | 43.3 |
| *Antidepressants* | *5,216* | *25.4* |
| Antiepileptic, sedative-hypnotic and antiparkinsonism drugs | 8,523 | 41.6 |
| *Benzodiazepines* | *7,158* | *34.9* |
| Nonopioid analgesics, antipyretics and antirheumatics | 7,042 | 34.4 |
| *Paracetamol* | *5,915* | *28.9* |
| Narcotics and psychodysleptics [hallucinogens] | 3,764 | 18.4 |
| *Other opioids (Codeine, Morphine)* | *2,849* | *13.9* |
| Primarily systemic and haematological agents | 1,243 | 6.1 |
| Drugs primarily affecting the cardiovascular system | 783 | 3.8 |
| Drugs primarily affecting the autonomic nervous system | 671 | 3.3 |
| Hormones and their synthetic substitutes and antagonists, nec | 612 | 3.0 |
| Systemic antibiotics | 344 | 1.7 |
| Drugs primarily affecting the gastrointestinal system | 292 | 1.4 |
| Other and unspecified drugs, medicaments and biological substances | 1,034 | 5.0 |
| **Substances chiefly non-medicinal as to source** | **5,153** | **24.5** |
| Alcohol | 4,511 | 87.5 |
| Pesticides | 171 | 3.3 |
| Corrosive substances | 155 | 3.0 |
| Metals | 151 | 2.9 |
| Organic solvents | 110 | 2.1 |
| Other and unspecified substances | 221 | 4.3 |
| **Total number of hospitalisations involving poisons other than gases**[(a)] | **21,016** | |

(a) The total of the values shown in this table for the categories of poisoning agents exceeds the total number of hospitalisations because some cases have been exposed to more than 1 poisoning agent. The first encountered external cause in the hospital record is used to determine if the hospitalisation was due to poisoning by exposure to a toxic substance, while diagnosis codes are used to determine the type of poisoning agent.

*Source:* AIHW National Morbidity Database.

## Gaseous substances

Of those hospitalised due to intentional self-harm as a result of poisoning by exposure to gaseous substances, just over 80% (252) were exposed to some form of gas that was toxic because it contained carbon monoxide (Table 11.4). Most of these (198) were exposed to motor vehicle exhaust.

**Table 11.4: Hospitalisations as a result of self-harm due to poisoning, by exposure to gaseous substances, by poisoning agent, Australia, 2010–11**

| Poisoning agent | Count | % |
|---|---|---|
| Carbon monoxide[(a)] | 252 | 80.3 |
| *Motor vehicle exhaust* | *198* | *63.1* |
| Liquefied petroleum gas (LPG) | 21 | 6.7 |
| Other specified utility gas | 6 | 1.9 |
| Other specified gas or vapours | 15 | 4.8 |
| Unspecified gas or vapours | 20 | 6.4 |
| **Total** | **314** | **100** |

(a) These are cases with the first encountered external cause code in the hospital record indicating intentional self-poisoning by exposure to gas and any diagnosis code indicating toxic effect of carbon monoxide.

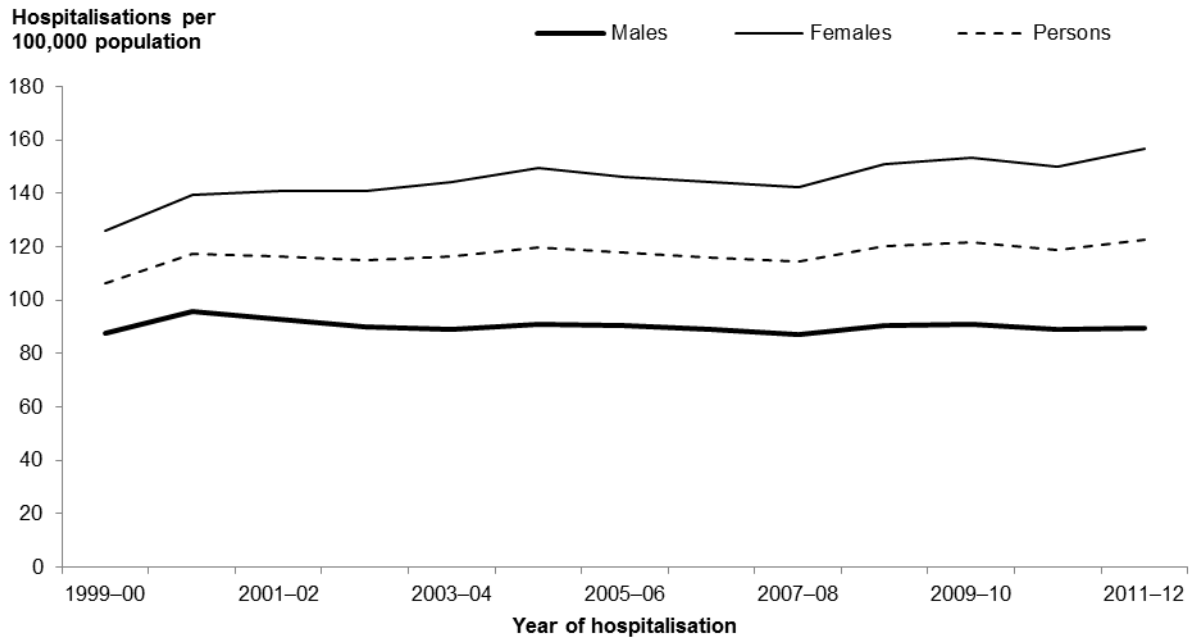
*Source:* AIHW National Morbidity Database.

# 12 Hospitalised self-harm trends: 1999–00 to 2011–12

Trends are presented here for hospitalised cases of intentional self-harm in the period during which the tenth revision of the ICD has been used to code data on hospital cases throughout Australia, which began in 1999–00.

## 12.1 All mechanisms

Age-adjusted rates for females hospitalised as a result of intentional self-harm were at least 40% higher than male rates over the period from 1999–00 to 2011–12 (Figure 12.1). Rates for males and females over the period from 2000–01 to 2011–12 were relatively steady, although the difference between them increased marginally.



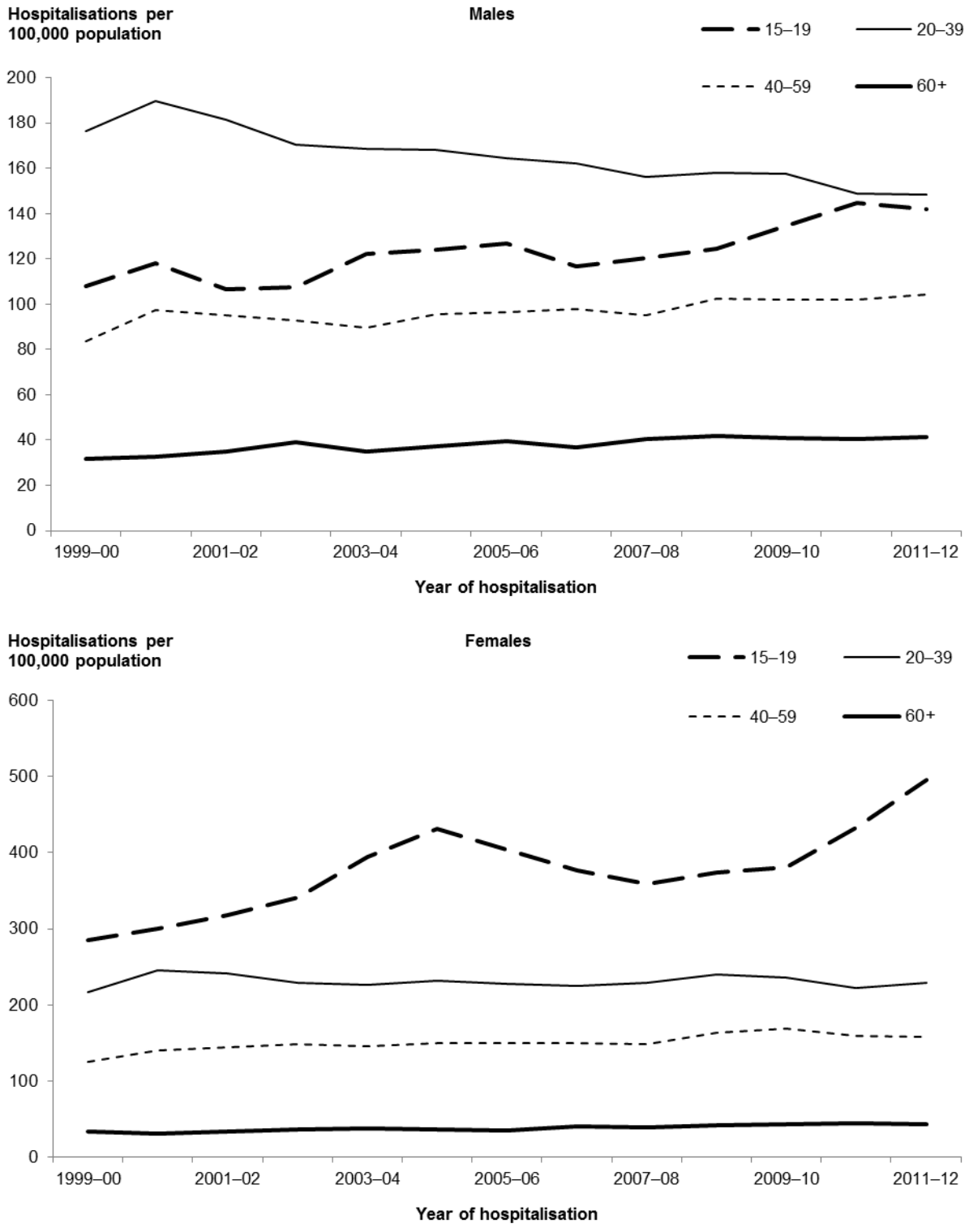

*Note:* A table corresponding to this figure, Table A4.7, can be found in Appendix 4.

*Source:* AIHW National Morbidity Database.

**Figure 12.1: Rates of hospitalisation as a result of intentional self-harm, Australia, 1999–00 to 2011–12**

### Age group and sex

Rates for males and females hospitalised due to intentional self-harm over the period from 1999–00 to 2011–12 were highest in the younger age groups and rose most over time in those aged 15–19 (Figure 12.2). Rates for males aged 20–39 were consistently 4 to 5 times higher than rates for males aged 60 and over, while rates for females aged 15–19 were consistently 9 to 10 times higher than rates for females aged 60 and over during this period. Over these years there was a distinct upward trend in rates for males and females aged 15–19, while rates for other age groups were relatively flat, apart from males aged 20–39, for whom there was a downward trend.




*Source:* AIHW National Morbidity Database.

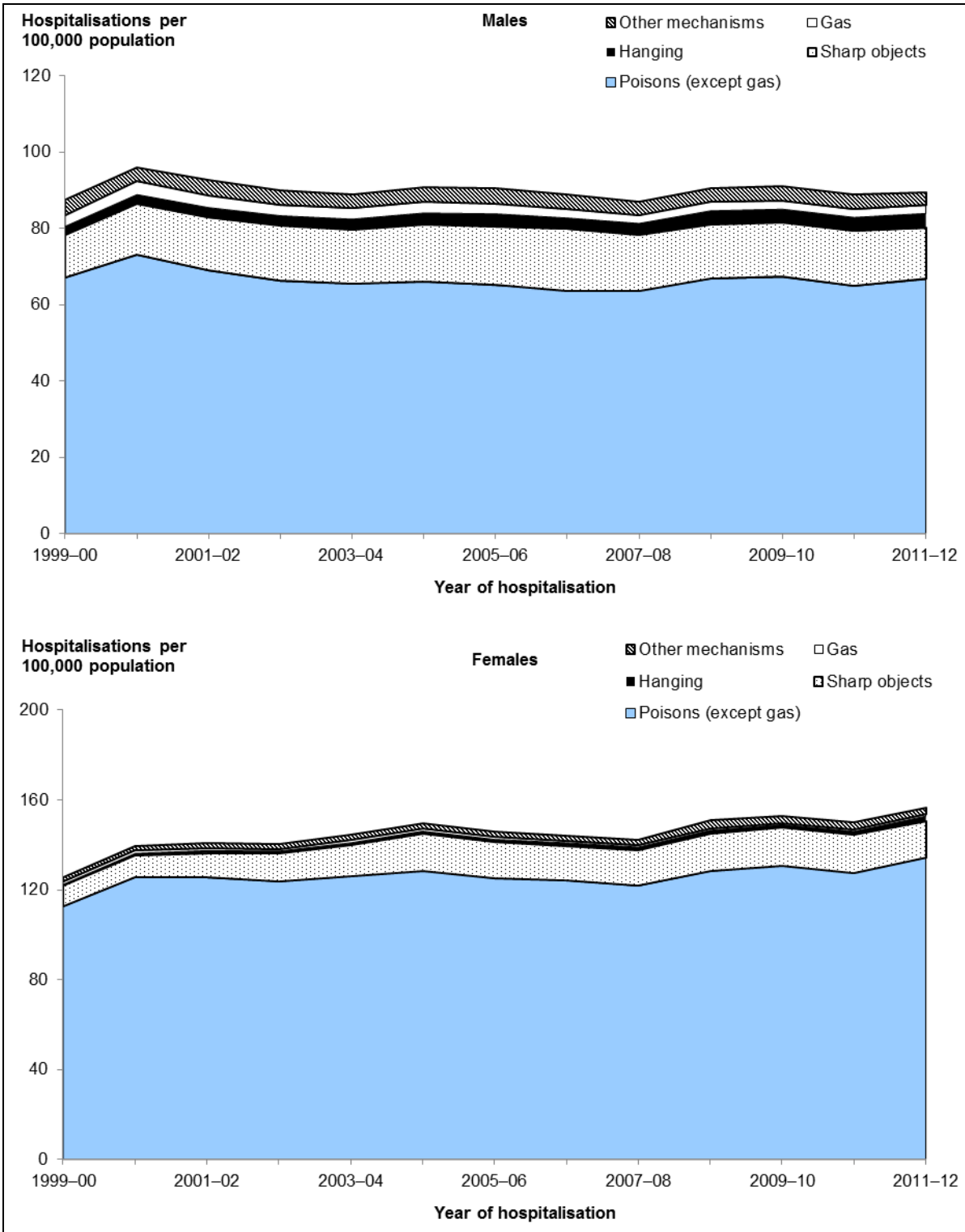
**Figure 12.2: Male and female rates of hospitalisation as a result of intentional self-harm, by selected age groups, Australia, 1999–00 to 2011–12**

Rates for males hospitalised due to intentional self-harm remained relatively steady over the period from 1999–00 to 2011–12, regardless of the mechanism of injury (Figure 12.3). Rates for males hospitalised due to exposure to poisons other than gases were consistently a little above 60 cases per 100,000 population, while rates for males hospitalised as a result of contact with sharp objects ranged between 11 to 15 cases per 100,000 population.

Rates for females hospitalised due to intentional self-harm showed some increase in rates of self-harm by poisoning early in the charted period, and in self-harm by contact with sharp objects later in the period (Figure 12.3).

Male and female rates for hospitalisations due to intentional self-harm by hanging rose over this period, but still remained a very small percentage of all hospitalisations due to intentional self-harm.

Poisoning (excluding gases) accounted for almost 82% of all hospitalisations due to intentional self-harm over this period. Contact with sharp objects and hanging accounted for a further 12% and 2% respectively.




*Note:* Hospitalisations due to poisoning by exposure to gas predominantly involve carbon monoxide

*Source:* AIHW National Morbidity Database.

**Figure 12.3: Male and female rates of hospitalisation as a result of intentional self-harm, by mechanisms of injury, Australia, 1999–00 to 2011–12**

## Mean length of stay

Persons hospitalised due to intentional self-harm as a result of jumping from a high place experienced the longest mean length of stay (MLOS), 22 days, of all tabulated mechanisms of injury (Table 12.1). Relatively long MLOS were also seen for intentional self-harm cases resulting from exposure to thermal causes (smoke, fire and flames, hot substances and hot objects); contact with explosive material; and jumping or lying before moving objects. Cases due to the 2 most common mechanisms of intentional self-harm leading to hospitalisation, exposure to poisons other than gases and contact with sharp objects, had relatively short MLOS, 2.7 days and 2.9 days respectively.

**Table 12.1: Mean length of stay (MLOS) for hospitalisation as a result of intentional self-harm, by mechanism of injury, Australia, 1999–00 to 2011–12**

| Mechanism of injury | Total days spent in hospital by the cases | Number of cases | MLOS |
|---|---|---|---|
| Hanging | 24,768 | 5,948 | 4.2 |
| Firearms | 5,773 | 537 | 10.8 |
| Poisons (except gas) | 692,075 | 254,447 | 2.7 |
| Gas | 15,192 | 4,705 | 3.2 |
| Drowning | 1,021 | 254 | 4.0 |
| Explosives | 345 | 22 | 15.7 |
| Smoke, fire, hot objects | 21,291 | 1,150 | 18.5 |
| Sharp objects | 109,475 | 37,674 | 2.9 |
| Blunt objects | 1,501 | 597 | 2.5 |
| Jumping from a high place | 31,123 | 1,417 | 22.0 |
| Jumping or lying before moving objects | 8,481 | 549 | 15.4 |
| Crashing of motor vehicle | 6,529 | 754 | 8.7 |
| Other specified | 11,368 | 2,106 | 5.4 |
| Unspecified | 2,642 | 981 | 2.7 |
| **Total** | **931,584** | **311,141** | **3.0** |

*Source:* AIHW National Morbidity Database.

## Lethality

Hanging and firearm discharges were consistently the 2 most lethal mechanisms of injury due to intentional self-harm over the period from 1999–00 to 2010–11 (Table 12.2). On average, over 86% of instances involving intentional self-harm by firearm discharge resulted in death, and the corresponding figure for hanging was over 71%. Exposure to poisons other than gases, and contact with sharp objects, which accounted for the vast majority of hospitalisations due to intentional self-harm, had relatively low lethality: death occurred in around 1.5% of recorded instances where these mechanisms were used.

There was a discernable decrease in lethality over this period for cases involving exposure to toxic gases; drowning; and exposure to smoke, fire and hot objects. There was also a discernable decrease in lethality for hanging, although this result should be treated with caution since the number of deaths and non-fatal hospitalisations for this mechanism both increased over this period. There was no discernable change in lethality over time for other mechanisms.

**Table 12.2: Lethality[(a)] of intentional self-harm injury, by mechanism of injury, Australia, 1999–00 to 2010–11**

| Year of hospitalisation/ death | Hanging | Firearms | Poisons (except gas) | Gas | Carbon monoxide[(b)] | Drowning | Smoke, fire, hot objects | Sharp objects | Jump from high place | Jumping, lying before moving object | Crashing of MV | All mechanisms |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999–00 | 79.7 | 88.1 | 1.8 | 60.2 | 63.6 | 81.1 | 27.1 | 2.5 | 46.7 | 67.3 | 30.9 | 11.1 |
| 2000–01 | 78.5 | 89.7 | 1.7 | 54.1 | 57.8 | 74.6 | 31.4 | 1.5 | 44.7 | 63.8 | 26.2 | 9.7 |
| 2001–02 | 75.5 | 85.4 | 1.5 | 50.8 | 55.5 | 72.7 | 33.7 | 2.3 | 53.6 | 63.9 | 12.7 | 9.6 |
| 2002–03 | 74.8 | 88.9 | 1.7 | 54.7 | 58.2 | 81.6 | 22.9 | 1.9 | 46.3 | 70.5 | 17.9 | 9.3 |
| 2003–04 | 74.2 | 83.6 | 1.4 | 49.2 | 53.6 | 80.0 | 31.0 | 2.0 | 56.5 | 70.3 | 18.2 | 8.8 |
| 2004–05 | 71.0 | 78.2 | 1.3 | 48.1 | 53.8 | 66.7 | 26.7 | 1.5 | 50.8 | 50.0 | 8.5 | 7.9 |
| 2005–06 | 71.2 | 88.9 | 1.3 | 41.3 | 45.5 | 70.5 | 14.8 | 1.3 | 46.8 | 62.1 | 19.7 | 8.2 |
| 2006–07 | 74.2 | 85.4 | 1.5 | 46.3 | 51.9 | 72.9 | 24.7 | 1.4 | 47.5 | 64.9 | 16.9 | 8.6 |
| 2007–08 | 72.9 | 93.5 | 1.6 | 42.4 | 47.2 | 66.1 | 26.4 | 1.6 | 48.2 | 60.2 | 18.5 | 8.6 |
| 2008–09 | 69.9 | 89.8 | 1.7 | 42.5 | 46.9 | 75.0 | 20.7 | 1.9 | 52.4 | 62.1 | 32.3 | 8.5 |
| 2009–10 | 72.7 | 83.0 | 1.5 | 39.6 | 44.3 | 59.2 | 22.7 | 1.7 | 45.9 | 68.3 | 29.5 | 8.1 |
| 2010–11 | 70.4 | 88.5 | 1.5 | 41.1 | 44.4 | 64.4 | 13.1 | 2.1 | 50.8 | 66.3 | 21.2 | 8.1 |
| **Total** | **71.1** | **86.2** | **1.4** | **47.1** | **51.5** | **69.2** | **22.4** | **1.6** | **47.2** | **62.2** | **19.9** | **8.1** |

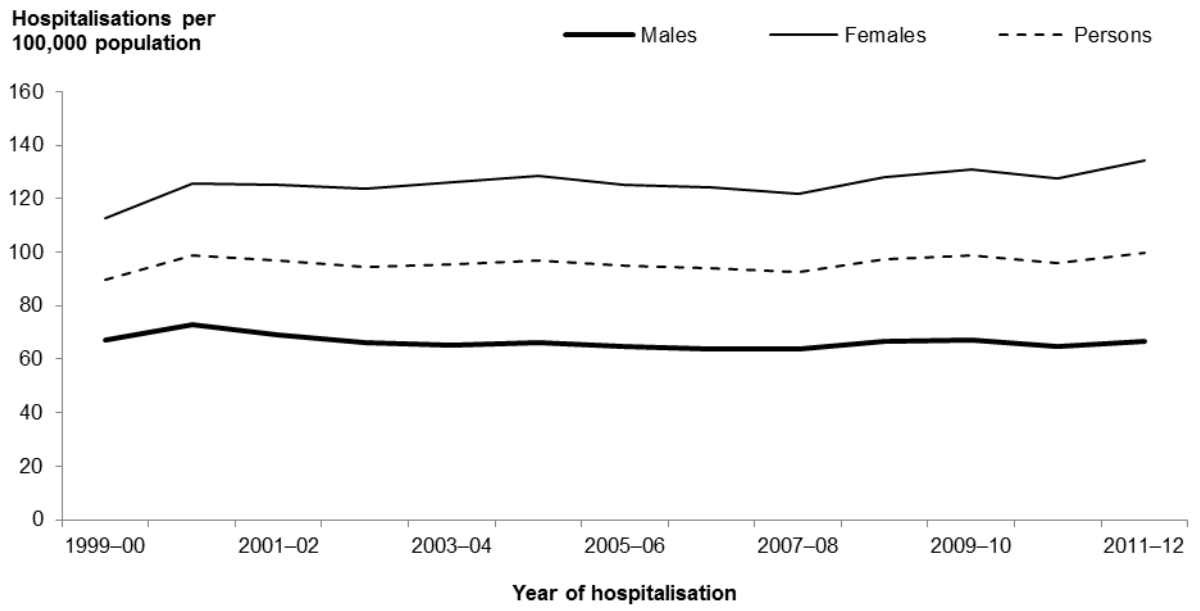
(a) Lethality = deaths/(deaths + non-fatal hospitalisations) multiplied by 100.

(b) These cases are a subset of cases involving poisoning by exposure to gas, where any diagnosis code in the hospital record indicates the toxic effect of carbon monoxide.

*Source:* AIHW National Mortality Database and AIHW National Morbidity Database.

# 12.2 Poisons (except gas)

As for hospitalisations due to all mechanisms of intentional self-harm, age-adjusted rates for females hospitalised as a result of intentional self-harm by poisoning (other than by gas) were at least 40% higher than male rates over the period from 1999–00 to 2011–12 (Figure 12.4). The patterns of rates by age group were almost identical to those for all intentional self-harm hospitalisations (Figure 12.2).



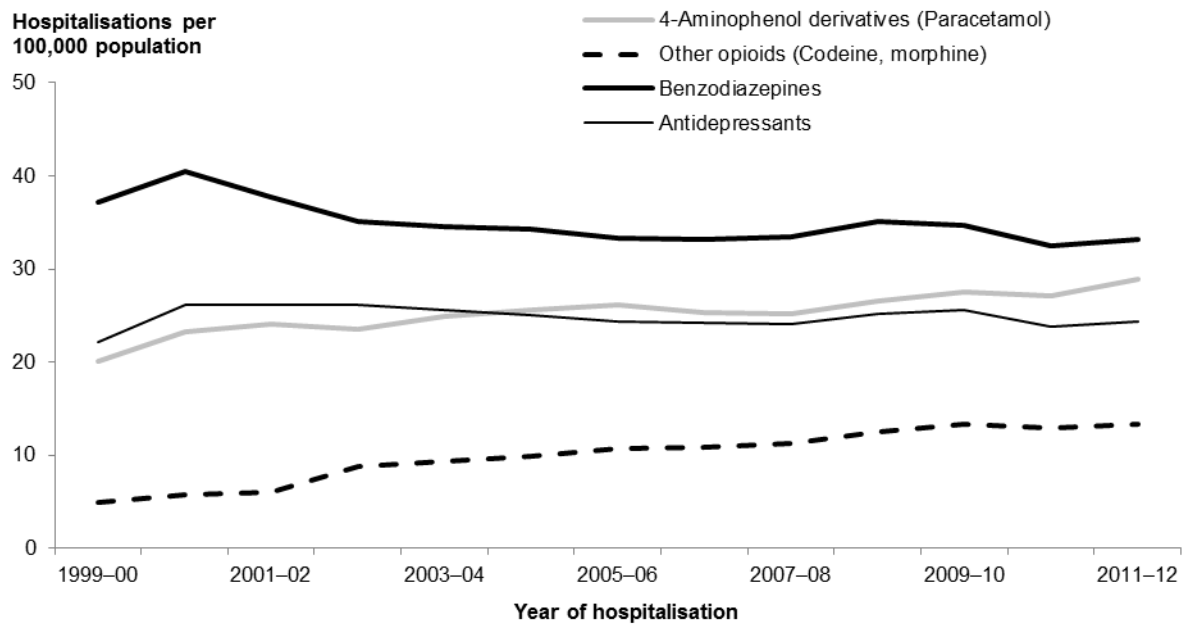

*Note:* A table corresponding to this figure, Table A4.8, can be found in Appendix 4.

*Source:* AIHW National Morbidity Database.

**Figure 12.4: Rates of hospitalisation as a result of intentional self-harm for exposure to poisons (except gas), by sex, Australia, 1999–00 to 2011–12**

## Commonly used drugs

Figure 12.5 shows trends in rates from 1999–00 to 2011–12 for hospitalised self-harm as a result of poisoning by exposure to commonly used medications. There was a slight decrease over time in the rates of those hospitalised after taking benzodiazepines, while there were increases over time in rates for those taking 4-Aminophenol derivatives (paracetamol) and opioids such as codeine or morphine. Any meaningful interpretation of these trends is complicated by the unavailability of information in relation to dosage levels of these drugs in those hospitalised as well as by the effects of the consumption of multiple drug types, including alcohol, within a short period of time.

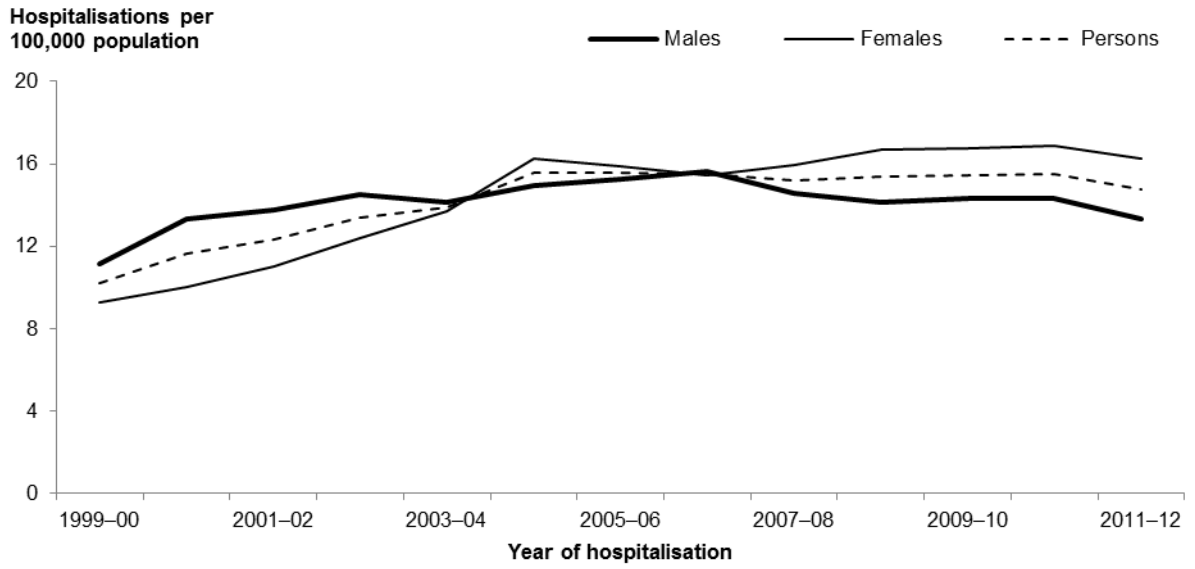



*Source:* AIHW National Morbidity Database.

**Figure 12.5: Rates of hospitalisation as a result of intentional self-harm for poisoning by exposure to commonly used medications, Australia, 1999–00 to 2011–12**

# 12.3 Sharp objects

For the period from 1999–00 to 2011–12, there was an increase over time in rates for females hospitalised due to intentional self-harm as a result of contact with a sharp object, which began the period lower than male rates, but finished the period higher than male rates (Figure 12.6).



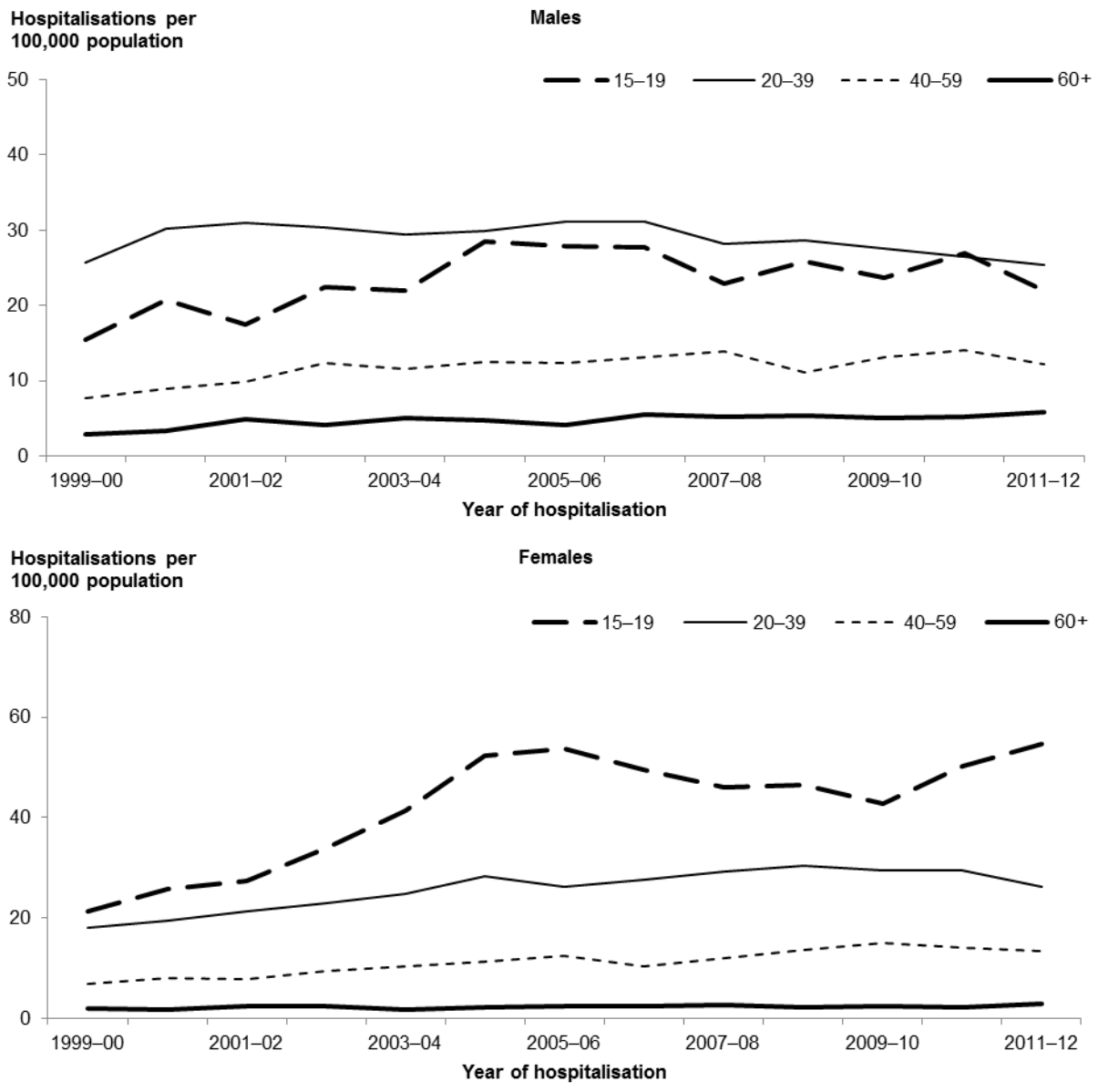

*Note:* A table corresponding to this figure, Table A4.9, can be found in Appendix 4.

*Source:* AIHW National Morbidity Database.

**Figure 12.6: Rates of hospitalisation as a result of intentional self-harm due to contact with a sharp object by sex, Australia, 1999–00 to 2011–12**

## Age group and sex

Over the period from 1999–00 to 2011–12, rates for males and females hospitalised due to intentional self-harm as a result of contact with a sharp object were highest in the younger age groups, as they were for intentional self-harm hospitalisations overall (Figure 12.7). Rates for males aged 20–39 were consistently 4 to 6 times higher than rates for males aged 60 and over, while rates for females aged 15–19 were consistently 10 to 20 times higher than rates for females aged 60 and over during this period. There was a noticeable increase over time in rates for females aged 15–19, while rates for other age groups increased slightly over time or were relatively flat.




*Source:* AIHW National Morbidity Database.

**Figure 12.7: Male and female rates of hospitalisation as a result of intentional self-harm due to contact with sharp objects, by selected age groups, Australia, 1999–00 to 2011–12**

## Bodily location and nature of injury

For the period from 1999–00 to 2010–11, nearly 46% of those hospitalised due to intentional self-harm as a result of contact with sharp objects had injuries to their wrist and hand, and another 32% had injuries to their elbow and forearm (Table 12.3).

**Table 12.3: Bodily location of injury for hospitalisations as a result of intentional self-harm due to contact with sharp objects, Australia, 1999–00 to 2011–12**

| Bodily location of injury | Males | Females | Persons | % |
|---|---|---|---|---|
| Head | 787 | 442 | 1,229 | 3.3 |
| Neck | 1,654 | 998 | 2,652 | 7.0 |
| Thorax | 1,247 | 514 | 1,761 | 4.7 |
| Abdomen, lower back, lumbar spine and pelvis | 2,373 | 1,855 | 4,228 | 11.2 |
| Shoulder & upper arm | 713 | 467 | 1,180 | 3.1 |
| Elbow & forearm | 5,852 | 6,227 | 12,079 | 32.1 |
| Wrist & hand | 8,151 | 9,019 | 17,170 | 45.6 |
| Hip & thigh | 672 | 908 | 1,580 | 4.2 |
| Knee & lower leg | 457 | 748 | 1,205 | 3.2 |
| Ankle & foot | 199 | 237 | 436 | 1.2 |
| Multiple body regions | 174 | 179 | 353 | 0.9 |
| Unspecified parts of trunk, limb or body region | 414 | 544 | 958 | 2.5 |
| Effects of foreign body entering through natural orifice | 185 | 246 | 431 | 1.1 |
| **Total** | **18,707** | **18,967** | **37,674** | |

*Source:* AIHW National Morbidity Database.

In period from 1999–00 to 2011–12, over 91% of those hospitalised due to intentional self-harm as a result sustaining an injury to their wrist or hand from contact with a sharp object, had an open wound injury (Table 12.4). Over 16% had muscle and tendon injuries, while almost 8% had injuries to their nerves.

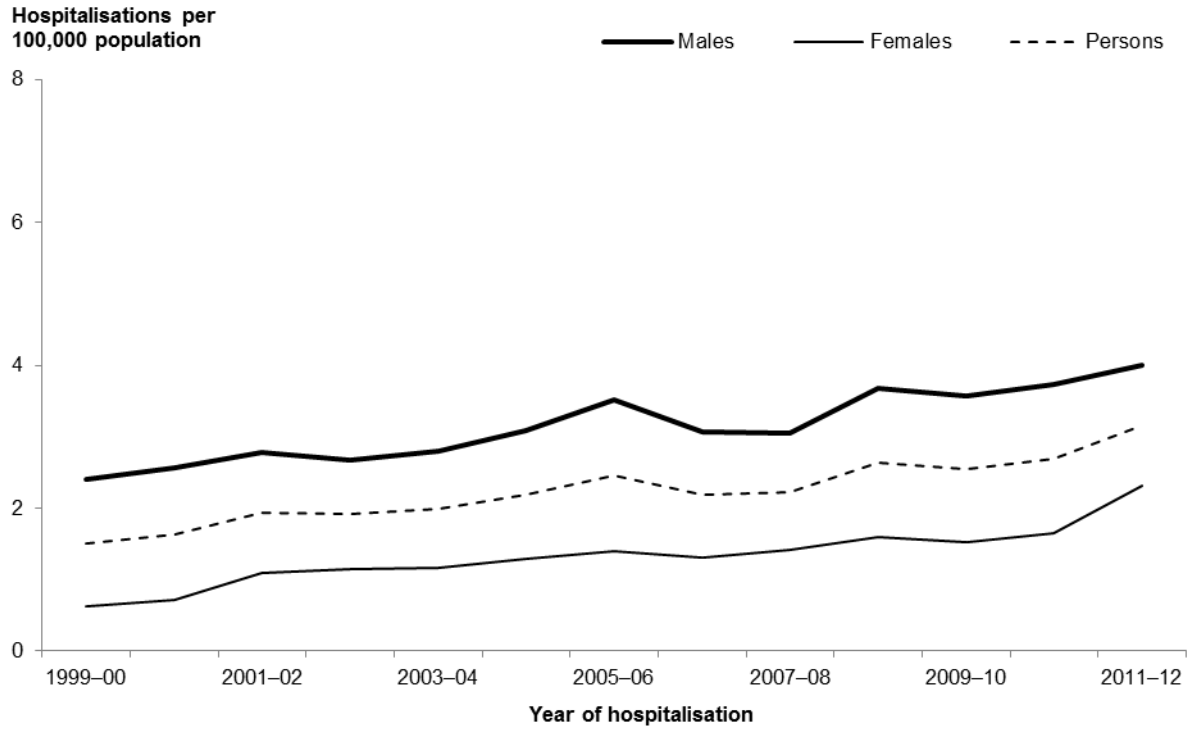
**Table 12.4: Nature of injury to wrist and hand for hospitalisations as a result of intentional self-harm due to contact with sharp objects, Australia, 1999–00 to 2011–12**

| Nature of injury | Count | % |
|---|---|---|
| Superficial | 869 | 5.1 |
| Open wound | 15,592 | 90.8 |
| Fracture | 122 | 0.7 |
| Dislocation, sprain and strain | 25 | 0.1 |
| Nerve | 1,331 | 7.8 |
| Blood vessel | 865 | 5.0 |
| Muscle/tendon | 2,836 | 16.5 |
| Amputation (including partial) | 132 | 0.8 |
| Other and unspecified | 129 | 0.8 |
| **Total** | **17,170** | |

*Source:* AIHW National Morbidity Database.

# 12.4 Hanging

Rates for males hospitalised due to intentional self-harm as a result of hanging were generally 2 to 3 times the rates for females over the period from 1999–00 to 2011–12 (Figure 12.8). There were noticeable increases in rates for both males and females over this period.



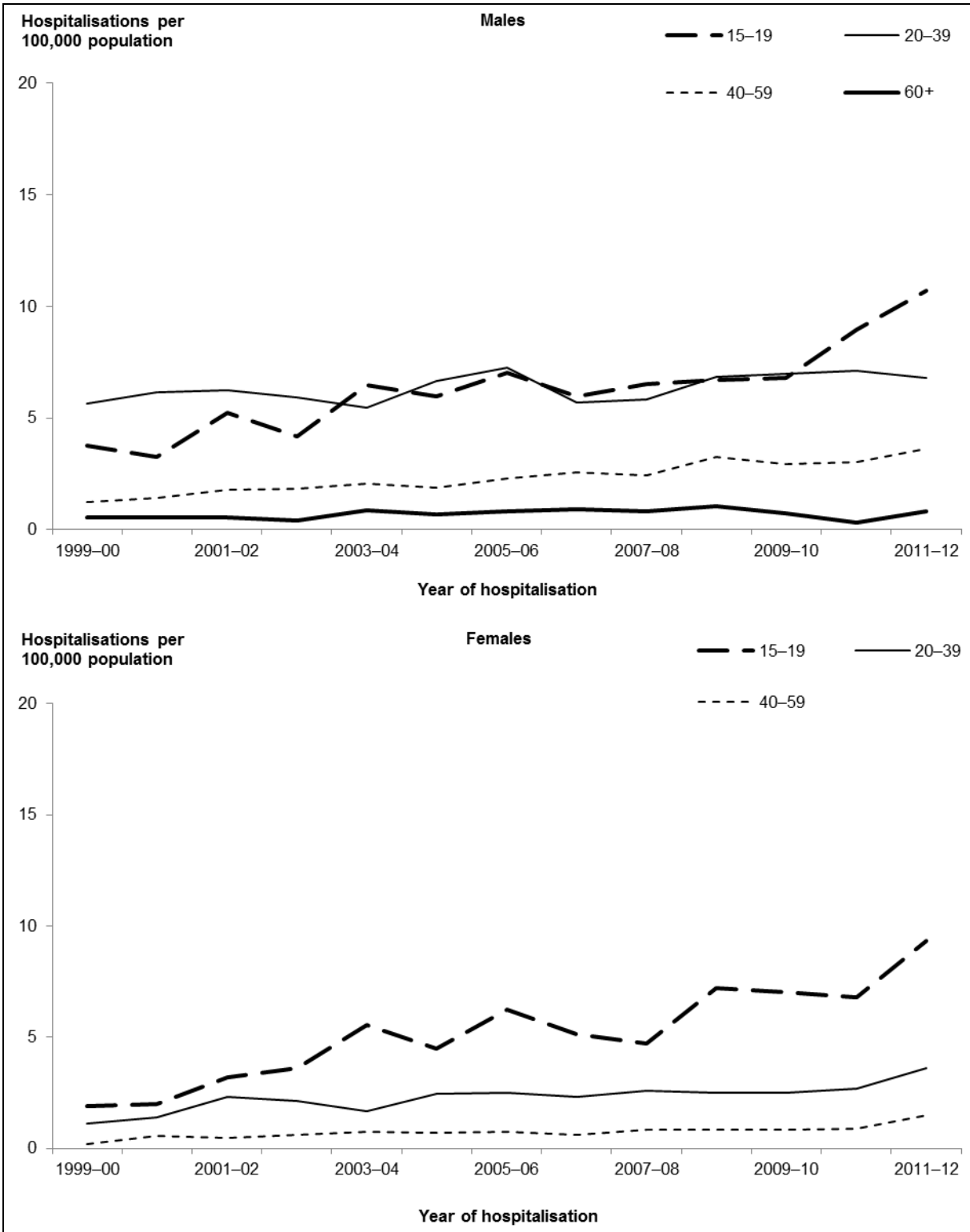

*Note:* A table corresponding to this figure, Table A4.10, can be found in Appendix 4.

*Source:* AIHW National Morbidity Database.

**Figure 12.8: Rates of hospitalisation as a result of intentional self-harm due to hanging, by sex, Australia, 1999–00 to 2011–12**

## Age group and sex

Age-adjusted rates for males and females hospitalised due to intentional self-harm as a result of hanging were highest in younger age groups for both sexes, and increased noticeably over time for the 15–19 age group (Figure 12.9). Rates for other age groups either increased slightly over time or were relatively flat.



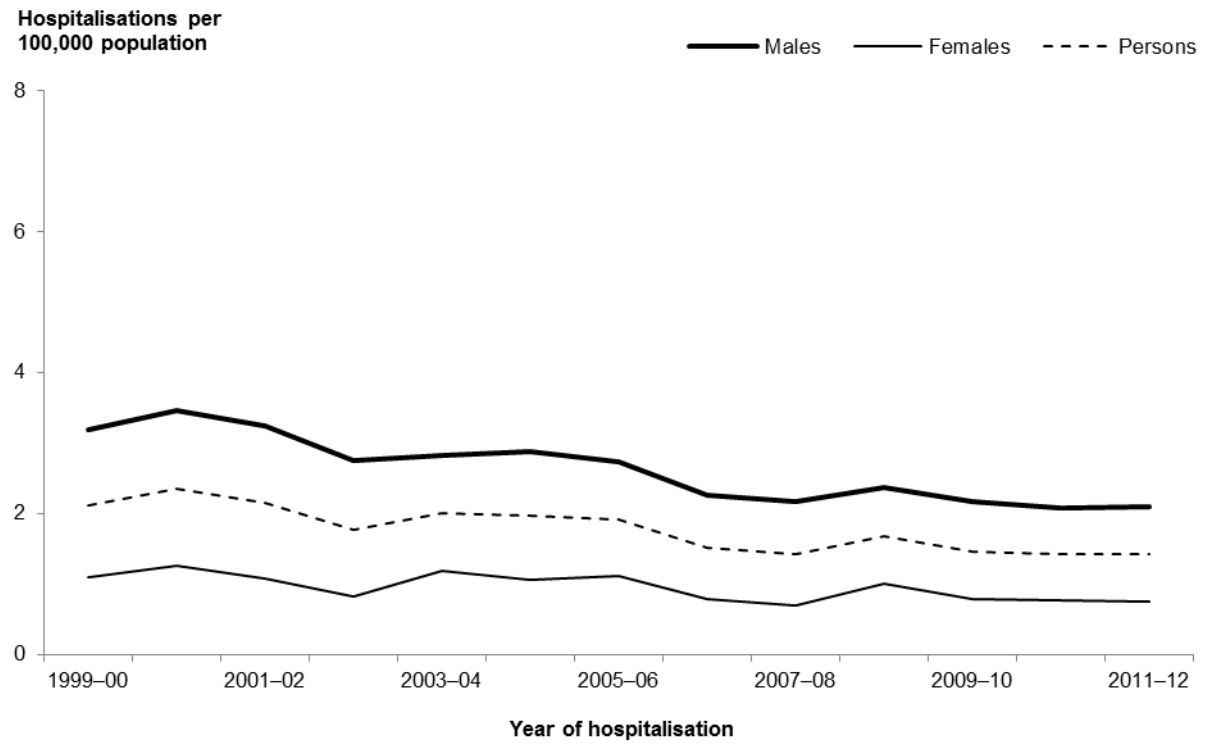

*Note:* Rates for females aged 60 and over are not shown due to small case numbers.

*Source:* AIHW National Morbidity Database.

**Figure 12.9: Male and female rates of hospitalisation as a result of intentional self-harm due to hanging, by selected age groups, Australia, 1999–00 to 2011–12**

# 12.5 Gaseous substances

Rates for males hospitalised due to intentional self-harm as a result of poisoning by exposure to gas were generally 2 to 3 times the rates for females over the period from 1999–00 to 2011–12 (Figure 12.10). There was a decrease in rates for males over this period while female rates remained relatively steady.




*Note:* A table corresponding to this figure, Table A4.11, can be found in Appendix 4.

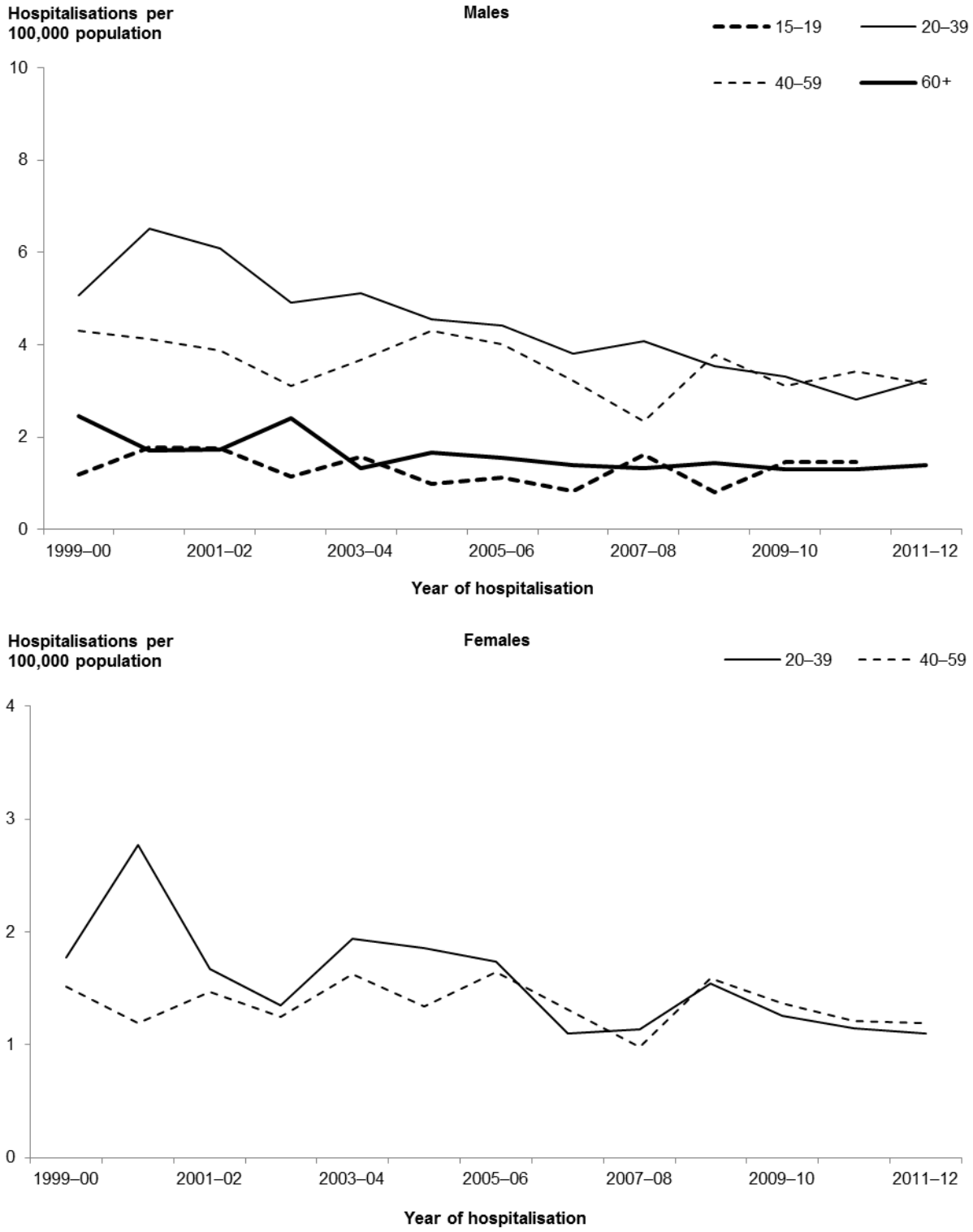
*Source:* AIHW National Morbidity Database.

**Figure 12.10: Rates of hospitalisation as a result of intentional self-harm for poisoning by exposure to gaseous substances, by sex, Australia, 1999–00 to 2011–12**

## Age group and sex

For hospitalisations due to intentional self-harm as a result of poisoning by exposure to gaseous substances, rates for both males and females aged 20–59 were consistently higher than rates for older and younger groups over the period from 1999–00 to 2011–12 (Figure 12.11).

There was a decrease in rates for both males and females aged 20–39 over this period, while for other age groups, rates were relatively steady despite some fluctuations from year to year.



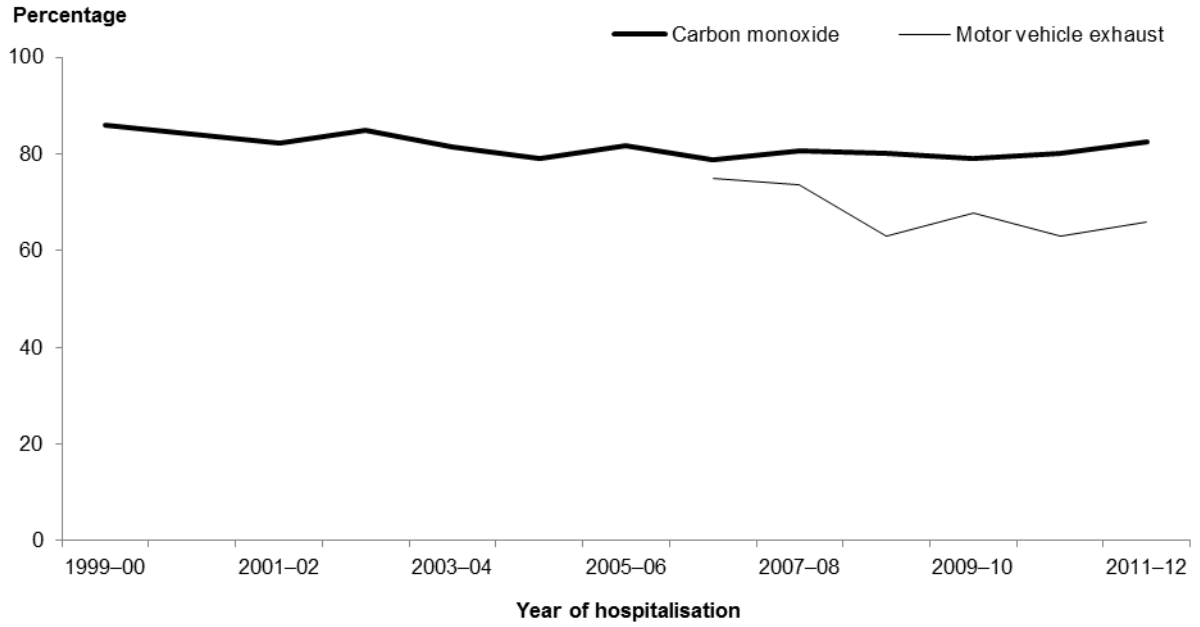

*Note:* Rates for females aged between 15–19 and aged 60 and over are not shown due to small case numbers.

*Source:* AIHW National Morbidity Database.

**Figure 12.11: Male and female rates of hospitalisation as a result of intentional self-harm for poisoning by exposure to gaseous substances, by selected age groups, Australia, 1999–00 to 2011–12**

## Poisoning by carbon monoxide

Of those hospitalised each year in the period from 1999–00 to 2011–12 due to intentional self-poisoning by exposure to gases, around 80%–85% were exposed to some form of carbon monoxide (Figure 12.12). For those hospitalised in the period from 2006–07 to 2011–12 as a result of intentional self-poisoning by exposure to gases, the percentage of cases exposed to motor vehicle exhaust fell from 75% to 66%.




*Notes*

1. The thick line represents cases where the first encountered external cause code in the hospital record indicated intentional self-poisoning by exposure to gas and any diagnosis code indicating toxic effect of carbon monoxide.
2. The thin line represents cases with a left-most external code in the hospital record indicating intentional self-poisoning by exposure to motor vehicle exhaust gas and any diagnosis code indicating toxic effect of carbon monoxide. Data for motor vehicle exhaust cases are not shown from 1999–00 to 2001–02 due to the lack of a specific code for these cases in the ICD-10-AM classification at this time. A specific code for motor vehicle exhaust cases was introduced for the 3rd Revision of ICD-10-AM for hospitalisations from 1 July 2002 onwards. Due to doubtful quality for this category, data prior to 2006–07 are not presented.

*Source:* AIHW National Morbidity Database.

**Figure 12.12: Percentage of intentional self-harm hospitalisations as a result of poisoning by exposure to gaseous substances, poisoned by exposure to carbon monoxide and to motor vehicle exhaust gas, Australia, 1999–00 to 2011–12**

# 12.6 Other mechanisms of injury

## Firearms

Of those who were hospitalised in the period from 1999–00 to 2001–12 due to intentional self-harm as a result of firearms and who were discharged from hospital alive, close to 60% sustained an injury to the head (Table 12.5). Of those in the group who died while in hospital, over 96% had a head injury.

**Table 12.5: Body region of injury for hospitalisations as a result of intentional self-harm due to firearms, by whether person was discharged alive or died in hospital, Australia, 1999–00 to 2011–12**

| Body region of injury | Discharged alive | % | Died in hospital | % |
|---|---|---|---|---|
| Head | 219 | 60.0 | 166 | 96.5 |
| Neck | 20 | 5.5 | 7 | 4.1 |
| Thorax | 66 | 18.1 | 5 | 2.9 |
| Abdomen, lower back, lumbar spine and pelvis | 38 | 10.4 | 3 | 1.7 |
| Shoulder & upper arm | 25 | 6.8 | n.p. | 0.6 |
| Elbow & forearm | 5 | 1.4 | 0 | 0.0 |
| Wrist & hand | 23 | 6.3 | 0 | 0.0 |
| Hip & thigh | 11 | 3.0 | 0 | 0.0 |
| Knee & lower leg | 12 | 3.3 | 0 | 0.0 |
| Ankle & foot | 4 | 1.1 | 0 | 0.0 |
| Unspecified parts of trunk, limb or body region | 3 | 0.8 | n.p. | 0.6 |
| Effects of foreign body entering through natural orifice | 9 | 2.5 | n.p. | 0.6 |
| **Total**[(a)] | **365** | | **172** | |

(a) Counts are determined using the principal diagnosis in the hospital record as well as additional diagnoses. Hence, the total of the values shown in this table for body region of injury exceeds the total number of cases because some cases received injuries to 2 or more body regions.

*Source:* AIHW National Mortality Database and AIHW National Morbidity Database.

## Thermal causes

Of those hospitalised in the period from 1999–00 to 2011–12 due to intentional self-harm as a result of exposure to smoke, fire and flames, heat and hot substances, over 97% (1,119) received burns to at least 1 body region (Table 12.6). Over half (53% or 608) of those hospitalised received burns to the shoulder and upper arm region. More than one-third received burns to 1 of the head and neck region; the trunk; the wrist and hand region; or the hip and lower limb region. Almost 3% (33 cases) had a principal diagnosis indicating exposure to some form of toxic gas.

**Table 12.6: Body region of burn for hospitalisations as a result of intentional self-harm due to exposure to smoke, fire and flames, and to heat and hot substances, Australia, 1999–00 to 2011–12**

| Body region of burn | Smoke, fire, flames | Hot vapours, hot objects | Total | % |
|---|---|---|---|---|
| Head and neck | 373 | 24 | 397 | 34.5 |
| Trunk | 400 | 26 | 426 | 37.0 |
| Shoulder and upper arm | 508 | 100 | 608 | 52.9 |
| Wrist and hand | 356 | 30 | 386 | 33.6 |
| Hip and lower limb | 389 | 39 | 428 | 37.2 |
| Ankle and foot | 100 | 7 | 107 | 9.3 |
| Eye | 27 | n.p. | n.p. | n.p |
| Respiratory tract | 90 | n.p. | n.p. | n.p. |
| Other internal organs | 33 | 3 | 36 | 3.1 |
| Multiple body regions | 36 | 0 | 36 | 3.1 |
| Unspecified body region | 2 | n.p. | n.p. | n.p. |
| **Total**[(a)] | **983** | **167** | **1,150** | |

(a) Counts are determined using both principal and additional diagnoses in the hospital record. Hence, the total of the values shown in this table for body regions exceeds the total number of cases because some cases received burns to 2 or more body regions.

*Source:* AIHW National Morbidity Database.

Of those hospitalised in the period from 1999–00 to 2011–12 due to intentional self-harm due to a thermal mechanism, just over 60% sustained burns to less than 10% of their body surface area and nearly 14% sustained burns to 50% of more (Table 12.7).

**Table 12.7: Extent of body surface burn for hospitalisations as a result of intentional self-harm due to exposure to smoke, fire and flames, heat and hot substances, Australia, 1999–00 to 2011–12**

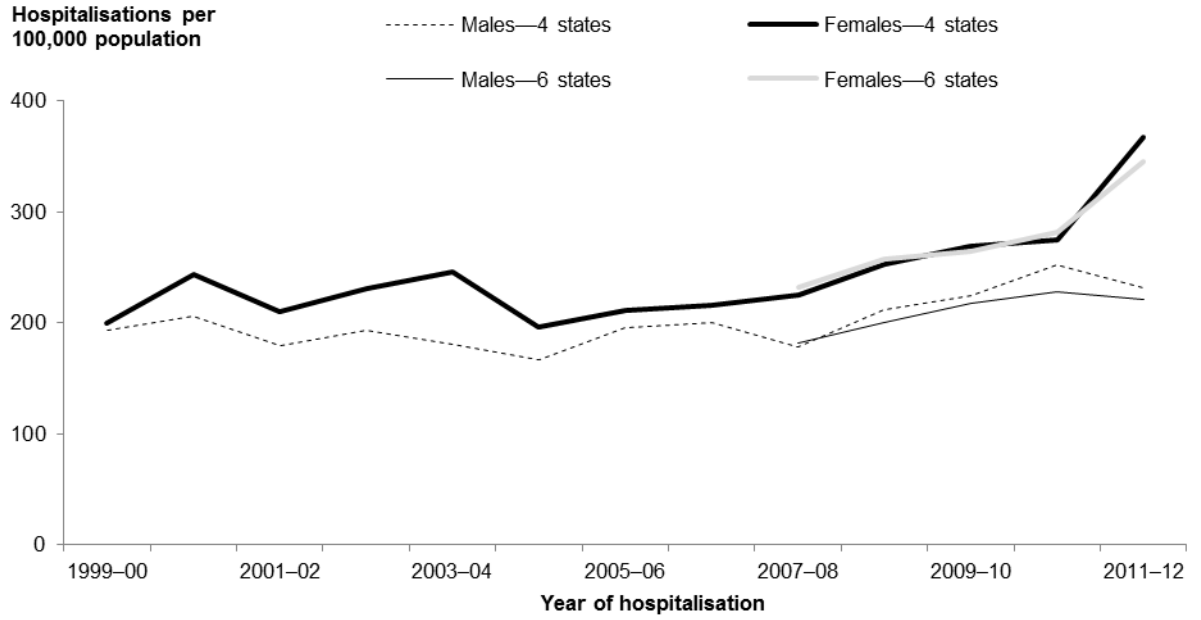
| Extent of body surface burn | Males | Females | Persons | % |
|---|---|---|---|---|
| < 10% | 277 | 415 | 692 | 60.2 |
| 10–19% | 55 | 45 | 100 | 8.7 |
| 20–29% | 28 | 26 | 54 | 4.7 |
| 30–39% | 36 | 21 | 57 | 5.0 |
| 40–49% | 17 | 13 | 30 | 2.6 |
| 50–59% | 19 | 12 | 31 | 2.7 |
| 60–69% | 19 | 7 | 26 | 2.3 |
| 70–79% | 12 | 10 | 22 | 1.9 |
| 80–89% | 20 | 11 | 31 | 2.7 |
| 90% or more | 33 | 18 | 51 | 4.4 |
| **Total** | **545** | **605** | **1,150** | |

*Source:* AIHW National Morbidity Database.

# 13 Hospitalised intentional self-harm of Indigenous Australians

Due to incomplete identification of Indigenous status, calculation of trends in hospitalised intentional self-harm for Indigenous Australians is restricted to data from 4 jurisdictions from 1999–00 (Queensland, Western Australia, South Australia and the Northern Territory). Calculation of these trends was supplemented with data from 6 jurisdictions from 2007–08 (the original 4 states with the addition of New South Wales and Victoria).

Rates of hospitalised intentional self-harm for Indigenous males and females tended to rise in the latter part of the period 1999–00 to 2011–12, although fluctuations, small case numbers and the short run of years for the 6-state data impede assessment of the statistical significance of these trends (Figure 13.1). Rates based on data from all 6 jurisdictions for the period from 2007–08 to 2011–12 were broadly similar to rates based on the previously used data from 4 jurisdictions.

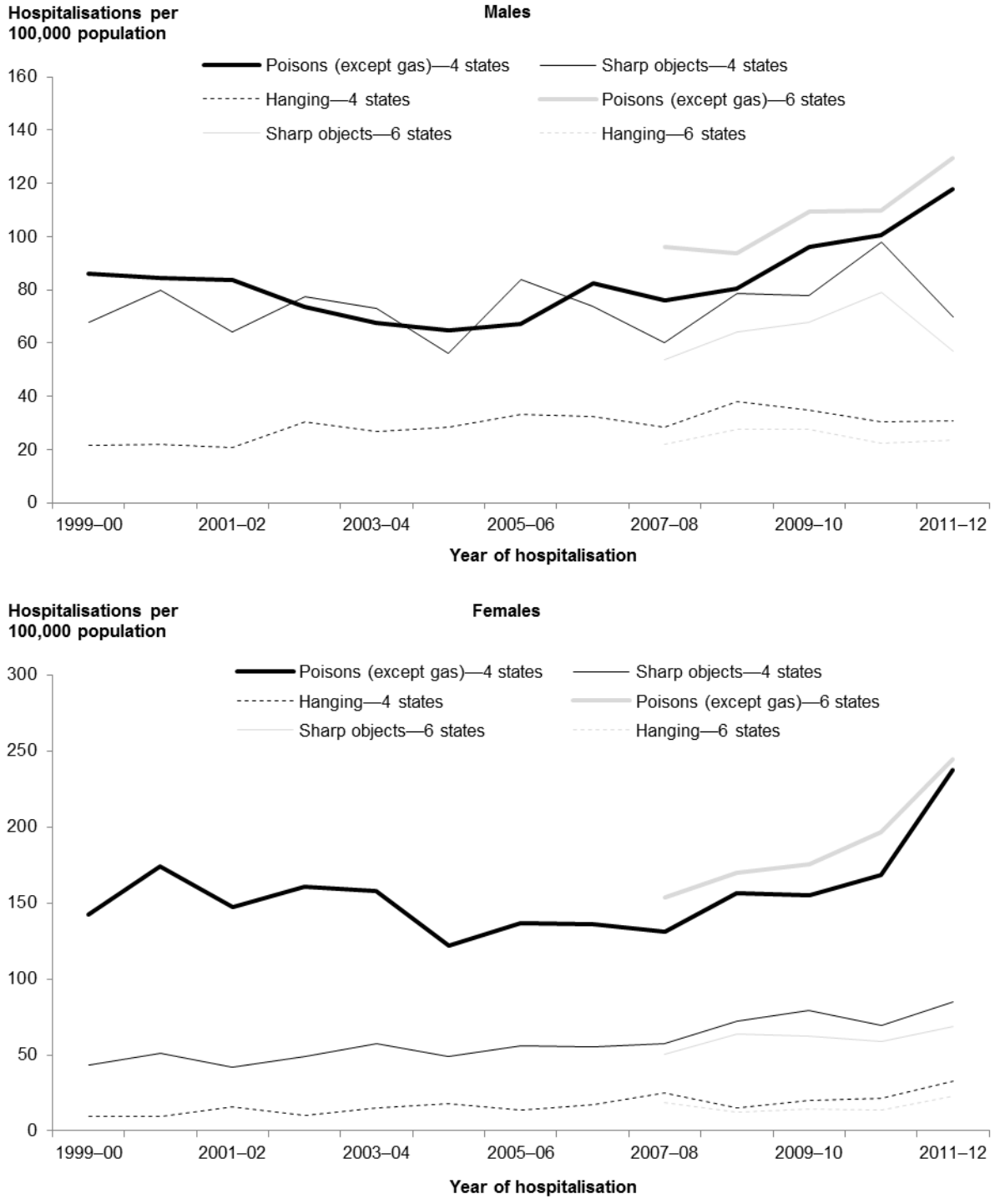



*Note:* 'Four state' data are for residents of Queensland, Western Australia, South Australia and the Northern Territory. 'Six state' data are for residents of these 4 jurisdictions plus residents of New South Wales and Victoria.

*Source:* AIHW National Morbidity Database.

**Figure 13.1: Rates of hospitalisation as a result of intentional self-harm for Indigenous Australians by sex, Australia, 1999–00 to 2011–12**

For Indigenous males, hospitalised rates of intentional self-harm due to poisonings excluding gases and for contact with sharp objects were similar over the period from 1999–00 to 2011–12, while for Indigenous females, rates for poisonings (excluding gases) were consistently 2 to 3 times as high as rates for contact with sharp objects over this period (Figure 13.2). Rates for poisons for both Indigenous males and females were relatively steady for most of the period, before rising markedly towards the end. Rates for sharp objects and hanging for Indigenous females rose steadily over this period. Rates based on data from all 6 jurisdictions were higher than rates based on the previously used 4 jurisdictional data for poisonings, and lower rates for contact with sharp objects and hangings.



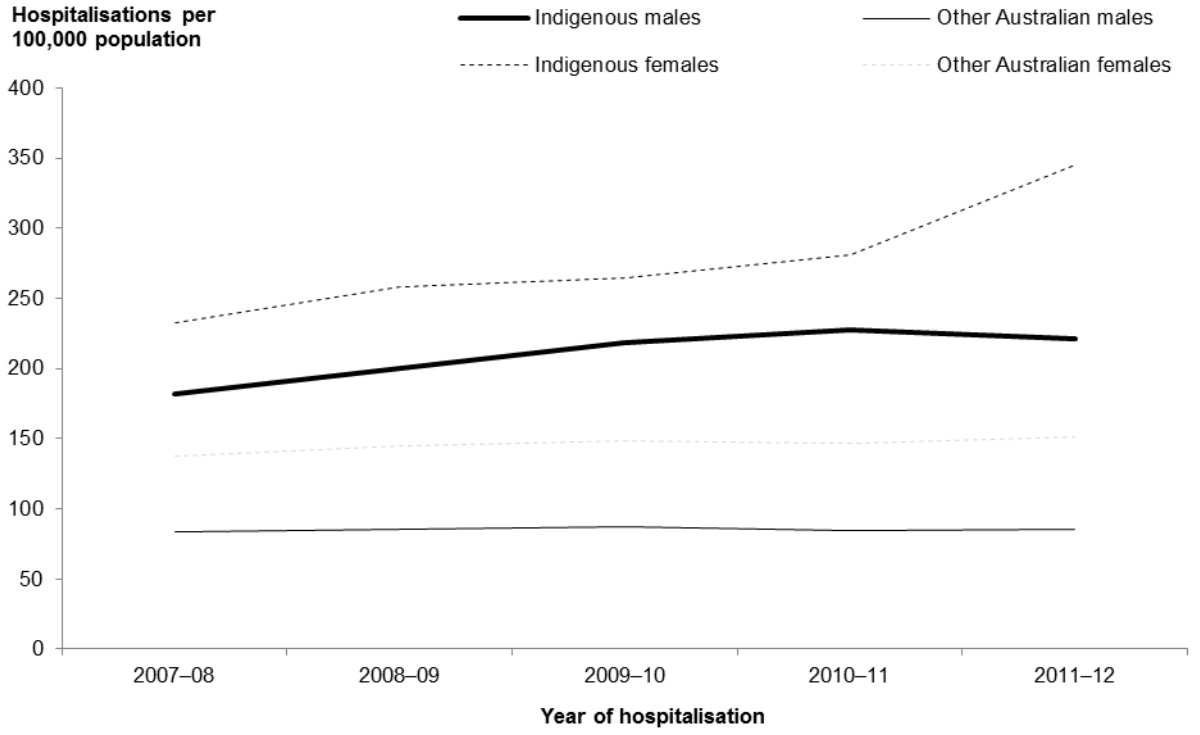

*Note:* Four state data are for residents of Queensland, Western Australia, South Australia and the Northern Territory. Six state data are for residents of these 4 states plus residents of New South Wales and Victoria.

*Source:* AIHW National Morbidity Database.

**Figure 13.2: Rates of hospitalisation as a result of intentional self-harm for Indigenous males and Indigenous females , for selected mechanisms of injury, Australia, 1999–00 to 2011–12**

## Indigenous Australians and Other Australians

For the period from 2007–08 to 2011–12, rates of hospitalised intentional self-harm for Indigenous males and females were around 2.5 times and 2 times as high as the rates for *Other Australian* males and females, respectively (Figure 13.3). Rates for Indigenous females were 1.5 times as high at the end of the period when compared to the start of the period, while for Indigenous males there was a weak indication of an increase in rates between 2007–08 and 2010–11. Rates for *Other Australian* males and females were steady over this period.




*Note:* Data are for residents of New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory.

*Source:* AIHW National Morbidity Database.

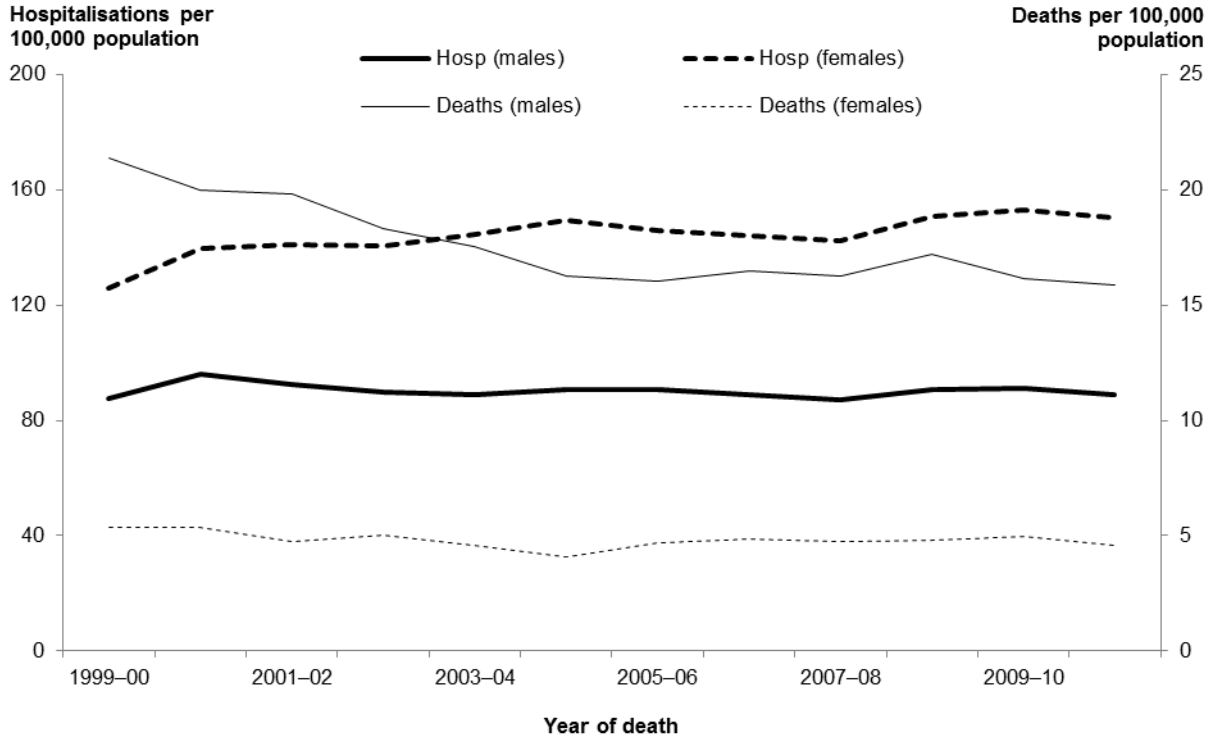
**Figure 13.3: Rates of hospitalisation as a result of intentional self-harm for Indigenous Australians and Other Australians, by sex, Australia, 2007–08 to 2011–12**

The proportion of hospitalisations due to intentional self-harm by mechanism of injury varied markedly between *Indigenous Australians* and *Other Australians*. Poisonings accounted for three-quarters of all hospitalisations for *Other Australian* males and just under half (49%) of all hospitalisations for Indigenous males for the period from 2007–08 to 2011–12 (data not shown). The corresponding figures for females were 88% and 63% respectively. Indigenous males hospitalised due to intentional self-harm were much more likely to have used sharp objects (31%) or hanging (13%) than their *Other Australian* counterparts (15% and 3%). A similar pattern was observed for Indigenous females in comparison with *Other Australian* females.

# 14 Comparison of trends in hospitalised intentional self-harm and suicide deaths: 1999–00 to 2010–11

## All mechanisms

There was an apparent decline in suicide rates for males over the period from 1999–00 to 2010–11 while hospitalised self-harm rates for males remained relatively steady over this period (Figure 14.1). A different pattern was observed for females, where suicide rates remained steady, while there was a weak indication of an increase over time in hospitalised self-harm rates over this period.

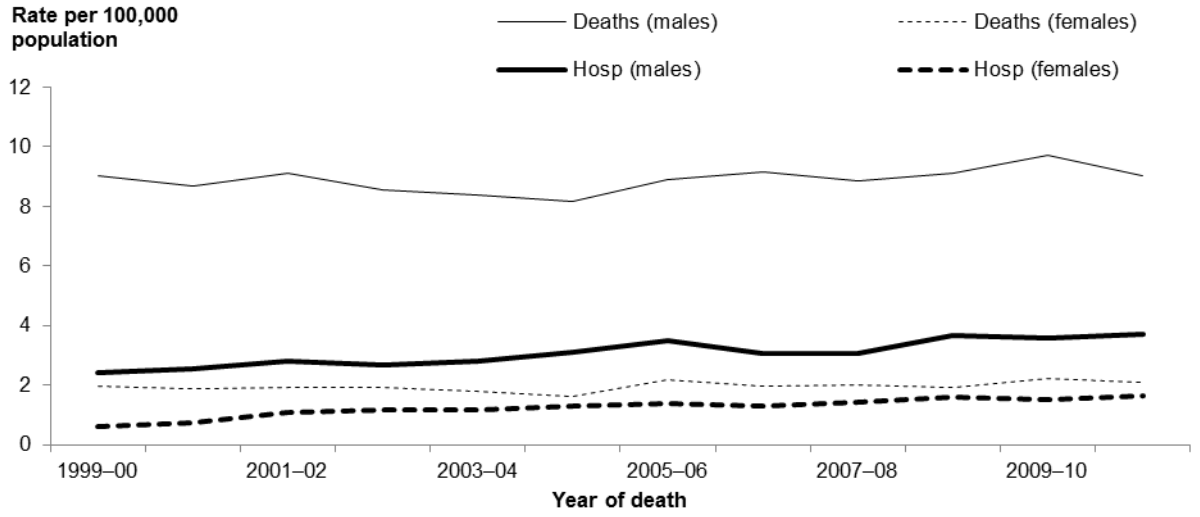



*Source:* AIHW National Mortality Database and AIHW National Morbidity Database.

**Figure 14.1: Suicide and hospitalised intentional self-harm rates, by sex, Australia, 1999–00 to 2010–11**

## Hanging

Suicide rates for both males and females due to hanging were relatively steady over the period from 1999–00 to 2010–11, while hospitalised intentional self-harm rates due to hanging for both sexes increased slightly over this period (Figure 14.2).

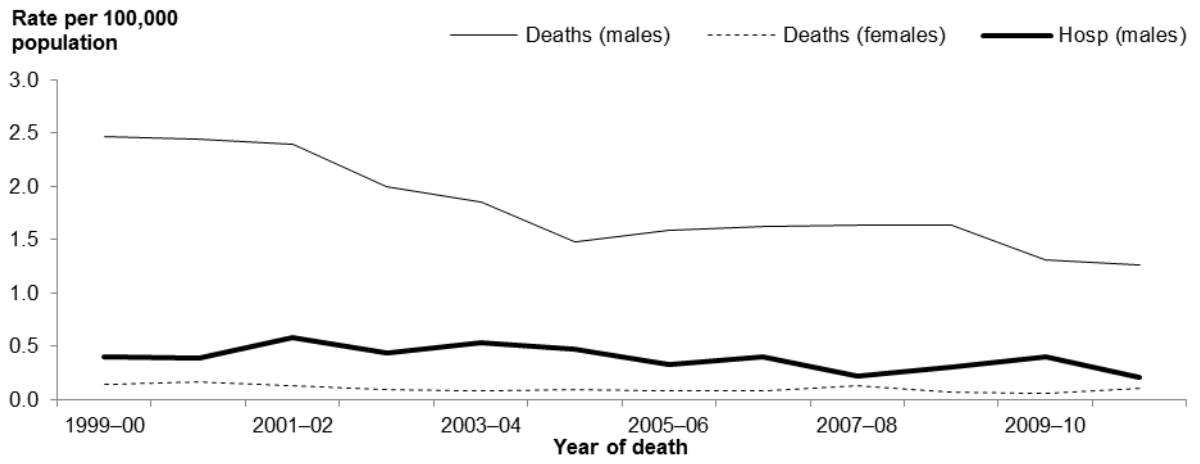



*Source:* AIHW National Mortality Database and AIHW National Morbidity Database.

**Figure 14.2: Suicide and hospitalised intentional self-harm rates due to hanging, by sex, Australia, 1999–00 to 2010–11**

## Firearms

Male suicide rates due to firearms fell markedly over the period from 1999–00 to 2010–11, while the male rate for hospitalised intentional self-harm by this mechanism remained relatively steady (Figure 14.3). As with hanging, the much higher suicide rate for males, when compared to the hospitalised self-harm rates, most likely reflects the high lethality rate for this method.



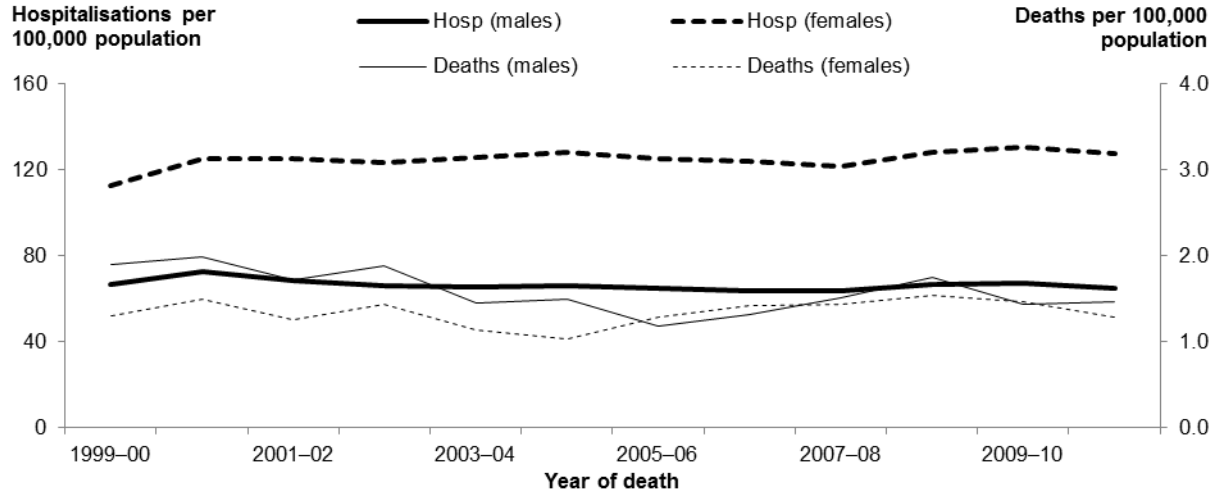

*Note:* Hospitalised self-harm rates for females are not shown due to low case numbers,

*Source:* AIHW National Mortality Database and AIHW National Morbidity Database.

**Figure 14.3: Suicide and hospitalised intentional self-harm rates due to firearms, by sex, Australia, 1999–00 to 2010–11**

## Poisons (except gas)

Suicide and hospitalised intentional self-harm rates for both males and females resulting from exposure to poisons other than gases remained relatively steady over the period from 1999–00 to 2010–11 (Figure 14.4). Hospitalised self-harm rates for males for this period were consistently 40 to 50 times as high as male suicide rates involving this mechanism, while female hospitalised self-harm rates were around 100 times as high as the corresponding female suicide rates. Note the use of a second vertical axis in Figure 14.4 due to the great difference in the 2 types of rates.

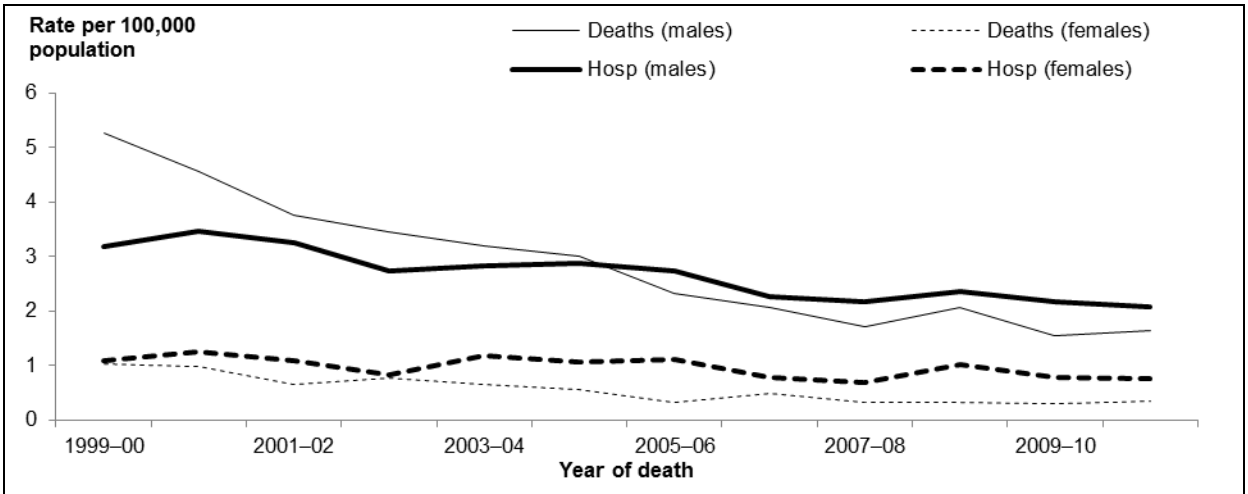



*Source:* AIHW National Mortality Database and AIHW National Morbidity Database.

**Figure 14.4: Suicide and hospitalised intentional self-harm rates due to poisons (except gas), by sex, Australia, 1999–00 to 2010–11**

## Gas

Suicide rates for males poisoned by exposure to gas declined markedly over the period from 1999–00 to 2010–11 (Figure 14.5). There were also slight declines in suicide rates for females and hospitalised intentional self-harm rates for males.

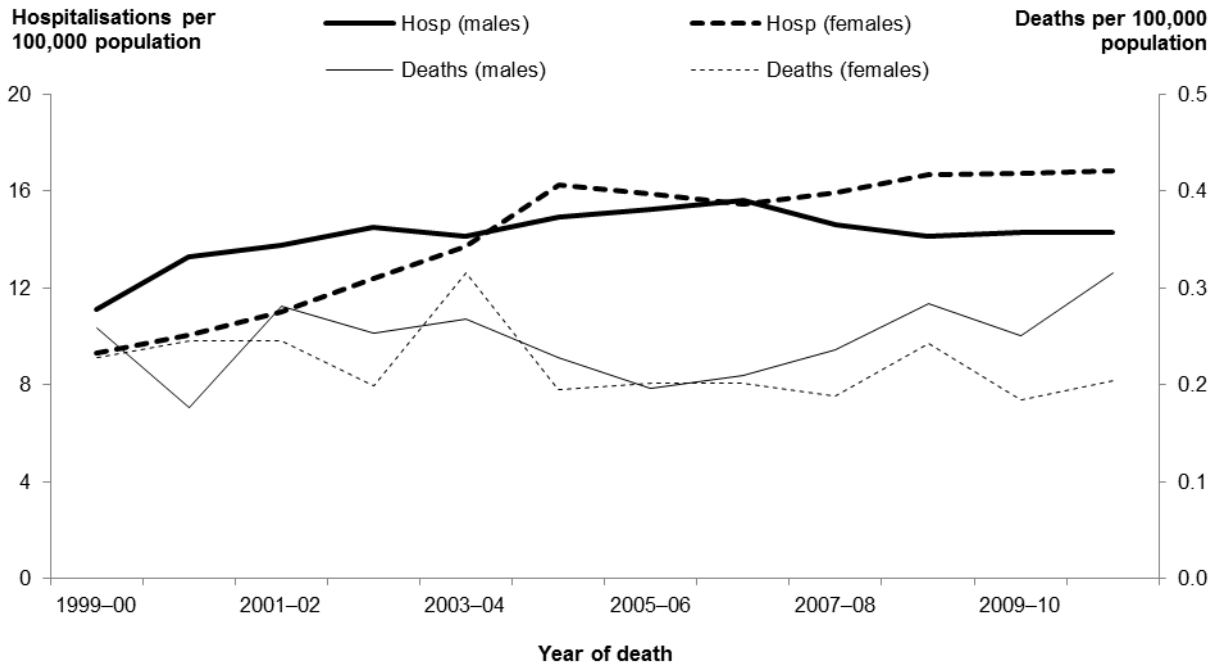



*Source:* AIHW National Mortality Database and AIHW National Morbidity Database.

**Figure 14.5: Suicide and hospitalised intentional self-harm rates due to gas, by sex, Australia, 1999–00 to 2010–11**

## Sharp objects

Rates of hospitalised intentional self-harm for females due to contact with a sharp object increased over the period from 1999–00 to 2010–11 (Figure 14.6). Hospitalised self-harm rates for males and females were consistently 40 or more times as high as the equivalent suicide rates for this period, reflecting the very low lethality for this method of self-harm. Note the use of two vertical axes in Figure 14.6 to accommodate the very different values of the 2 types of rates.




*Source:* AIHW National Mortality Database and AIHW National Morbidity Database.

**Figure 14.6: Suicide and hospitalised intentional self-harm rates due to contact with sharp objects, by sex, Australia, 1999–00 to 2010–11**

# Appendix 1: Data issues

## Mortality data

### Data sources

Deaths data are provided to the AIHW by the Registries of Births, Deaths and Marriages and the National Coronial Information System and coded by the ABS. The data are maintained by the AIHW in the National Mortality Database (NMD). Data on deaths registered in the period from 1 January 1964 to 31 December 2011 are from the unit record NMD.

Deaths registrations for the period from 1 January 1921 to 31 December 1963 are as published by the Commonwealth Bureau of Census and Statistics in its Demography Bulletins series to 1962 and then in the Causes of Death series. Values are from tables of numbers of deaths by year of registration, cause, sex, and 5-year age groups to 85 years and older. The tables used here were prepared by the AIHW and were used for previous projects including a report on trends in suicide (Steenkamp, 2000). These historical data on causes of death are held by the AIHW in spread-sheets as part of the content of the AIHW General Record of Incidence of Mortality, known as GRIM Books.

### Selection criteria

The mortality section of this report is intended to describe the population incidence of injuries in Australia that resulted in death due to suicide. This section describes the criteria that were used to select records to achieve this purpose.

#### Period

Data in this report covers the period from 1921 to 2011. This period covers 8 different revisions of ICD from ICD-3 to ICD-10. Table A1.1 shows the year of registration range and code range applicable to each version of ICD for cases where the *Underlying cause of death* (UCoD) code indicates suicide. Deaths recorded as being due to late effects of self-harm were omitted where practicable (see below).

**Table A1.1: ILCD and ICD revisions used in Australia, by years of registration and code ranges**

| Revision[(a)] | Years of registration | Code range (Suicide) |
|---|---|---|
| ILCD-3 | 1922–1930 | 165–174 |
| ILCD-4 | 1931–1939 | 163–171 |
| ILCD-5 | 1940–1949 | 163–164 |
| ICD-6 | 1950–1957 | E970–E979[(b)] |
| ICD-7 | 1958–1967 | E970–E979[(b)] |
| ICD-8 | 1968–1978 | E950–E958 |
| ICD-9 | 1979–1998[(c)] | E950–E958 |
| ICD-10 | 1999–2011 | X60–X84 |

(a) International List of Causes of Death (ILCD) to the 5th revision, then International Classification of Diseases, Injuries and Causes of Death (ICD).

(b) The tabular data used for deaths registered in the period 1950 to 1963 also included deaths coded to E963, late effect of self-harm ($n$ = 1 death in the period 1951 to 1962, inclusive).

(c) Deaths registered in 1997 and 1998 were also coded to ICD-10.

Chapters in the mortality section of this report cover varying time periods. The periods covered within each chapter are detailed below.

Chapter 2 covers suicides occurring in 2010–11. Data in this chapter are presented by financial year of death, in order to provide a direct comparison with analysis of hospitalisations due to intentional self-harm during 2010–11 (Chapter 11).

Chapters 3 to 7 cover the period from the early 1920s through to 2010. Chapters 3 to 5 cover the period from 1921 to 2010 while chapters 6 (Poisons (except gas)) and 7 (Gas) cover the period from 1922 to 2010, since data for 1921 for these external causes of injury was not available. Data for the period from the early 1920s through to 1963 are presented by year of death registration, since this is the only format in which the data were available. Data from 1964 to 2010 are presented by year of death, since unit record data with date of death were available for this period.

In chapters 3 to 8, some charts and tables cover periods over a much shorter time frame. These instances include:

- Charts showing number of deaths for selected mechanisms of death, by different intent (for example, Figure 4.5)—these are limited to deaths occurring in the period 1964 to 2010 because ICD codes relating to 'undetermined intent' were not introduced until the implementation of ICD-8 in 1968.
- Chart showing suicide rates and usage of selected drugs (Figure 6.6)—this chart is limited to the period from 1997 to 2010 because *Multiple cause of death* codes (MCoDs) were not assigned to deaths registered prior to 1997.
- Chart showing suicide case numbers for different types or forms of gas (Figure 7.6)—this chart is limited to the period from 1964 to 2010 because deaths registered prior to 1964 are not available as unit record data.

Chapter 9, which describes suicide rates based on remoteness area of residence, covers the period from 2001–02 to 2010–11. This restricted time frame is due to the unavailability of comparable population data by remoteness area prior to this period.

Chapter 10 provides a brief overview of suicide deaths for Indigenous Australians for the period from 1999–00 to 2010–11. Data is restricted to this time frame due to the unreliable ascertainment of Indigenous status for a number of jurisdictions prior to this period.

### Injury

Cases were included if the *Underlying cause of death* (UCoD) was assigned an International Classification of Disease (ICD) code indicating suicide. Deaths attributed to late effects of self-harm were excluded where that was practicable. This is because the focus of the report is cases of self-harm incident in a period, but the date of injury for late effects cases is unknown and could be long before death. The number of deaths coded as due to late effects of suicide is small: an average of about one death per year from 1964 onwards. Late effects cases were not omitted from the tabular data used for deaths registered from 1950 to 1963. However, according to Demography Bulletins for the period only one death was coded to this cause in the years 1951 to 1962, inclusive.

In some parts of the report, for comparison with suicide deaths, cases have been included with an ICD code indicating that the injury was unintentional or where intent was undetermined (see Figures 4.5, 5.5, 6.5 and 7.5).

| Figure | Suicide | Unintentional | Undetermined |
|---|---|---|---|
| 4.5 Hanging | 7: E974<br>8,9: E953<br>10: X70 | 7: E925<br>8,9: E913<br>10: W76, W77 | 7: na<br>8,9: E983<br>10: Y20 |
| 5.5 Firearms (incl explosives) | 7: E976<br>8,9: E955<br>10: X72-X75 | 7: E919<br>8,9: E922, E923<br>10: W32-W34, W40 | 7: na<br>8,9: E985<br>10: Y22-Y25 |
| 6.5 Poison, not gas | 7: E970, E971<br>8,9: E950<br>10: X60-X66, X68, X69 | 7: E867-E869<br>8,9: E850-E858, E860-E866<br>10: X40-X46, X48, X49 | 7: na<br>8,9: E980<br>10: Y10-Y16, Y18, Y19 |
| 7.5 Poison, gas | 7: E972, E973<br>8,9: E951, E952<br>10: X67 | 7: E890-E895<br>8: E870-E877<br>9: E867-E869<br>10: X47 | 7: na<br>8,9: E981, E982<br>10: Y17 |

## Indigenous deaths

Rates of death by suicide of Aboriginal and Torres Strait Islander people are provided in this report for the period from 1999–00 to 2010–11. Data from 4 jurisdictions (Queensland, Western Australia, South Australia and the Northern Territory) are presented for the period 1999–00 to 2010–11 and data for those jurisdictions plus New South Wales are presented for the period from 2007–08. Data were selected on the basis of place of usual residence. Restriction of inclusion by jurisdiction and period reflects assessments of the quality of identification of indigenous status. The assessments are subject to review and some recent AIHW reports include NSW data from 1999 onwards (AIHW 2014).

Figure 10.3 in this report presents suicide rates for *Indigenous Australians* and for *Other Australians*. '*Other Australians'* includes cases where the person's Indigenous status is described as 'non-Indigenous' and those where indigenous status was not-stated or unknown. Current standard practice in AIHW reports is to omit cases where indigenous status was not-stated or unknown.

## Changes in how suicide data were obtained and processed

Noteworthy changes occurred during the first decade of the twentieth century in how suicide data were obtained and processed in Australia. Deaths by suicide are certified by coroners. Until 2003, ABS officers obtained the information used to cause-code coroner-certified deaths from records in coroners' offices. In 2003 they began to use the on-line National Coronial Information System (NCIS) to access information and have relied solely on the NCIS for coroner-certified deaths registered from 2006 onwards. This change had effects on the coding of causes of injury deaths, particularly on the ascertainment of the role of human intent.

Further changes were introduced by the ABS, largely as a consequence of this. The main further changes were (i) the introduction of a program of data revisions (see below); (ii) a change in the use of the 'undetermined intent' block of the ICD-10 External Causes chapter; and (iii) application of more resources to the investigation of coroners' reports to identify specific causes of death, through increased use of police reports, toxicology reports, autopsy reports and coroners findings. The changes were first applied to deaths registered in 2007. Enhancements were made for processing deaths registered in 2008 and later. Deaths registered in 2006 were re-processed according to the revised methods and the revised file was released in 2012. Further information on the changes and their effects on suicide

statistics can be found in a previous report (Harrison et al. 2009). These matters are also a subject of a technical report on injury mortality statistics, which is under review.

A guide to the changes and their effects concerning suicide statistics has been provided by the ABS as part of the on-line report on Causes of Death, Australia, 2012 <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/3303.0main+features100042012>.

## Data revisions

The Australian Bureau of Statistics (ABS) introduced a process whereby all coroner-certified deaths registered after 1 January 2007 are subject to 2 rounds of revision, occurring at 12 and 24 months after the initial release of data. In each revision, coroner cases which were open at the ABS processing end date are reassessed by the ABS to take account of any new information available on the National Coronial Information System (NCIS). The ABS refers to the first release of data for each reference year as *Preliminary* and the subsequent releases as *Revised* and *Final*.

This report contains data from the ABS mortality unit record data collection from the 1964 death registrations data up until the *Preliminary release* of the 2011 death registrations data. This report also contains data from the *Revised* release of the 2010 deaths registrations data, as well as the *Final* release of data for the reference years 2007 to 2009. The ABS issued an updated release of the 2006 data, which was used for this report. There was only a single release of data for reference years before 2006.

The data on deaths registered in 2010 and 2011 used in this report were based on the *Revised* and *Preliminary* releases of data and were subject to further revision by the ABS. Consequently, the estimated numbers of suicides for 2010 and 2011 were not final. *Final* estimates for these years can be expected to be higherthan the *Preliminary* and *Revised* estimates for these reference years.

## Multiple causes of death

Until the end of 1996, the ABS coded only 1 cause for each death. This is the *Underlying cause of death* (UCoD) which the Bureau defines as being 'the disease or injury which initiated the train of morbid events leading directly to death' (in keeping with World Health Organization (WHO) rules). The UCoD is derived from information on the death certificate according to rules that form part of the *International Classification of Diseases*.

Beginning with deaths registered in 1997, other morbid conditions, diseases and injuries entered on the death certificate were also coded as MCoDs. Up to 20 MCoDs may be recorded for each death.

Where they are assigned, MCoD codes can provide additional information about deaths where the UCoD was an *External cause* (injury or poisoning). MCoDs also make it possible to identify an additional subset of deaths, namely those where the UCoD was not an *External cause*, but where 1 or more *External causes* have been specified on the death certificate as having contributed to the death.

In this report, cases have been included solely on the basis that they have been assigned an UCoD code indicating suicide. Previous investigations have found a small number of cases (3–4 cases annually on average since 1997) that are not included by this criterion in which MCoD codes are in the range X60–X84 (suicide) (Henley & Harrison 2009; Henley et al. 2007). These cases have not been included in the present report, for comparability with data for years before MCoDs became available.

In some instances, and for deaths occurring from 1997–98 onwards, MCoD codes have been used to determine counts related to poisoning by exposure to poisons (except gas) (T36–T57, T60–T65) or poisoning by exposure to gaseous substances (T58–T59).

## Reporting periods

The AIHW receives mortality unit record data in annual files, each containing records for all deaths *registered* in a particular calendar year and notified to the ABS within three months of the end of the year, the causes being coded using information known to the ABS by a cut-off date, normally some time towards the end of the following calendar year.

Some time always passes between the date on which a death occurs and the date on which it is registered. Hence, a file containing records for all deaths *registered* during a given period (for example, during the calendar year 2011) will include the deaths that occurred in that period and had been registered by the end of the period, and will not include deaths that occurred in the period (or in an earlier period) but were registered later. Most of these are deaths that occurred in the few months before the end of the latest registration year, plus a small number of deaths that occurred earlier than that.

The extent of late reporting of suicide deaths was examined in available data by calculating the proportion of suicide deaths registered by several durations after the end of the financial year in which each death had occurred. More than 99% had been registered within 6 months, but a small number of cases were registered later, sometimes by many years. These findings suggest that date-of-death reporting restricted to suicide deaths with a date of occurrence at least 6 months before the last date of registration covered by data to hand will result in less than 1% under ascertainment.

The data files available for use in this analysis include deaths registered by the end of 2011. It can be anticipated that the deaths that had occurred by that date but had not yet been registered were mostly ones that occurred late in 2011, plus a small number of deaths that occurred earlier than that. In order to minimise the effect on rates of the lack of data on deaths which had occurred, but not been registered, by the end of 2011, the long term trend charts in Chapters 3 to 8 of this report do not provide estimates for deaths occurring in 2011. Likewise, the charts in Chapters 9 and 10, in which the time axis is organised by financial year of death, do not present data on deaths that occurred in the second half of 2011.

## Late-registered deaths

An initiative of the Queensland Registrar of Births Deaths and Marriages resulted in the registration in November 2010 of 374 previously unregistered deaths, which had occurred between 1992 and 2006 (a date of death was unknown for a few). Of these, around three-quarters (284) were deaths of Aboriginal and Torres Strait Islander Australians. If Aboriginal and Torres Strait Islander mortality data are presented by year of death registration, the late-registered cases produce a large peak in 2010. The ABS developed an adjustment method to minimise the impact of the late registered cases on indicators in which data on mortality of Aboriginal and Torres Strait Islander Australians are presented by year of registration.

In this report, data on mortality of Aboriginal and Torres Strait Islander Australians are presented by year of death, not by year of registration, and so the late-registered Queensland deaths do not produce a peak. Rather, each late-registered case contributes in an appropriate way to the count for the period in which the death occurred. Accordingly, the adjustment

method has not been applied. For further information please refer to Technical note 3 in Causes of death, Australia, 2010 (ABS cat. no. 3303.0).

## Data quality

The reliability of information about cause of death depends on the reliability of ICD codes provided by the ABS. This depends largely on the adequacy of the information provided to the ABS through Registrars of Births, Deaths and Marriages, and originating from coroners and medical practitioners. Little published information is available on the quality of the data resulting from this process, particularly as it applies to injury deaths. Centralisation of mortality coding in the Brisbane office of the ABS since the mid-1990s has reduced the potential for variation due to local differences in coding practice. However, factors affecting information recording, provision, or coding could affect data in different ways for different jurisdictions, periods or population groups. Hence, apparent differences should be interpreted with caution.

The data quality statements underpinning the National Mortality Database can be found in quality declaration summaries in the following ABS catalogues:
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/3303.0/>
<http://www.abs.gov.au/ausstats/abs@.nsf/mf/3302.0>.

## Birth cohort analysis

Rates by age at death and period of death were calculated for birth cohorts. Cohorts were defined and named in accordance with the Statistician's Report on the 2006 Census (ABS 2009b), with the exception that those born in the decade 1975 to 1984 are distinguished from those born in the following decade, because the suicide data differ between these groups. The periods of birth of the cohorts and the terms used to refer to them are given in Table A1.2.

**Table A1.2: Birth cohorts**

| Period of birth | Title |
|---|---|
| 1886 to 1905 | Hard-timers |
| 1906 to 1925 | Frugal generation |
| 1926 to 1945 | Lucky generation |
| 1946 to 1965 | Baby boomers |
| 1966 to 1975 | Gen X |
| 1976 to 1985 | Gen Y |
| 1986 to 1994 | iGen |

*Source:* (ABS 2009).

As is usually necessary when using vital data, cohort-specific estimates were derived from period-specific values. Cohort-specific case numbers were derived from unit record cause-of-death data for ABS reference years 1964 and later, and from published annual summary tables for earlier periods. Cohort population data were derived from ABS tables of population by sex and single year of age from 1971 onwards and for earlier years from tables of population by sex and age in 5 year bands to 85 and older, distributions of ages within tabulated bands being derived from the nearest population census.

Deaths data and population data were organised into a form suitable for calculating rates in birth cohorts by use of the procedure –poprisktime– for Stata/SE 13 (Rutherford et al. 2010; StataCorp 2013).

Age- and sex-specific rates per 100,000 person-years population risk time were calculated. Since the source data for the older period were not available by single year of age, rates estimated on the basis of these data are restricted to cohorts with wide periods of birth (20 years) and age bands at least 5 years wide.

# Hospital separations data

## Data sources

The data on hospital separations were provided by the Australian Institute of Health and Welfare (AIHW), from the National Hospital Morbidity Database (NHMD). Nearly all injury cases admitted to hospitals in Australia are thought to be included in the NHMD data reported.

Diagnoses and external cause injury and poisoning were recorded using the *International statistical classification of diseases and related health problems, 10th revision, Australia modification* (ICD-10-AM). The first edition of the ICD-10-AM was applied nationally for episodes in hospital that ended on or after 1 July 1998, and a new edition was introduced on 1 July of the even-numbered years thereafter during the period covered by this report.

## Definitions

The *principal diagnosis* is the diagnosis established after study to be chiefly responsible for occasioning the patient's episode of admitted patient care (AIHW 2012a).

An *external cause* is defined as the environmental event, circumstance or condition that was the cause of injury or poisoning. Whenever a patient has a principal or additional diagnosis of an injury or poisoning, an external cause code should be recorded.

A *separation* is defined as a process by which an episode of care for an admitted patient ceases. A separation may be formal or statistical (AIHW 2012b).

## Selection criteria

### Period

This report is restricted to admitted patient episodes that ended in the period 1 July 1999 to 31 July 2012. Selection was based on the financial year of separation.

### Case definition

Records that satisfied the following criteria were included in the report:

- A 'Principal diagnosis' in the ICD-10-AM range (S00-T75, T79).
- The first encountered 'valid' external cause code in the record in the ICD-10-AM range (X60–X84) (that is, Intentional self-harm). 'Valid' means any code in the ICD-10-AM range (V00-Y89).
- Mode of admission field has any value except the one indicating that the transfer from another acute-care hospital occurred.

## Estimating incident cases

Each record in the NHMD refers to a single episode of care in a hospital. Some injuries result in more than 1 episode in hospital and, hence, more than 1 NHMD record. This can occur in 2 main ways:

- a person is admitted to one hospital, then transferred to another or has a change in care type (for example, acute to rehabilitation) within the one hospital.
- a person has an episode of care in hospital, is discharged home (or to another place of residence) and is then admitted for further treatment for the same injury, to the same hospital or another one.

The NHMD does not include information designed to enable the set of records belonging to an injury case to be recognised as such. Hence, there is potential for some incident injury cases to be counted more than once if a single incident injury case results in 2 or more NHMD records being generated, all of which satisfy the selection criteria being used.

Information in the NHMD enables this problem to be reduced, though not eliminated. The approach used for this report makes use of the *Mode of admission* variable, which indicates whether the current episode began with inward transfer from another acute care hospital. Episodes of this type (inward transfers) are likely to have been preceded by another episode that also met the case selection criteria for injury cases, so are omitted from our estimated case counts.

This procedure should largely correct for over-estimation of cases that is due to transfers, but will not correct for over-estimation that is due to readmissions.

## Indigenous hospitalisations

Rates of hospitalization due to intentional self-harm of Aboriginal and Torres Strait Islander people are provided in this report for the period from 1999–00 to 2010–12. Data from 4 jurisdictions (Queensland, Western Australia, South Australia and the Northern Territory) were presented for the period 1999–00 to 2011–12 and data for those jurisdictions plus New South Wales were presented for the period from 2007–08. These criteria were designed to match those used in Chapter 10. It should be noted that the most recent AIHW Indigenous hospital data quality report concluded that hospital data are suitable for reporting for years commencing 2004–05 for all jurisdictions except Tasmania and the Australian Capital Territory, and for all 8 jurisdictions from 2010-11 (AIHW 2013).

Figure 13.3 in this report presents suicide rates for *Indigenous Australians* and for *Other Australians*. '*Other Australians*' includes cases where the person's indigenous status is described as 'non-Indigenous' and those where indigenous status was not-stated or unknown. Current standard practice in AIHW reports is to omit cases where indigenous status was not-stated or unknown.

# Data quality statement: National Hospital Morbidity Database

This section provides a summary of key issues relevant to interpretation of the National Hospital Morbidity Database (NHMD). Further information on the quality of the data for earlier years is available in relevant editions of the AIHW's *Australian hospital statistics*.

The full AIHW Data Quality Statement for the NHMD is accessible at:

<http://meteor.aihw.gov.au/content/index.phtml/itemId/511338>.

## Summary of key issues

- The National Hospital Morbidity Database (NHMD) is a comprehensive data set that has records for all separations of admitted patients from essentially all public and private hospitals in Australia.
- For 2010–11, almost all public hospitals provided data for the NHMD. The exception was a mothercraft hospital in the ACT. The great majority of private hospitals also provided data, the exceptions being the private day hospital facilities in the ACT, the single private free-standing day hospital facility in the NT, and a small private hospital in Victoria. Coverage was similar for earlier years, with some more variation in the private sector, which is not expected to impact substantially on the statistics in this report.
- A record is included for each separation, not for each patient, so patients who separated more than once in the year have more than 1 record in the NHMD.
- The NHMD contains records from 1993–94 to 2010–11. For each reference year, the NHMD includes records for admitted patient separations between 1 July and 30 June.
- The data reported for 2010–11 are broadly consistent with data reported for the NHMD for previous years.
- Although there are national standards for data on admitted patient care, and while the NHMD is a valuable source of information on admitted patient care, the data have limitations. For example, variations in admission practices and policies lead to variation among providers in the number of admissions for some conditions and there is apparent variation between states and territories in the use of statistical discharges and associated assignment of care types.
- States and territories are primarily responsible for the quality of the data they provide. However, the AIHW undertakes extensive validations on receipt of data. Data are checked for valid values, logical consistency and historical consistency. Where possible, data in individual data sets are checked with data from other data sets. Potential errors are queried with jurisdictions, and corrections and resubmissions may be made in response to these edit queries. The AIHW does not adjust data to account for possible data errors or missing or incorrect values, except as stated.
- For 2010–11, principal diagnosis information was not provided for 882 public hospital separations and 3,306 private hospital separations.
- Caution should be used in comparing diagnosis, procedure and external cause data over time, as the ICD-10-AM and ACHI classifications and coding standards used for those data can change over time.
- Not all states provided information on the area of usual residence of the patient in the form of a Statistical Local Area (SLA) code for all presentations. In addition, not all states and territories provided the version of SLA specified in the NMDS. Where necessary, the AIHW mapped the supplied area of residence data for each presentation to the same SLA and to remoteness area categories based on the ABS ASGC Remoteness Structure for 2006. This mapping was done on a probabilistic basis. Because of the probabilistic nature of the mapping, the SLA and remoteness areas data for individual records may not be accurate; however, the overall distribution of records by geographical area is considered useful.

- The NHMD does not include episodes of non-admitted patient care provided in outpatient clinics or emergency departments. Patients in these settings may be admitted subsequently, in which case the care provided to them as admitted patients will be included in the NHMD.

# Rates

## Age-standardisation

Population-based rates were age-standardised except where they are age-specific. This adjustment allows for comparison without distortion due to differences between time periods, or between groups (such as males and females), in the proportion of people in the various age groups. Direct standardisation was used to adjust the rates, using the Australian population in 2001 as the standard (ABS 2003) and using 5-year age groups except for an oldest group of 85 years and older. Age-standardised rates were calculated in Stata version 12.1 statistical software using the
–dstdize– command (StataCorp 2013).

# Population denominators

## General population

In relation to charts or tables showing information by calendar year, all rates were calculated using, as the denominator, the final estimate of the estimated resident population as at 30 June in the relevant year (for example, 30 June 2006 for 2006 cases). For charts or tables showing information by financial year, all rates were calculated using, as the denominator, the final estimate of the estimated resident population as at 31 December for the relevant period (for example, 31 December 2006 for 2006–07 cases).

## Indigenous population

The population estimates used are from ABS 3238.0 as issued on 30 April 2014. These estimates are based on results of the 2011 Census of Population and Housing. Use of projections was not necessary because of the period covered by the case data in this report.

Rates for Indigenous Australians in this report are only reported by financial year. Hence, all rates were calculated using, as the denominator, the final estimate of the estimated resident Indigenous population as at 31 December for the relevant period (for example, 31 December 2006 for 2006–07 cases). Since estimates of resident Indigenous populations are only provided for 30 June, estimates for 31 December are calculated by adding 2 consecutive 30 June estimates and dividing by 2 (for example, estimate for 31 December 2006 is calculated by adding estimates for 30 June 2006 and 30 June 2007 and dividing by 2.)

Where comparisons in this report are made between *Indigenous Australians* and *Other Australians*, the estimated resident population for *Other Australians* is calculated by subtracting estimated resident Indigenous populations from the estimated resident Australian population for the relevant years.

## Classification of remoteness area

Australia can be divided into several regions based on their distance from urban centres. This is considered to determine the range and types of services available. In this report, remoteness area refers to the place of usual residence of the person who was admitted to hospital, assigned on the basis of the reported Statistical Local Area (SLA) of residence.

The remoteness areas were specified according to the ABS Australian Standard Geographical Classification (ASGC). Remoteness categories were defined in a manner based on the Accessibility/Remoteness Index of Australia (ARIA). According to this method, remoteness is an index applicable to any point in Australia, based on road distance from urban centres of 5 sizes. The reported areas are defined as the following ranges of the index:

*Major cities* (for example, Sydney, Geelong, Gold Coast), ARIA index 0 to 0.2

*Inner regional* (for example, Hobart, Ballarat, Coffs Harbour), ARIA index >0.2 and ≤2.4

*Outer regional* (for example, Darwin, Cairns, Coonabarabran), ARIA index >2.4 and ≤5.92

*Remote* (for example, Alice Springs, Broome, Strahan), ARIA index of >5.92 and ≤10.53

*Very remote* (for example, Coober Pedy, Longreach, Exmouth), ARIA index >10.53.

Most SLAs lie entirely within 1 of the 5 areas. If this was so for all SLAs, then each record could simply be assigned to the area in which its SLA lies. However, some SLAs overlap 2 or more of the areas. Records with these SLAs were assigned to remoteness areas in proportion to the area-specific distribution of the resident population of the SLA according to the 2006 census. Each record in the set having a particular SLA code was randomly assigned to one or other of the remoteness areas present in it, in proportion to the resident population of that SLA.

# Confidentiality and reliability of data

The AIHW operates under a strict privacy regime which has its basis in Section 29 of the *Australian Institute of Health and Welfare Act 1987* (the AIHW Act) and the *Privacy Act 1988* (the Privacy Act).

Section 29 of the AIHW Act requires that confidentiality of data relating to persons (living and deceased) and organisations be maintained. The Privacy Act governs confidentiality of information about living individuals.

As well as the protection offered by AIHW Act and the Privacy Act, personal information held by the AIHW is covered by a range of other Commonwealth, state and territory legislation.

The AIHW is committed to reporting that maximises the value of information released for users, while being statistically reliable and meeting legislative requirements described above. To ensure the confidentiality of its data, the AIHW has a range of policies, protocols and processes in place—the AIHW policy on reporting to manage confidentiality and reliability (the AIHW *Confidentiality policy*) is one important example, as it deals with how data should be reported to ensure confidentiality.

## AIHW Confidentiality Policy, a summary

The AIHW *Confidentiality policy* contains 7 guidelines to assist those working with data to apply it to their outputs.

### Guideline 1

It is AIHW policy that if the data being considered have already been released publicly at the granularity AIHW intends to release, further confidentialisation is not required.

### Guideline 2

Cells in tables where the value of the cell is the same as a row/column/wafer total (that is, all other cells in the row, column or wafer are zero) generally lead to disclosure of an additional attribute. It is AIHW policy that these cells need to be confidentialised unless the attribute that would be disclosed is deemed to be non-sensitive in the context of the data being published.

### Guideline 3

It is AIHW policy that data on organisations must be confidentialised if 1 organisation contributes more than 85% of the total, or 2 organisations more than 90%, unless the attribute that would be disclosed is deemed to be non-sensitive in the context of the data being published or the organisation(s) have given consent to release.

### Guideline 4

It is AIHW policy that guidelines 2 and 3 need to be applied so as to ensure that attribute confidentiality is maintained within tables and across tables within the same release. That is, when assessing whether a cell needs to be confidentialised, consideration needs to be given as to whether there are other cells in that table, or other tables in the release, which may require consequential confidentialisation.

### Guideline 5

Rates, averages and other statistics based on denominators of less than 100 are usually not reliable and it is AIHW policy that they should generally not be reported.

### Guideline 6

It is AIHW policy that if data suppliers or clients require additional suppression rules be applied to an AIHW release in order to manage confidentiality or reliability, then these should be applied. Where such additional rules are applied they should be described in the release, and it should be noted that this approach is required by the data supplier.

### Guideline 7

It is AIHW policy that, if a client wishes to be provided with data output (for example, tables) at a more detailed level than any of the above guidelines would allow, then they may apply to be provided output against which some or all of the above guidelines are not applied. Provision of this more detailed output would be subject to the client signing a confidentiality undertaking and agreeing that any publication of information (including in online data cubes) based on output released to them will comply with this policy.

# Errors, inconsistencies and uncertainties

Due to rounding, the sum of the percentages in tables may not equal 100%.

NHMD data are generally abstracted from records, entered and coded in hospitals, passed to state and territory health departments, then to the AIHW before being provided to the National Injury Surveillance Unit (NISU). Processing occurs at each of these steps. Errors and inconsistencies can arise due to the large number of people and processes involved in providing the data. Some variations occur in reporting and coding although coding standards, national minimum data sets and other mechanisms have reduced this.

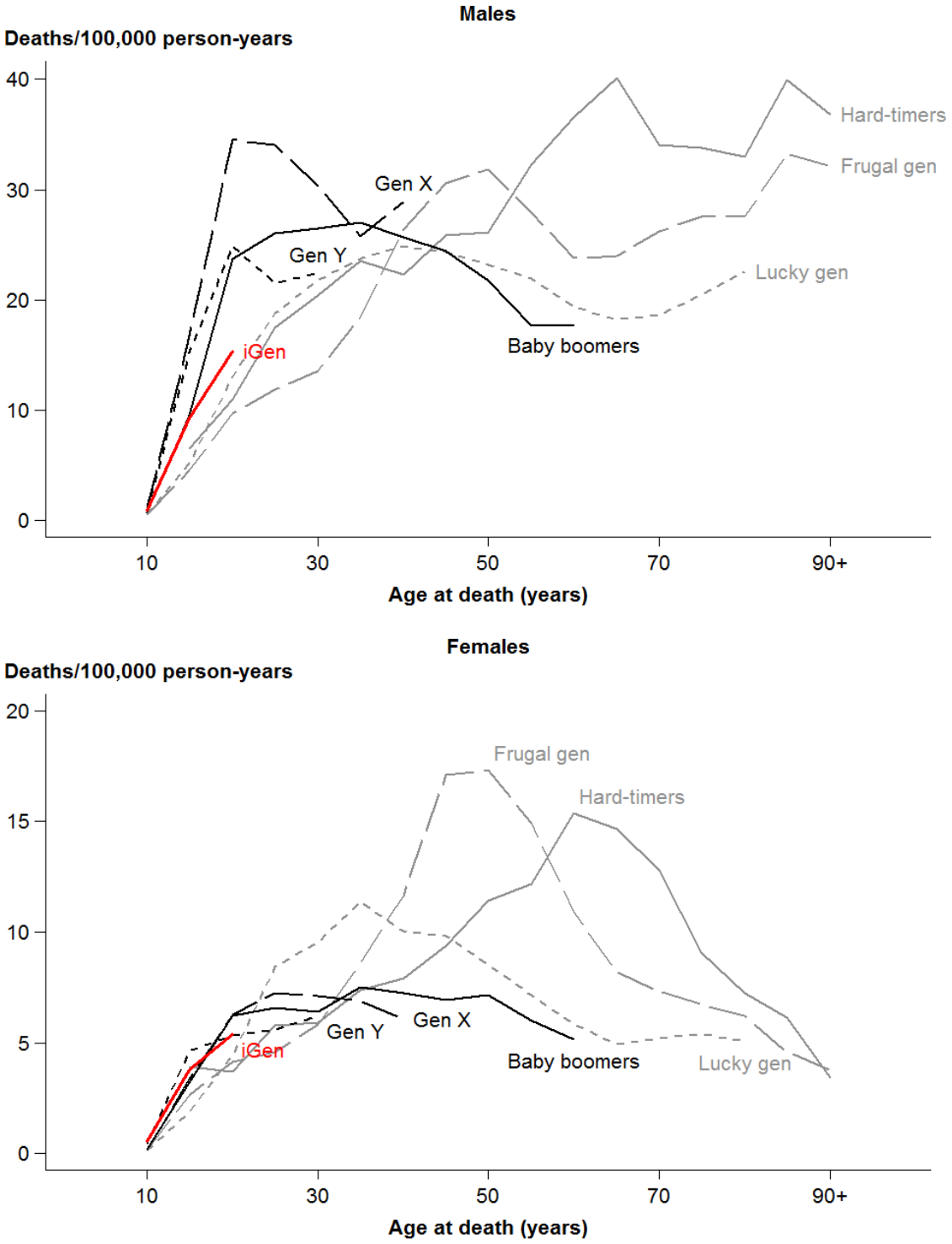
# Appendix 2: Birth cohort analyses

This appendix provides charts showing population-based suicide rates by birth cohort, sex and mechanism of suicide (Figures A2.1 to A2.12). Charts are provided for suicide by all mechanisms and for cases with the mechanisms hanging, firearms, poisoning by gas, and poisoning by other substances.

The charts present the data in two ways. In the first type, the lines for each birth cohort are aligned according to age at death, which tends to reveal age-related aspects of suicide. In the second type, the lines are aligned according to period of death, which tends to reveal effects of factors which change over time.

In both types of charts, the data are presented as rates calculated as cases per 100,000 person-years. Person-years is an estimate of the number of years lived by members of the birth cohort for which a rate is calculated while they were in the age-range for which the rate is calculated or, equivalently, during the period to which a rate refers. See also Birth cohort analysis in Appendix 1. Some of the charts presented in this appendix also appear in the body of the report, mostly with modifications to improve readability. The modifications are omission of some series with small case numbers, and the combination of adjacent birth cohorts into a wider cohort when they had similar trends. The full versions of the charts are presented in this appendix.

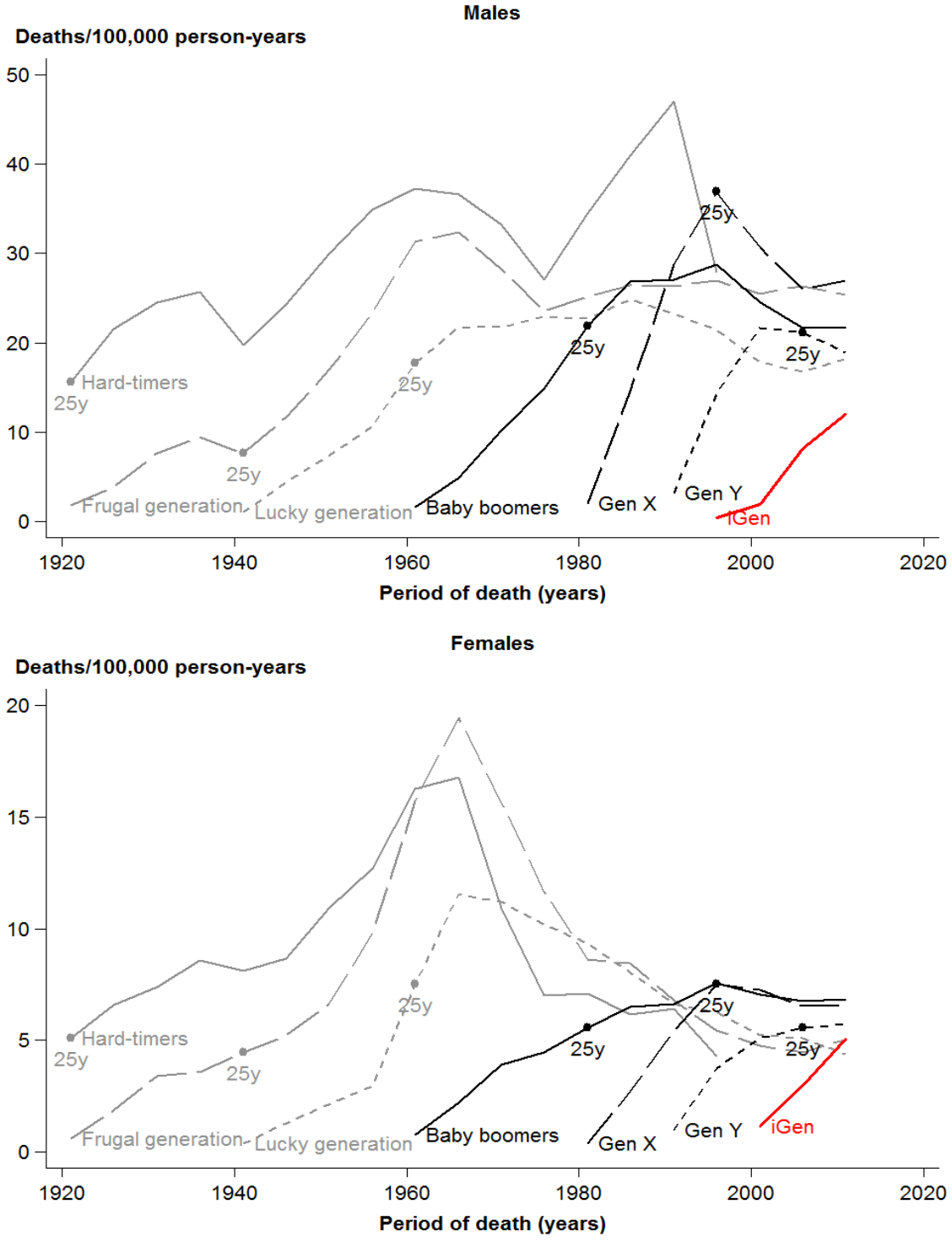
The modifications are as follows. Figure 4.4 has been simplified when compared to the corresponding figure in the appendix (Figure A2.3) by combining 3 birth cohorts (Hard-timers, Frugal generation and Lucky generation). For Figure 5.4, the female series for the Hard-timers cohort has been dropped when compared to the corresponding figure in the appendix (Figure A2.6), due to low case-numbers. For Figures 6.4 and 7.4, the female series for the iGen cohort has been dropped from the corresponding figures in the appendix (A2.8 and A2.10), again due to low case numbers.




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

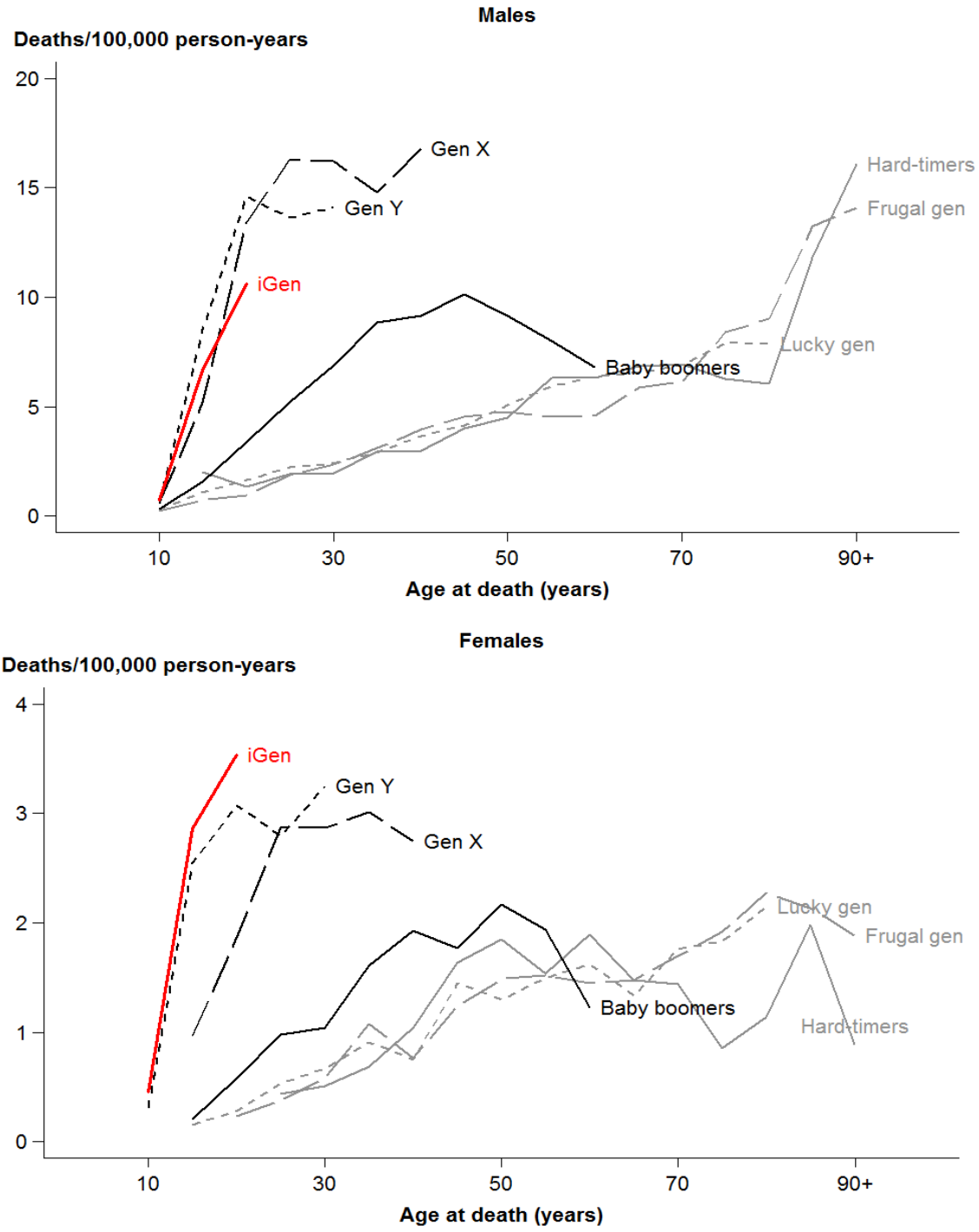
**Figure A2.1: Male and female rates of suicide, by period of birth and age at death, Australia, 1921 to 2010**




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

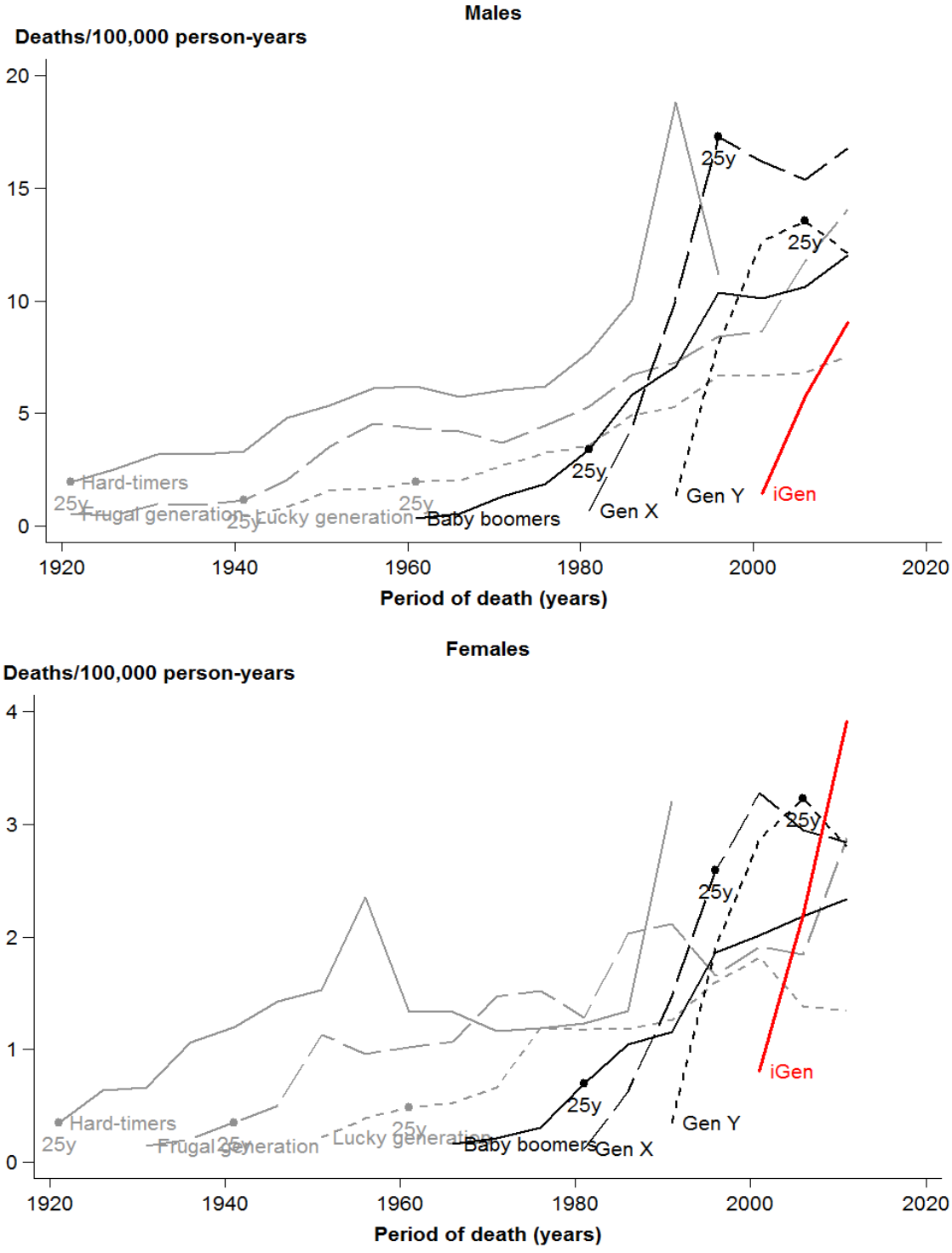
**Figure A2.2: Male and female rates of suicide, by period of birth, age at death and period of death, Australia, 1921 to 2010**




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

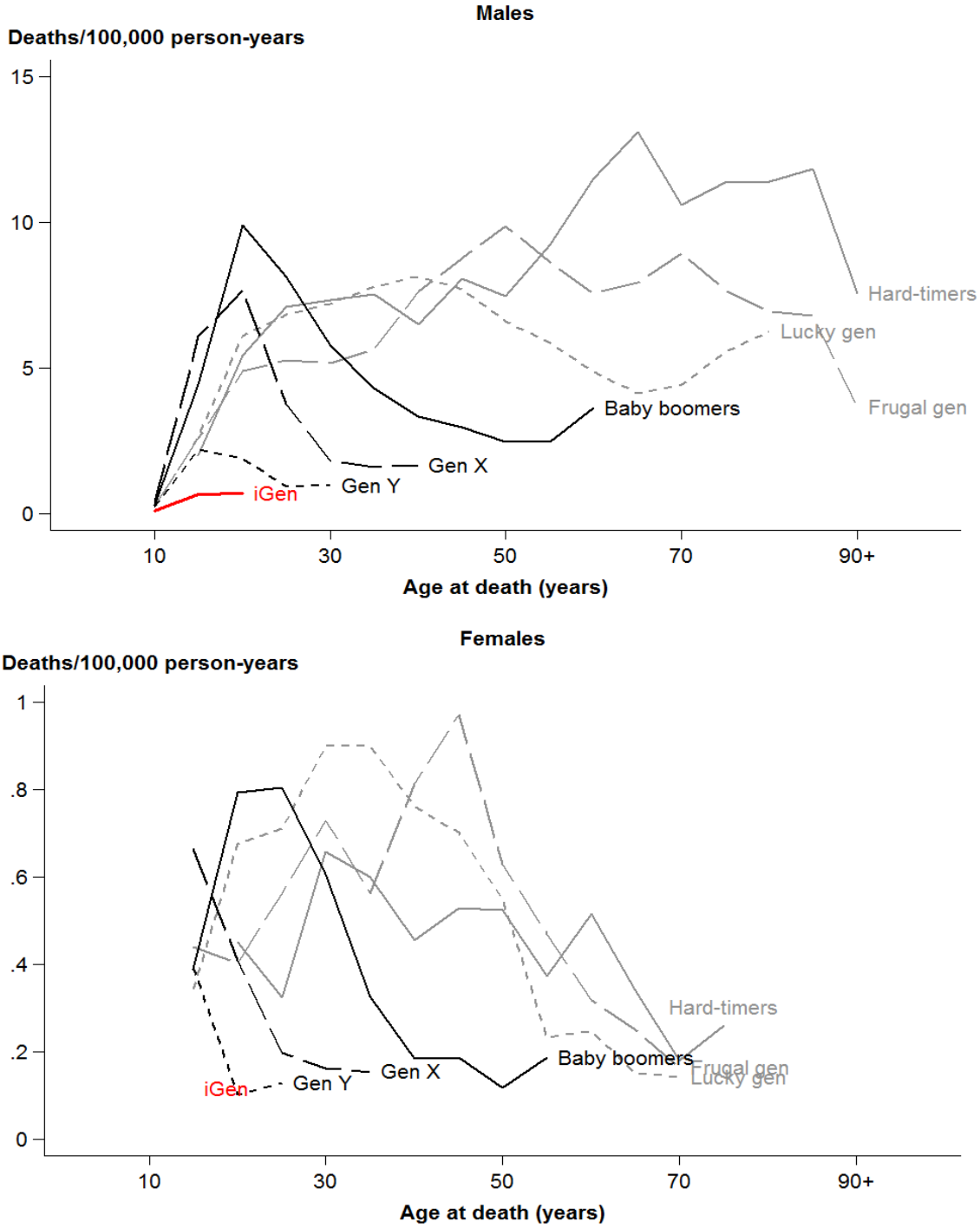
**Figure A2.3: Male and female rates of suicide by hanging, by period of birth and age at death, Australia, 1921 to 2010**




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

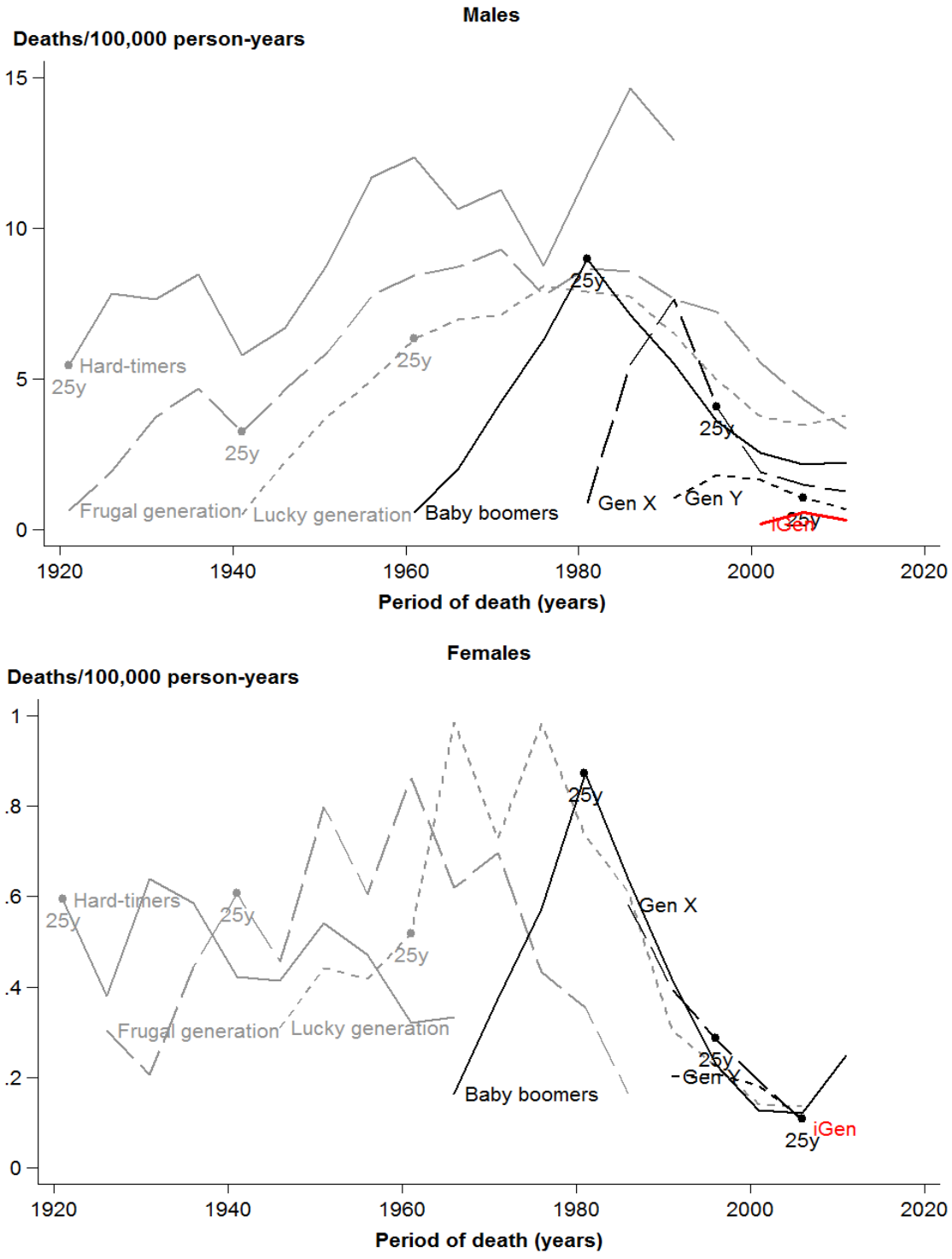
**Figure A2.4: Male and female rates of suicide by hanging, by period of birth, age at death and period of death, Australia, 1921 to 2010**




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

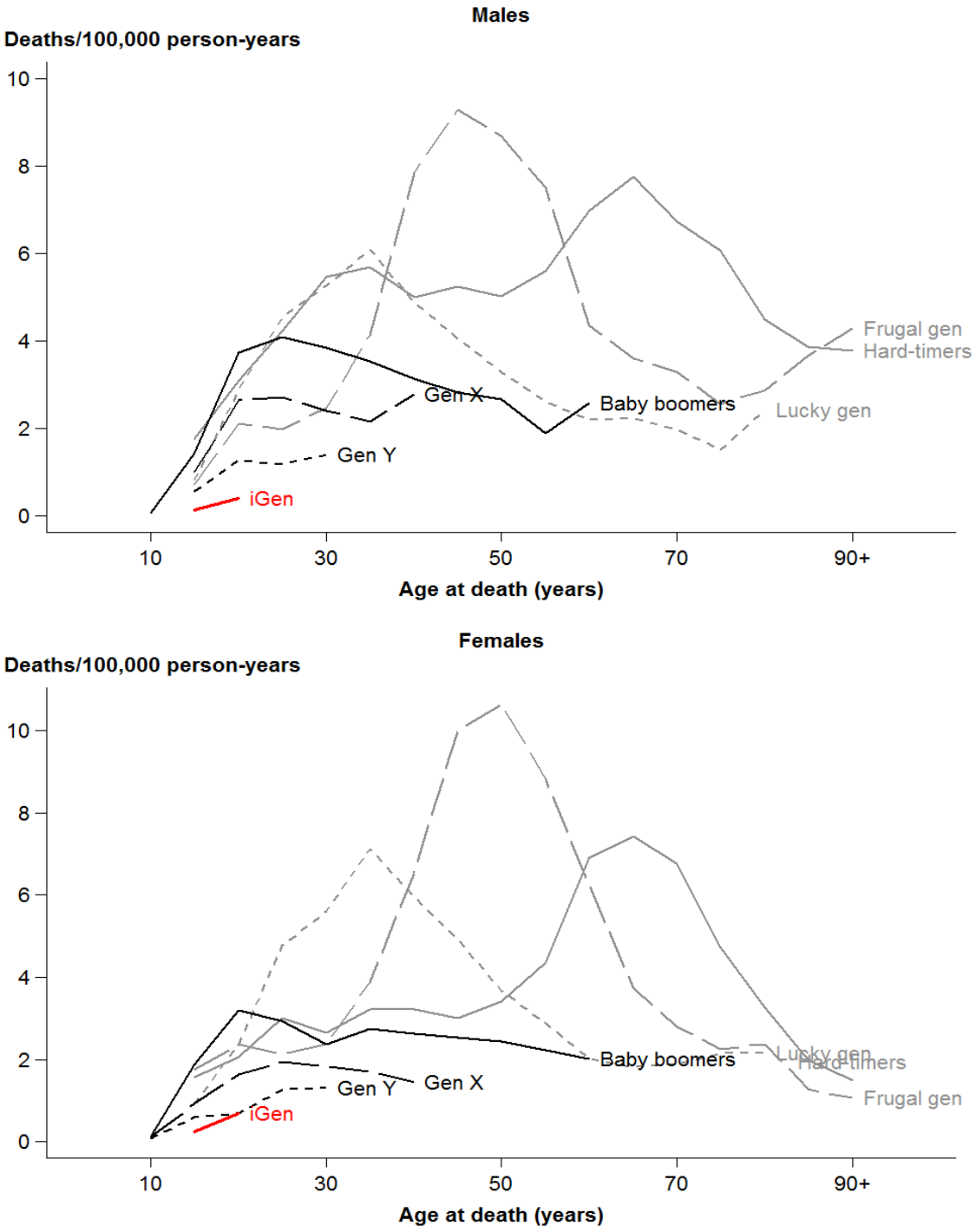
**Figure A2.5: Male and female rates of suicide by firearms, by period of birth and age at death, Australia, 1921 to 2010**




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

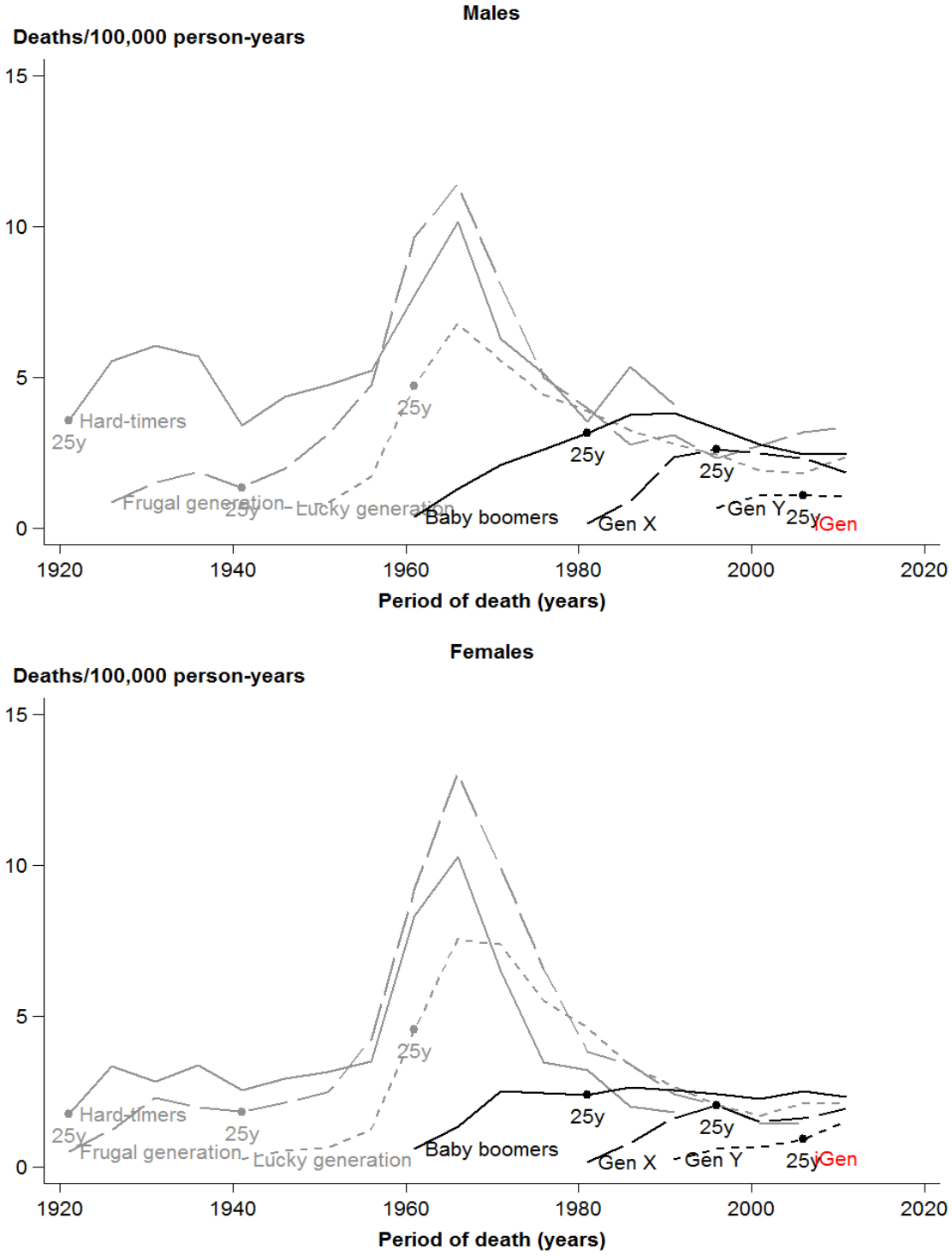
**Figure A2.6: Male and female rates of suicide by firearms, by period of birth, age at death and period of death, Australia, 1921 to 2010**




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

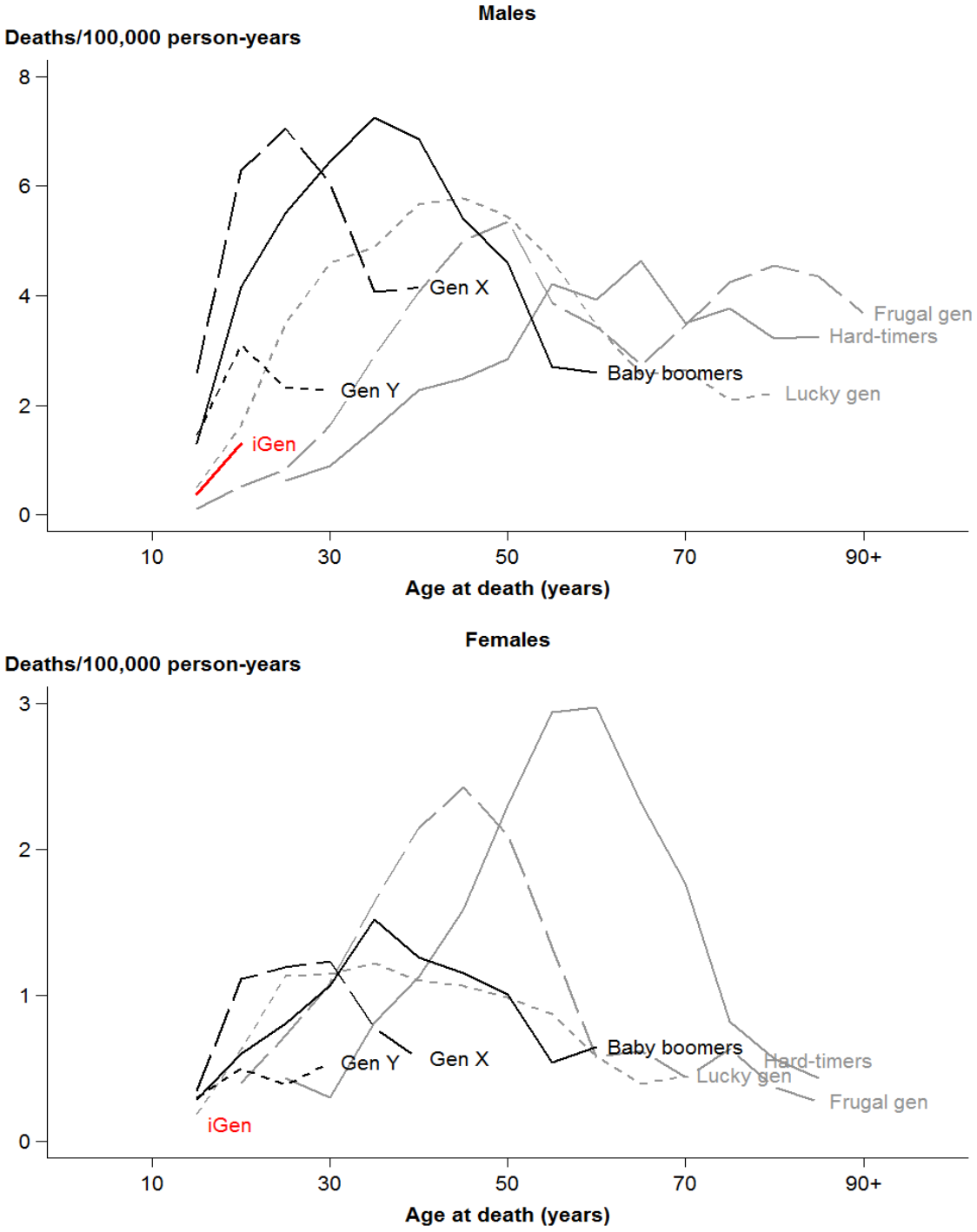
**Figure A2.7: Male and female rates of suicide by poisons (except gas), by period of birth and age at death, Australia, 1921 to 2010**




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

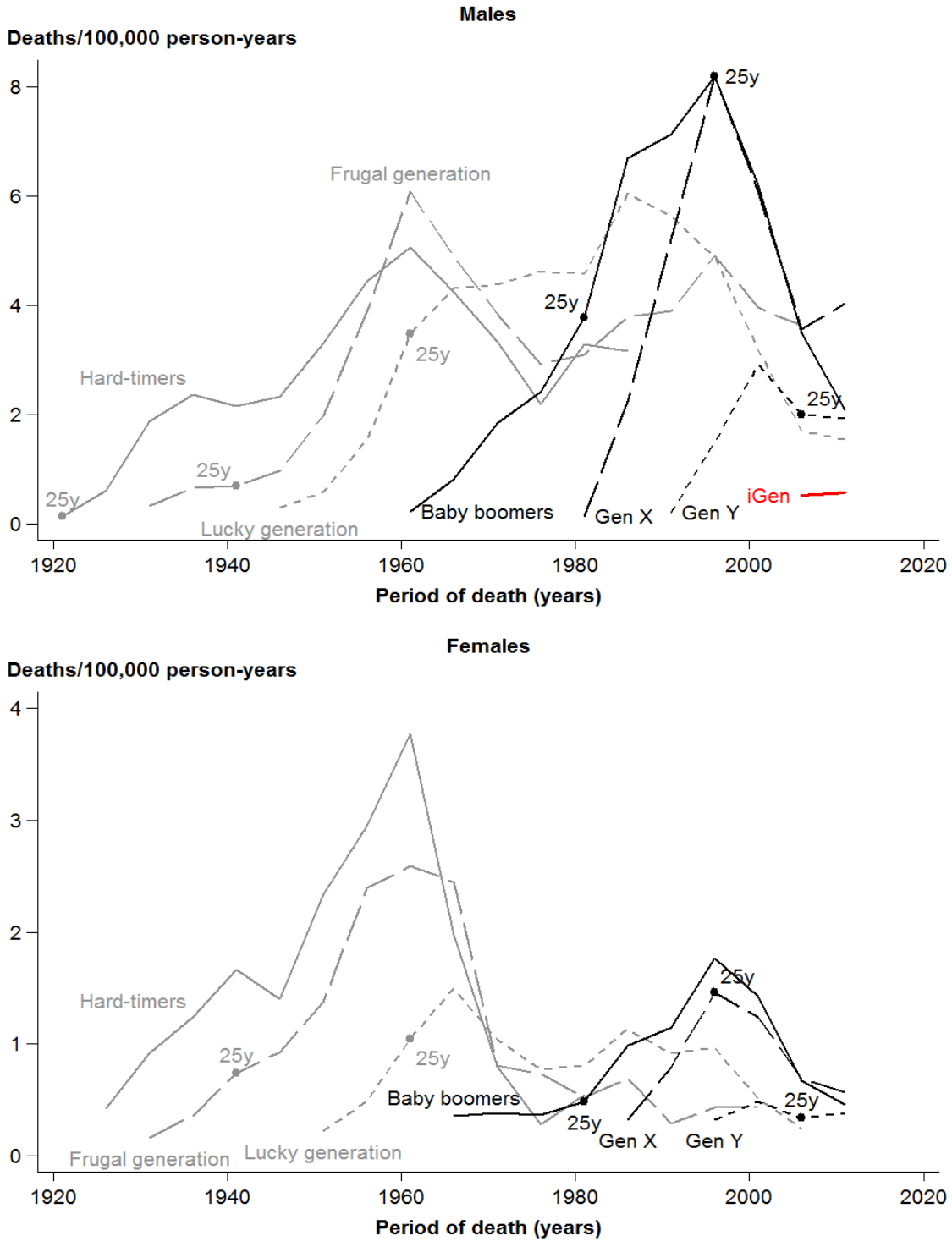
**Figure A2.8: Male and female rates of suicide poisons (except gas), by period of birth, age at death and period of death, Australia, 1921 to 2010**




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

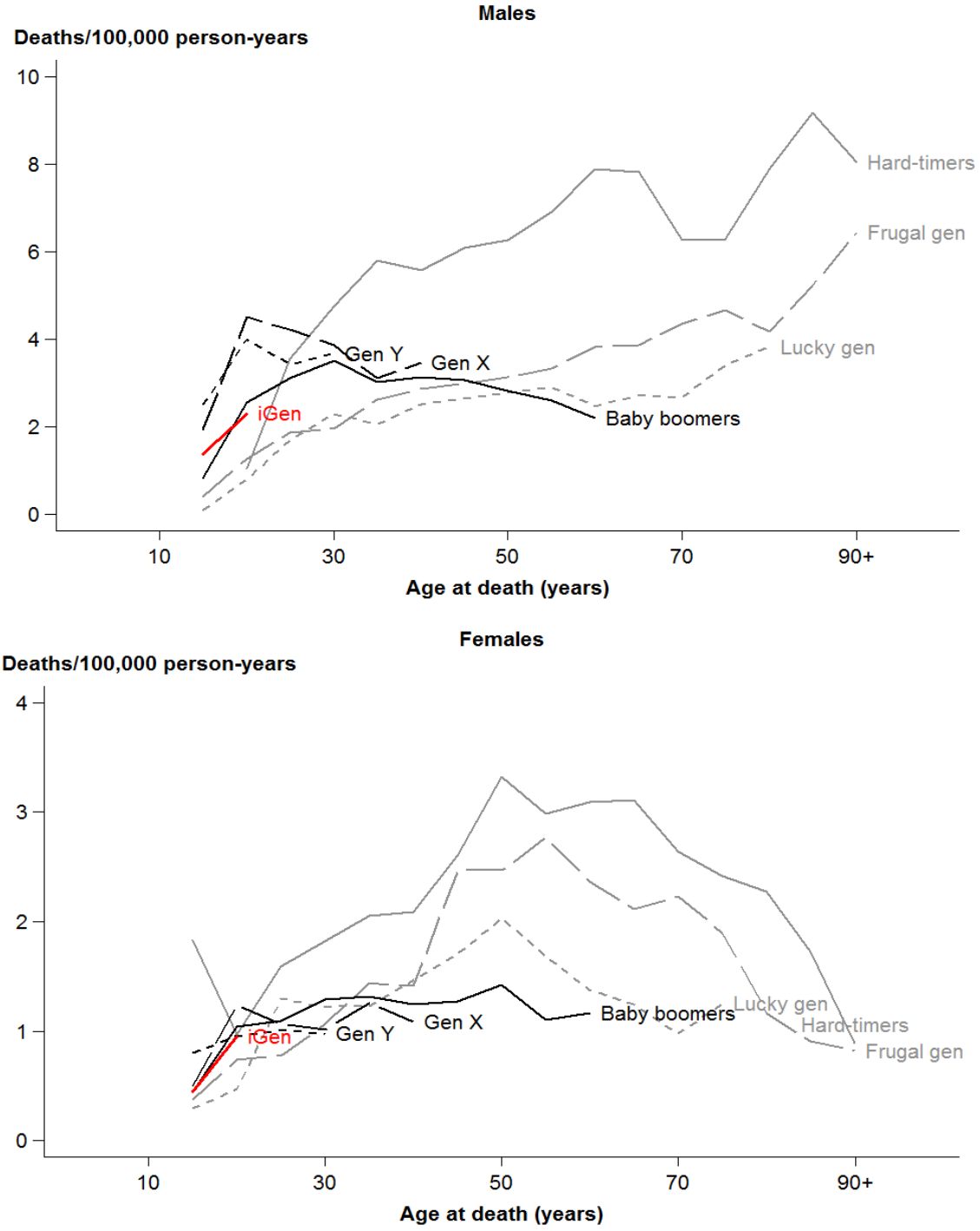
**Figure A2.9: Male and female rates of suicide by gas, by period of birth and age at death, Australia, 1921 to 2010**




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

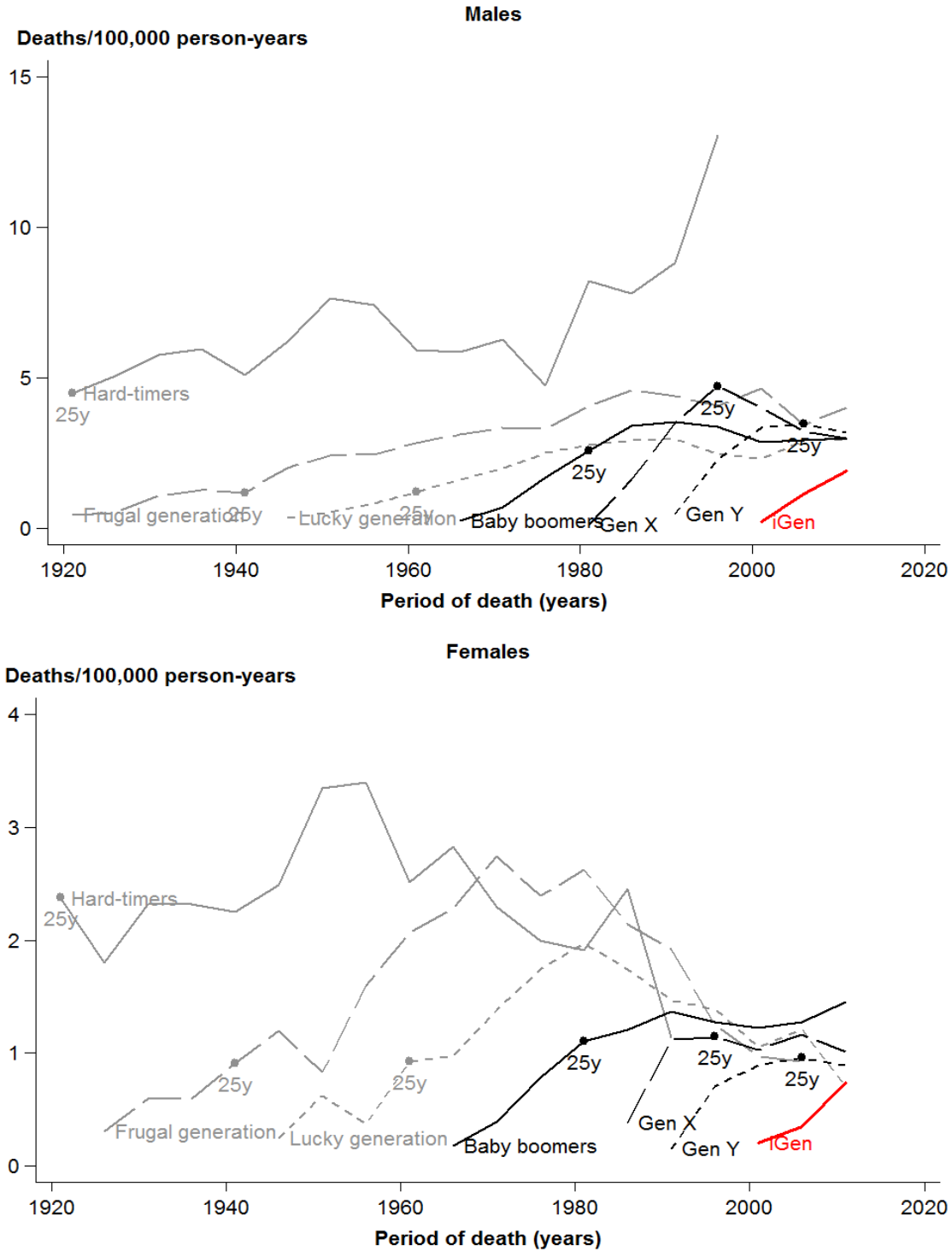
**Figure A2.10: Male and female rates of suicide by gas, by period of birth, age at death and period of death, Australia, 1921 to 2010**




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure A2.11: Male and female rates of suicide by other mechanisms, by period of birth and age at death, Australia, 1921 to 2010**




*Note:* Terms for birth cohorts follow those provided by the ABS (2009): 'Hard-timers' (those born between 1886 and 1905); the 'Frugal generation' (1906–1925); the 'Lucky generation' (1926–1945); 'Baby boomers' (1946–1965); 'Gen X' (1966–1975); 'Gen Y' (1976–1985) ; and 'iGen' (1986–1995).

*Source:* AIHW National Mortality Database and GRIM Books.

**Figure A2.12: Male and female rates of suicide by other mechanisms, by period of birth, age at death and period of death, Australia, 1921 to 2010**

# Appendix 3: State and territory of residence

This appendix provides a brief overview of trends in suicide rates by state or territory of residence for deaths occurring between 1979–80 to 2010–11. Calculation of rates are limited to this period because information on state and territory of residence was not available for deaths registered prior to 1979.

Rates are provided for all mechanisms of death and separately for deaths involving hanging; firearms; exposure to poisons other than gas; and exposure to gas.

# All mechanisms

There was an apparent decline in suicide rates for most jurisdictions and for Australia overall between 1979–80 and 2010–11 (Table A3.1). The Northern Territory was the only jurisdiction to experience an apparent increase of rates over this period.

**Table A3.1: Suicide rates, by state and territory of residence, 1979–80 to 2010–11**

| | State and territory of residence | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year of death | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Australia |
| 1979–80 | 11.8 | 11.9 | 14.0 | 11.9 | 14.2 | 13.0 | 8.2 | 16.7 | 12.5 |
| 1980–81 | 10.2 | 12.0 | 15.8 | 10.1 | 12.7 | 14.5 | 8.5 | 8.2 | 11.8 |
| 1981–82 | 11.5 | 12.3 | 12.6 | 13.8 | 13.5 | 16.3 | 9.0 | 10.4 | 12.4 |
| 1982–83 | 11.8 | 13.0 | 13.0 | 11.0 | 12.4 | 16.2 | 11.0 | 14.7 | 12.4 |
| 1983–84 | 10.0 | 12.4 | 12.7 | 14.0 | 10.0 | 15.0 | 17.1 | 6.6 | 11.6 |
| 1984–85 | 11.5 | 11.7 | 13.6 | 12.9 | 10.9 | 12.9 | 11.9 | 20.2 | 12.0 |
| 1985–86 | 11.6 | 12.6 | 16.4 | 12.9 | 13.0 | 16.6 | 14.2 | 11.4 | 13.1 |
| 1986–87 | 11.3 | 13.7 | 15.8 | 12.7 | 12.0 | 15.6 | 13.6 | 10.5 | 13.0 |
| 1987–88 | 13.5 | 13.1 | 16.1 | 15.0 | 13.8 | 17.5 | 12.8 | 11.8 | 14.1 |
| 1988–89 | 12.3 | 12.4 | 15.2 | 12.3 | 15.0 | 14.1 | 11.6 | 27.2 | 13.1 |
| 1989–90 | 11.5 | 11.2 | 15.7 | 12.3 | 13.1 | 13.2 | 11.1 | 13.8 | 12.4 |
| 1990–91 | 12.7 | 12.5 | 13.7 | 13.5 | 15.1 | 17.8 | 15.8 | 14.3 | 13.3 |
| 1991–92 | 12.4 | 12.7 | 15.5 | 13.4 | 14.9 | 16.3 | 11.5 | 16.3 | 13.4 |
| 1992–93 | 12.3 | 11.2 | 12.6 | 12.8 | 12.5 | 18.8 | 9.9 | 12.2 | 12.3 |
| 1993–94 | 12.4 | 11.2 | 13.5 | 14.4 | 12.2 | 17.5 | 9.5 | 15.4 | 12.6 |
| 1994–95 | 12.4 | 11.8 | 15.3 | 11.8 | 11.8 | 12.8 | 9.8 | 14.8 | 12.6 |
| 1995–96 | 13.3 | 11.6 | 15.8 | 12.4 | 12.8 | 16.2 | 13.8 | 19.7 | 13.3 |
| 1996–97 | 13.1 | 11.8 | 15.2 | 13.3 | 13.2 | 12.4 | 10.2 | 21.5 | 13.2 |
| 1997–98 | 15.5 | 13.4 | 17.1 | 15.7 | 14.8 | 10.6 | 13.2 | 19.4 | 15.1 |
| 1998–99 | 12.9 | 12.6 | 13.9 | 13.0 | 16.1 | 15.1 | 10.9 | 17.4 | 13.3 |
| 1999–00 | 12.9 | 10.6 | 16.1 | 14.1 | 12.4 | 15.1 | 13.4 | 21.2 | 13.2 |
| 2000–01 | 10.9 | 11.5 | 15.1 | 13.9 | 13.8 | 13.4 | 12.2 | 18.3 | 12.5 |
| 2001–02 | 11.5 | 10.5 | 13.9 | 13.4 | 12.3 | 13.1 | 12.5 | 26.5 | 12.2 |
| 2002–03 | 10.4 | 11.3 | 12.0 | 12.6 | 12.5 | 15.2 | 9.3 | 24.4 | 11.5 |
| 2003–04 | 8.6 | 10.7 | 13.5 | 10.6 | 12.3 | 17.0 | 9.9 | 25.2 | 10.9 |
| 2004–05 | 8.2 | 9.6 | 11.5 | 9.7 | 12.7 | 16.3 | 8.0 | 25.0 | 10.0 |
| 2005–06 | 8.5 | 10.0 | 12.1 | 11.0 | 11.7 | 13.3 | 8.0 | 14.9 | 10.2 |
| 2006–07 | 8.4 | 10.2 | 12.0 | 12.3 | 12.7 | 15.2 | 9.7 | 20.3 | 10.6 |
| 2007–08 | 8.7 | 9.4 | 11.8 | 13.5 | 11.2 | 13.7 | 7.6 | 27.1 | 10.4 |
| 2008–09 | 8.9 | 10.5 | 12.8 | 12.4 | 12.0 | 14.6 | 10.4 | 16.0 | 10.9 |
| 2009–10 | 8.7 | 9.6 | 12.3 | 12.0 | 11.2 | 13.1 | 11.4 | 19.5 | 10.4 |
| 2010–11 | 7.8 | 8.6 | 12.7 | 13.6 | 12.1 | 14.1 | 9.0 | 18.1 | 10.2 |

*Source:* AIHW National Mortality Database.

# Hanging

Suicide rates for most jurisdictions showed marked increases between 1979–80 and 2010–11 (Table A3.2).

**Table A3.2: Suicide rates for deaths due to hanging, by state and territory of residence, Australia, 1979–80 to 2010–11**

| | State and territory of residence | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year of death | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Australia |
| 1979–80 | 1.5 | 1.7 | 1.6 | 1.8 | 2.2 | 2.1 | n.p. | n.p. | 1.7 |
| 1980–81 | 1.8 | 1.6 | 2.2 | 2.1 | 2.1 | 2.0 | 0.0 | n.p. | 1.8 |
| 1981–82 | 1.8 | 2.1 | 1.6 | 3.2 | 2.3 | 3.3 | n.p. | n.p. | 2.0 |
| 1982–83 | 2.3 | 2.1 | 1.9 | 2.2 | 2.6 | 3.2 | n.p. | n.p. | 2.2 |
| 1983–84 | 1.8 | 2.4 | 2.3 | 2.4 | 2.1 | 2.8 | n.p. | n.p. | 2.1 |
| 1984–85 | 1.7 | 2.3 | 1.8 | 2.9 | 2.1 | 1.9 | n.p. | n.p. | 2.0 |
| 1985–86 | 2.0 | 2.6 | 2.3 | 1.9 | 2.7 | 2.4 | n.p. | n.p. | 2.3 |
| 1986–87 | 2.1 | 3.3 | 2.6 | 2.3 | 2.8 | 2.7 | 2.6 | n.p. | 2.6 |
| 1987–88 | 3.2 | 3.1 | 3.1 | 3.2 | 3.7 | 1.8 | 3.4 | n.p. | 3.2 |
| 1988–89 | 3.2 | 3.2 | 2.9 | 4.0 | 3.9 | 3.0 | 3.2 | 10.0 | 3.3 |
| 1989–90 | 3.1 | 3.0 | 3.4 | 3.2 | 4.5 | 1.5 | 2.9 | 4.5 | 3.2 |
| 1990–91 | 3.1 | 3.6 | 2.3 | 4.2 | 4.2 | 3.4 | 6.5 | 5.5 | 3.4 |
| 1991–92 | 2.8 | 3.2 | 3.8 | 4.1 | 4.3 | 3.3 | 3.2 | 6.0 | 3.4 |
| 1992–93 | 3.6 | 3.7 | 2.4 | 3.4 | 3.1 | 2.7 | n.p. | 5.3 | 3.3 |
| 1993–94 | 3.6 | 3.1 | 3.5 | 4.4 | 3.4 | 3.2 | 2.8 | n.p. | 3.5 |
| 1994–95 | 3.5 | 3.7 | 4.4 | 4.8 | 3.7 | 1.8 | 2.6 | 3.1 | 3.8 |
| 1995–96 | 4.0 | 3.1 | 4.7 | 4.9 | 4.2 | 4.8 | 4.8 | 8.4 | 4.1 |
| 1996–97 | 4.3 | 3.4 | 5.5 | 5.9 | 4.2 | 2.4 | 3.5 | 11.9 | 4.4 |
| 1997–98 | 6.8 | 5.5 | 7.4 | 6.2 | 6.7 | 2.3 | 4.4 | 9.7 | 6.4 |
| 1998–99 | 5.9 | 4.9 | 6.1 | 6.2 | 5.8 | 3.9 | 5.5 | 7.8 | 5.7 |
| 1999–00 | 5.5 | 4.0 | 6.4 | 6.1 | 4.8 | 8.2 | 4.6 | 15.0 | 5.5 |
| 2000–01 | 4.8 | 4.1 | 6.9 | 6.3 | 5.2 | 5.3 | 4.6 | 9.6 | 5.2 |
| 2001–02 | 5.1 | 4.5 | 5.8 | 7.2 | 5.5 | 4.9 | 6.1 | 16.8 | 5.5 |
| 2002–03 | 5.1 | 4.7 | 5.2 | 5.5 | 5.9 | 4.8 | 3.7 | 14.8 | 5.2 |
| 2003–04 | 4.1 | 4.9 | 6.2 | 4.9 | 5.4 | 6.3 | 3.8 | 18.6 | 5.0 |
| 2004–05 | 3.9 | 4.4 | 5.3 | 5.3 | 6.7 | 6.4 | 3.9 | 19.5 | 4.9 |
| 2005–06 | 4.3 | 5.2 | 6.6 | 6.8 | 6.4 | 6.1 | 3.3 | 11.7 | 5.5 |
| 2006–07 | 4.3 | 4.9 | 6.3 | 7.3 | 6.2 | 7.5 | 6.3 | 13.6 | 5.5 |
| 2007–08 | 4.3 | 4.6 | 6.4 | 7.3 | 6.0 | 6.3 | 4.1 | 15.9 | 5.4 |
| 2008–09 | 4.3 | 5.0 | 6.3 | 7.0 | 6.6 | 7.1 | 6.2 | 10.1 | 5.5 |
| 2009–10 | 4.6 | 5.6 | 7.5 | 6.6 | 5.5 | 6.3 | 6.4 | 14.9 | 5.9 |
| 2010–11 | 3.8 | 4.7 | 6.8 | 7.9 | 7.5 | 7.3 | 4.3 | 13.2 | 5.5 |

*Source:* AIHW National Mortality Database.

# Firearms

Suicide rates for most jurisdictions showed marked decreases between 1979–80 and 2010–11 (Table A3.3).

**Table A3.3: Suicide rates for deaths due to firearm discharges, by state and territory of residence, 1979–80 to 2010–11**

| | State and territory of residence | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year of death | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Australia |
| 1979–80 | 3.1 | 3.2 | 5.9 | 3.4 | 4.9 | 6.4 | n.p. | 13.5 | 3.9 |
| 1980–81 | 2.8 | 3.4 | 5.8 | 1.6 | 3.5 | 6.7 | 3.9 | 3.6 | 3.5 |
| 1981–82 | 3.2 | 3.5 | 4.4 | 3.5 | 3.1 | 5.2 | n.p. | n.p. | 3.5 |
| 1982–83 | 3.3 | 3.5 | 5.1 | 2.6 | 3.6 | 6.5 | 4.4 | 11.0 | 3.7 |
| 1983–84 | 2.9 | 3.3 | 5.1 | 2.2 | 2.4 | 5.3 | 5.3 | 3.2 | 3.3 |
| 1984–85 | 3.1 | 3.6 | 5.4 | 1.7 | 3.1 | 5.5 | n.p. | 12.4 | 3.6 |
| 1985–86 | 3.3 | 2.9 | 6.6 | 2.8 | 2.5 | 8.4 | n.p. | 7.8 | 3.8 |
| 1986–87 | 2.6 | 3.3 | 5.2 | 2.6 | 3.3 | 6.5 | 4.3 | 6.4 | 3.4 |
| 1987–88 | 2.8 | 3.1 | 5.5 | 2.4 | 3.0 | 9.3 | 2.8 | 7.6 | 3.5 |
| 1988–89 | 2.1 | 2.1 | 4.8 | 2.0 | 3.5 | 4.8 | 2.6 | 13.1 | 2.8 |
| 1989–90 | 2.0 | 2.0 | 5.1 | 2.5 | 2.1 | 7.5 | 2.4 | 4.8 | 2.8 |
| 1990–91 | 2.3 | 2.0 | 5.3 | 2.0 | 3.6 | 6.6 | n.p. | 2.8 | 2.9 |
| 1991–92 | 2.2 | 2.5 | 4.3 | 2.1 | 3.5 | 6.5 | n.p. | 6.8 | 2.9 |
| 1992–93 | 2.1 | 2.0 | 3.5 | 2.1 | 2.8 | 7.3 | 1.8 | n.p. | 2.5 |
| 1993–94 | 2.1 | 1.9 | 3.9 | 2.5 | 2.4 | 5.7 | n.p. | 5.4 | 2.5 |
| 1994–95 | 1.9 | 1.7 | 3.2 | 1.9 | 2.4 | 4.4 | n.p. | 5.1 | 2.2 |
| 1995–96 | 1.9 | 1.6 | 4.1 | 1.5 | 1.9 | 3.0 | n.p. | 3.6 | 2.2 |
| 1996–97 | 1.5 | 1.8 | 2.9 | 1.5 | 1.5 | 2.9 | n.p. | 4.8 | 1.9 |
| 1997–98 | 1.3 | 1.1 | 2.0 | 1.2 | 1.0 | 3.0 | n.p. | 4.6 | 1.4 |
| 1998–99 | 1.3 | 1.5 | 1.7 | 1.2 | 1.9 | 2.7 | n.p. | n.p. | 1.5 |
| 1999–00 | 1.1 | 1.0 | 1.8 | 1.0 | 1.8 | 1.9 | n.p. | n.p. | 1.3 |
| 2000–01 | 1.1 | 1.0 | 1.9 | 1.0 | 1.0 | 2.1 | n.p. | 4.3 | 1.3 |
| 2001–02 | 1.2 | 0.8 | 1.7 | 1.1 | 1.0 | 2.3 | n.p. | 3.8 | 1.2 |
| 2002–03 | 0.8 | 0.8 | 1.3 | 1.5 | 0.8 | 3.7 | n.p. | 4.3 | 1.0 |
| 2003–04 | 0.7 | 0.9 | 1.1 | 1.0 | 1.2 | 2.0 | n.p. | 2.2 | 0.9 |
| 2004–05 | 0.6 | 0.5 | 1.3 | 0.5 | 0.8 | 1.6 | n.p. | n.p. | 0.8 |
| 2005–06 | 0.6 | 0.6 | 1.0 | 0.9 | 1.0 | 2.0 | n.p. | n.p. | 0.8 |
| 2006–07 | 0.5 | 0.8 | 1.1 | 1.0 | 0.9 | 1.5 | n.p. | n.p. | 0.8 |
| 2007–08 | 0.6 | 0.6 | 1.3 | 0.9 | 1.0 | 2.3 | n.p. | 5.7 | 0.9 |
| 2008–09 | 0.5 | 0.6 | 1.3 | 0.9 | 1.3 | 1.2 | n.p. | 3.1 | 0.8 |
| 2009–10 | 0.4 | 0.7 | 1.0 | 0.4 | 0.9 | 0.9 | n.p. | n.p. | 0.7 |
| 2010–11 | 0.4 | 0.3 | 1.2 | 0.9 | 0.4 | 1.2 | n.p. | n.p. | 0.7 |

*Source:* AIHW National Mortality Database.

# Poisons (except gas)

Suicide rates due to exposure to poisons other than gases in New South Wales, Victoria, Queensland and South Australia showed marked decreases between 1979–80 and 2010–11 (Table A3.4).

**Table A3.4: Suicide rates for deaths due to exposure to poisons (except gas), by state and territory of residence, 1979–80 to 2010–11**

| | State and territory of residence | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year of death | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Australia |
| 1979–80 | 3.3 | 3.4 | 3.6 | 2.6 | 4.1 | 2.3 | n.p. | 0.0 | 3.3 |
| 1980–81 | 2.2 | 3.5 | 4.4 | 2.5 | 3.2 | 2.4 | n.p. | 0.0 | 3.0 |
| 1981–82 | 2.6 | 2.8 | 3.2 | 1.8 | 4.3 | 2.2 | n.p. | n.p. | 2.8 |
| 1982–83 | 2.7 | 3.0 | 3.0 | 2.7 | 2.8 | 2.0 | n.p. | 0.0 | 2.8 |
| 1983–84 | 2.1 | 2.9 | 2.6 | 3.2 | 2.4 | 3.1 | 3.9 | n.p. | 2.6 |
| 1984–85 | 2.4 | 1.8 | 3.3 | 2.7 | 2.1 | 2.5 | 6.9 | n.p. | 2.4 |
| 1985–86 | 2.0 | 2.4 | 3.2 | 2.8 | 2.9 | 2.3 | 2.8 | n.p. | 2.5 |
| 1986–87 | 2.3 | 2.5 | 3.6 | 2.5 | 2.7 | n.p. | 2.8 | 0.0 | 2.6 |
| 1987–88 | 2.3 | 2.3 | 3.3 | 2.2 | 2.9 | 1.9 | n.p. | n.p. | 2.5 |
| 1988–89 | 2.1 | 1.9 | 3.4 | 1.6 | 2.9 | 3.3 | 3.1 | n.p. | 2.3 |
| 1989–90 | 2.0 | 2.4 | 3.1 | 1.7 | 2.4 | n.p. | n.p. | n.p. | 2.2 |
| 1990–91 | 2.7 | 2.2 | 2.4 | 1.9 | 2.8 | 2.7 | n.p. | n.p. | 2.4 |
| 1991–92 | 2.3 | 2.1 | 3.0 | 1.8 | 3.0 | 1.5 | 2.3 | n.p. | 2.4 |
| 1992–93 | 1.9 | 1.6 | 3.0 | 2.1 | 1.7 | 1.6 | n.p. | n.p. | 2.0 |
| 1993–94 | 2.2 | 1.7 | 2.4 | 1.9 | 1.9 | 1.1 | n.p. | 3.0 | 2.0 |
| 1994–95 | 2.4 | 1.9 | 2.3 | 1.2 | 1.9 | 1.8 | n.p. | n.p. | 2.0 |
| 1995–96 | 2.3 | 1.8 | 2.6 | 2.1 | 2.0 | 2.6 | 2.8 | 0.0 | 2.2 |
| 1996–97 | 2.1 | 1.5 | 1.9 | 1.7 | 2.1 | 1.7 | 1.5 | n.p. | 1.9 |
| 1997–98 | 2.0 | 1.5 | 2.2 | 2.0 | 1.7 | 1.1 | 2.1 | 2.5 | 1.9 |
| 1998–99 | 1.7 | 1.7 | 1.5 | 2.0 | 2.2 | 1.5 | n.p. | n.p. | 1.7 |
| 1999–00 | 1.7 | 1.3 | 2.2 | 1.2 | 1.6 | n.p. | 1.6 | n.p. | 1.6 |
| 2000–01 | 1.5 | 1.9 | 1.8 | 1.6 | 2.4 | n.p. | 1.9 | n.p. | 1.7 |
| 2001–02 | 1.4 | 1.2 | 2.3 | 1.3 | 1.6 | 1.3 | n.p. | n.p. | 1.5 |
| 2002–03 | 1.5 | 1.7 | 1.9 | 1.3 | 2.1 | 2.0 | n.p. | n.p. | 1.7 |
| 2003–04 | 1.1 | 1.2 | 1.7 | 1.3 | 1.6 | 1.3 | 1.9 | 0.0 | 1.3 |
| 2004–05 | 1.0 | 1.4 | 1.7 | 0.8 | 1.3 | 2.2 | 1.4 | n.p. | 1.3 |
| 2005–06 | 1.0 | 1.0 | 2.0 | 1.0 | 1.7 | 1.6 | n.p. | n.p. | 1.2 |
| 2006–07 | 1.1 | 1.2 | 1.9 | 1.0 | 2.2 | 1.1 | n.p. | n.p. | 1.4 |
| 2007–08 | 1.5 | 1.2 | 1.4 | 2.2 | 1.5 | 1.9 | 1.3 | n.p. | 1.5 |
| 2008–09 | 1.2 | 1.8 | 2.0 | 1.8 | 2.0 | 1.7 | n.p. | n.p. | 1.6 |
| 2009–10 | 1.4 | 1.1 | 1.5 | 2.2 | 1.7 | 1.7 | 2.8 | n.p. | 1.5 |
| 2010–11 | 1.1 | 1.1 | 1.8 | 2.0 | 1.4 | 2.3 | n.p. | n.p. | 1.4 |

*Source:* AIHW National Mortality Database.

# Gas

Suicide rates for deaths due to poisoning by exposure to gaseous substances for some jurisdictions generally rose until the late 1990s before declining to 2010–11 (Table A3.5).

**Table A3.5: Suicide rates for deaths due to poisoning by exposure to gaseous substances, by state and territory of residence, 1979–80 to 2010–11**

| | State and territory of residence | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year of death | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Australia |
| 1979–80 | 1.9 | 1.4 | 1.5 | 3.3 | 1.3 | n.p. | n.p. | n.p. | 1.7 |
| 1980–81 | 1.7 | 1.1 | 1.4 | 2.6 | 2.3 | 2.6 | n.p. | n.p. | 1.7 |
| 1981–82 | 1.6 | 1.6 | 1.6 | 3.5 | 1.2 | 2.7 | n.p. | n.p. | 1.8 |
| 1982–83 | 1.4 | 1.7 | 1.3 | 2.1 | 1.6 | 1.9 | 3.9 | 0.0 | 1.6 |
| 1983–84 | 1.7 | 1.7 | 1.6 | 4.1 | 1.1 | 2.4 | 2.6 | 0.0 | 1.9 |
| 1984–85 | 2.0 | 1.8 | 1.8 | 3.3 | 2.5 | 1.4 | n.p. | n.p. | 2.1 |
| 1985–86 | 2.4 | 2.6 | 2.4 | 4.0 | 3.6 | 1.6 | 6.1 | 0.0 | 2.7 |
| 1986–87 | 2.1 | 2.4 | 2.7 | 3.9 | 2.2 | 2.8 | 2.8 | n.p. | 2.5 |
| 1987–88 | 2.8 | 2.3 | 2.1 | 5.0 | 3.1 | 2.9 | 3.9 | n.p. | 2.8 |
| 1988–89 | 2.8 | 2.7 | 2.0 | 3.6 | 2.7 | 1.9 | 1.4 | n.p. | 2.7 |
| 1989–90 | 2.2 | 2.1 | 2.4 | 3.4 | 2.3 | 2.2 | 3.3 | 2.8 | 2.3 |
| 1990–91 | 2.4 | 2.8 | 2.3 | 4.2 | 3.2 | 4.0 | 3.1 | 4.1 | 2.8 |
| 1991–92 | 2.4 | 3.2 | 2.5 | 4.3 | 2.3 | 3.2 | 4.5 | n.p. | 2.9 |
| 1992–93 | 2.3 | 2.3 | 2.1 | 3.7 | 2.7 | 4.8 | 3.0 | n.p. | 2.5 |
| 1993–94 | 2.0 | 2.4 | 2.2 | 4.5 | 2.9 | 5.3 | 3.7 | n.p. | 2.6 |
| 1994–95 | 2.4 | 2.4 | 3.4 | 2.6 | 2.2 | 3.8 | 3.1 | n.p. | 2.6 |
| 1995–96 | 2.7 | 3.1 | 2.8 | 3.0 | 3.2 | 4.1 | 4.2 | 5.6 | 3.0 |
| 1996–97 | 2.7 | 3.1 | 3.0 | 3.2 | 3.7 | 4.3 | 3.1 | 2.0 | 3.0 |
| 1997–98 | 3.1 | 3.2 | 3.3 | 3.8 | 3.6 | 2.4 | 3.7 | n.p. | 3.2 |
| 1998–99 | 2.1 | 2.9 | 3.1 | 2.4 | 4.4 | 6.3 | 3.4 | n.p. | 2.8 |
| 1999–00 | 2.5 | 2.8 | 3.9 | 4.3 | 2.8 | 3.3 | 5.4 | n.p. | 3.1 |
| 2000–01 | 1.9 | 2.6 | 3.3 | 4.0 | 3.6 | 3.5 | 4.1 | n.p. | 2.7 |
| 2001–02 | 1.6 | 2.2 | 2.4 | 2.3 | 3.3 | 3.0 | 3.1 | 2.5 | 2.2 |
| 2002–03 | 1.4 | 2.4 | 2.1 | 3.1 | 2.7 | 2.2 | 2.6 | n.p. | 2.1 |
| 2003–04 | 1.0 | 2.1 | 2.7 | 1.8 | 2.5 | 4.5 | 1.8 | n.p. | 1.9 |
| 2004–05 | 1.2 | 1.8 | 2.1 | 2.0 | 2.2 | 4.0 | 1.4 | n.p. | 1.8 |
| 2005–06 | 1.1 | 1.4 | 1.3 | 1.4 | 1.4 | 2.1 | 2.1 | n.p. | 1.3 |
| 2006–07 | 0.7 | 1.6 | 1.2 | 1.8 | 1.7 | 2.9 | n.p. | n.p. | 1.3 |
| 2007–08 | 0.7 | 1.1 | 1.2 | 1.4 | 0.9 | 1.5 | n.p. | n.p. | 1.0 |
| 2008–09 | 1.1 | 1.1 | 1.4 | 0.9 | 1.2 | 2.3 | n.p. | 0.0 | 1.2 |
| 2009–10 | 0.6 | 0.9 | 1.0 | 1.1 | 1.5 | 2.0 | n.p. | n.p. | 0.9 |
| 2010–11 | 0.6 | 0.7 | 1.5 | 1.5 | 1.0 | 2.1 | 1.9 | n.p. | 1.0 |

*Source:* AIHW National Mortality Database.

# Appendix 4: Summary data tables

This appendix provides summary data for:

- suicide counts and rates, by sex, for long-term trends (that is, early 1920s to 2010) for all causes and major mechanisms of death described in this report
- counts and rates, by sex, for trends (that is, 1999–00 to 2011–12) for hospitalisations due to intentional self-harm for all causes and major mechanisms of injury described in this report.

**Table A4.1: Suicide counts and rates, by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1921 | 510 | 23.8 | 111 | 5.0 | 621 | 14.7 | 1944 | 362 | 12.0 | 178 | 5.2 | 540 | 8.4 |
| 1922 | 441 | 21.4 | 92 | 3.9 | 533 | 12.8 | 1945 | 394 | 12.8 | 173 | 5.1 | 567 | 8.8 |
| 1923 | 492 | 21.7 | 107 | 4.4 | 599 | 13.3 | 1946 | 513 | 16.1 | 219 | 6.5 | 732 | 11.2 |
| 1924 | 534 | 23.3 | 119 | 4.9 | 653 | 14.3 | 1947 | 546 | 17.1 | 200 | 5.7 | 746 | 11.2 |
| 1925 | 569 | 25.2 | 131 | 5.3 | 700 | 15.4 | 1948 | 578 | 17.9 | 159 | 4.6 | 737 | 11.1 |
| 1926 | 583 | 24.4 | 128 | 5.3 | 711 | 15.1 | 1949 | 598 | 17.8 | 174 | 4.7 | 772 | 11.0 |
| 1927 | 598 | 24.4 | 142 | 5.5 | 740 | 15.1 | 1950 | 567 | 16.7 | 193 | 5.1 | 760 | 10.7 |
| 1928 | 635 | 26.0 | 142 | 5.4 | 777 | 15.8 | 1951 | 608 | 16.5 | 197 | 5.2 | 805 | 10.7 |
| 1929 | 644 | 23.9 | 141 | 5.1 | 785 | 14.7 | 1952 | 694 | 18.7 | 225 | 5.9 | 919 | 12.2 |
| 1930 | 791 | 29.8 | 152 | 5.3 | 943 | 17.8 | 1953 | 698 | 18.6 | 261 | 6.8 | 959 | 12.5 |
| 1931 | 689 | 26.5 | 138 | 4.9 | 827 | 15.8 | 1954 | 724 | 18.9 | 245 | 6.1 | 969 | 12.3 |
| 1932 | 598 | 22.3 | 156 | 5.5 | 754 | 14.0 | 1955 | 701 | 18.1 | 245 | 6.1 | 946 | 11.9 |
| 1933 | 633 | 22.6 | 157 | 5.2 | 790 | 14.0 | 1956 | 751 | 18.6 | 270 | 6.6 | 1,021 | 12.5 |
| 1934 | 643 | 23.5 | 183 | 6.1 | 826 | 14.8 | 1957 | 844 | 20.8 | 326 | 7.7 | 1,170 | 14.1 |
| 1935 | 612 | 22.0 | 179 | 6.0 | 791 | 14.0 | 1958 | 910 | 22.0 | 297 | 6.9 | 1,207 | 14.2 |
| 1936 | 611 | 21.8 | 178 | 5.8 | 789 | 13.7 | 1959 | 827 | 19.5 | 288 | 6.6 | 1,115 | 12.9 |
| 1937 | 573 | 19.9 | 148 | 4.8 | 721 | 12.3 | 1960 | 778 | 18.0 | 314 | 7.1 | 1,092 | 12.4 |
| 1938 | 574 | 19.5 | 169 | 5.3 | 743 | 12.4 | 1961 | 901 | 20.2 | 348 | 7.6 | 1,249 | 13.8 |
| 1939 | 602 | 20.4 | 179 | 5.6 | 781 | 12.9 | 1962 | 1,011 | 22.5 | 458 | 10.0 | 1,469 | 16.1 |
| 1940 | 568 | 18.6 | 175 | 5.5 | 743 | 12.0 | 1963 | 1,143 | 25.0 | 575 | 12.3 | 1,718 | 18.4 |
| 1941 | 463 | 15.7 | 161 | 4.8 | 624 | 10.1 | 1964 | 1,101 | 23.8 | 557 | 11.6 | 1,658 | 17.5 |
| 1942 | 432 | 13.9 | 162 | 4.8 | 594 | 9.3 | 1965 | 1,065 | 22.3 | 637 | 13.1 | 1,702 | 17.6 |
| 1943 | 376 | 12.8 | 140 | 4.3 | 516 | 8.4 | 1966 | 1,049 | 22.0 | 615 | 12.4 | 1,664 | 16.9 |

*(continued)*

**Table A4.1 (continued): Suicide counts and rates, by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1967 | 1,075 | 21.9 | 626 | 12.4 | 1,701 | 17.0 | 1990 | 1,759 | 21.3 | 445 | 5.3 | 2,204 | 13.1 |
| 1968 | 1,032 | 20.7 | 510 | 9.9 | 1,542 | 15.0 | 1991 | 1,809 | 21.8 | 481 | 5.7 | 2,290 | 13.5 |
| 1969 | 1,042 | 20.7 | 463 | 8.8 | 1,505 | 14.5 | 1992 | 1,790 | 21.0 | 465 | 5.4 | 2,255 | 13.0 |
| 1970 | 1,098 | 21.0 | 521 | 9.6 | 1,619 | 15.1 | 1993 | 1,640 | 19.1 | 399 | 4.6 | 2,039 | 11.7 |
| 1971 | 1,119 | 20.4 | 570 | 10.1 | 1,689 | 15.0 | 1994 | 1,867 | 21.6 | 418 | 4.7 | 2,285 | 12.9 |
| 1972 | 1,074 | 19.1 | 524 | 9.1 | 1,598 | 13.9 | 1995 | 1,857 | 21.0 | 506 | 5.7 | 2,363 | 13.2 |
| 1973 | 1,057 | 18.3 | 477 | 8.1 | 1,534 | 13.0 | 1996 | 1,963 | 22.0 | 460 | 5.0 | 2,423 | 13.3 |
| 1974 | 1,043 | 17.9 | 507 | 8.5 | 1,550 | 13.0 | 1997 | 2,087 | 23.0 | 560 | 6.1 | 2,647 | 14.4 |
| 1975 | 1,076 | 18.1 | 469 | 7.8 | 1,545 | 12.7 | 1998 | 2,116 | 23.0 | 524 | 5.6 | 2,640 | 14.1 |
| 1976 | 1,103 | 18.1 | 419 | 6.8 | 1,522 | 12.2 | 1999 | 2,001 | 21.7 | 489 | 5.2 | 2,490 | 13.2 |
| 1977 | 1,094 | 17.5 | 415 | 6.6 | 1,509 | 11.9 | 2000 | 1,885 | 20.3 | 506 | 5.3 | 2,391 | 12.6 |
| 1978 | 1,137 | 17.4 | 486 | 7.5 | 1,623 | 12.4 | 2001 | 1,948 | 20.6 | 520 | 5.3 | 2,468 | 12.8 |
| 1979 | 1,172 | 17.8 | 456 | 6.8 | 1,628 | 12.2 | 2002 | 1,820 | 19.0 | 507 | 5.1 | 2,327 | 11.9 |
| 1980 | 1,231 | 18.7 | 411 | 6.2 | 1,642 | 12.3 | 2003 | 1,689 | 17.4 | 475 | 4.7 | 2,164 | 10.9 |
| 1981 | 1,272 | 19.1 | 430 | 6.4 | 1,702 | 12.4 | 2004 | 1,682 | 17.2 | 446 | 4.4 | 2,128 | 10.6 |
| 1982 | 1,318 | 18.9 | 447 | 6.4 | 1,765 | 12.4 | 2005 | 1,654 | 16.7 | 439 | 4.3 | 2,093 | 10.3 |
| 1983 | 1,298 | 18.5 | 399 | 5.6 | 1,697 | 11.7 | 2006 | 1,641 | 16.2 | 500 | 4.8 | 2,141 | 10.4 |
| 1984 | 1,346 | 18.5 | 406 | 5.6 | 1,752 | 11.9 | 2007 | 1,716 | 16.6 | 543 | 5.1 | 2,259 | 10.8 |
| 1985 | 1,436 | 19.2 | 425 | 5.7 | 1,861 | 12.3 | 2008 | 1,831 | 17.4 | 490 | 4.6 | 2,321 | 10.8 |
| 1986 | 1,583 | 21.0 | 463 | 6.1 | 2,046 | 13.3 | 2009 | 1,790 | 16.6 | 561 | 5.1 | 2,351 | 10.7 |
| 1987 | 1,725 | 22.7 | 437 | 5.6 | 2,162 | 13.8 | 2010 | 1,798 | 16.4 | 542 | 4.8 | 2,340 | 10.5 |
| 1988 | 1,711 | 21.6 | 459 | 5.8 | 2,170 | 13.5 | | | | | | | |
| 1989 | 1,643 | 20.3 | 426 | 5.2 | 2,069 | 12.5 | | | | | | | |

(a) Year = Year of registration for 1921 to 1963 and year of death for 1964 to 2010.

*Source:* AIHW National Mortality Database and GRIM Books.

**Table A4.2: Suicide counts and rates for deaths due to hanging, by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1921 | 68 | 3.0 | 13 | 0.6 | 81 | 1.9 | 1944 | 72 | 2.3 | 20 | 0.6 | 92 | 1.4 |
| 1922 | 70 | 3.4 | 9 | 0.4 | 79 | 1.9 | 1945 | 71 | 2.3 | 20 | 0.6 | 91 | 1.4 |
| 1923 | 75 | 3.6 | 10 | 0.4 | 85 | 2.0 | 1946 | 86 | 2.6 | 28 | 0.9 | 114 | 1.8 |
| 1924 | 80 | 3.4 | 21 | 1.1 | 101 | 2.3 | 1947 | 111 | 3.6 | 27 | 0.7 | 138 | 2.1 |
| 1925 | 86 | 4.0 | 19 | 1.0 | 105 | 2.5 | 1948 | 131 | 4.0 | 19 | 0.5 | 150 | 2.2 |
| 1926 | 81 | 3.9 | 26 | 1.2 | 107 | 2.5 | 1949 | 107 | 3.3 | 31 | 0.8 | 138 | 2.0 |
| 1927 | 92 | 4.0 | 23 | 1.1 | 115 | 2.6 | 1950 | 126 | 3.5 | 28 | 0.7 | 154 | 2.1 |
| 1928 | 99 | 4.6 | 25 | 1.0 | 124 | 2.8 | 1951 | 118 | 3.2 | 28 | 0.7 | 146 | 1.9 |
| 1929 | 93 | 3.6 | 18 | 0.8 | 111 | 2.2 | 1952 | 125 | 3.4 | 32 | 0.9 | 157 | 2.1 |
| 1930 | 99 | 3.7 | 16 | 0.6 | 115 | 2.2 | 1953 | 128 | 3.4 | 43 | 1.1 | 171 | 2.2 |
| 1931 | 94 | 3.7 | 13 | 0.5 | 107 | 2.2 | 1954 | 141 | 3.7 | 37 | 0.9 | 178 | 2.3 |
| 1932 | 83 | 3.2 | 15 | 0.6 | 98 | 1.9 | 1955 | 137 | 3.6 | 47 | 1.2 | 184 | 2.4 |
| 1933 | 87 | 3.3 | 16 | 0.5 | 103 | 1.9 | 1956 | 114 | 2.8 | 31 | 0.8 | 145 | 1.7 |
| 1934 | 73 | 2.7 | 18 | 0.6 | 91 | 1.7 | 1957 | 178 | 4.4 | 47 | 1.1 | 225 | 2.7 |
| 1935 | 81 | 2.9 | 23 | 0.7 | 104 | 1.8 | 1958 | 168 | 4.1 | 39 | 0.9 | 207 | 2.4 |
| 1936 | 75 | 3.1 | 14 | 0.5 | 89 | 1.8 | 1959 | 144 | 3.5 | 32 | 0.7 | 176 | 2.1 |
| 1937 | 62 | 2.1 | 14 | 0.5 | 76 | 1.3 | 1960 | 123 | 2.8 | 29 | 0.7 | 152 | 1.7 |
| 1938 | 72 | 2.6 | 24 | 0.9 | 96 | 1.7 | 1961 | 145 | 3.4 | 22 | 0.5 | 167 | 1.9 |
| 1939 | 108 | 3.6 | 23 | 0.7 | 131 | 2.2 | 1962 | 158 | 3.7 | 32 | 0.7 | 190 | 2.1 |
| 1940 | 81 | 2.8 | 19 | 0.7 | 100 | 1.7 | 1963 | 117 | 2.6 | 40 | 0.8 | 157 | 1.7 |
| 1941 | 60 | 2.1 | 24 | 0.8 | 84 | 1.4 | 1964 | 147 | 3.3 | 33 | 0.7 | 180 | 1.9 |
| 1942 | 71 | 2.2 | 22 | 0.6 | 93 | 1.4 | 1965 | 127 | 2.7 | 35 | 0.7 | 162 | 1.7 |
| 1943 | 71 | 2.4 | 27 | 0.8 | 98 | 1.6 | 1966 | 133 | 2.9 | 35 | 0.7 | 168 | 1.7 |

*(continued)*

**Table A4.2 (continued): Suicide counts and rates for deaths due to hanging, by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1967 | 123 | 2.6 | 42 | 0.8 | 165 | 1.7 | 1990 | 461 | 5.6 | 105 | 1.2 | 566 | 3.3 |
| 1968 | 126 | 2.5 | 25 | 0.5 | 151 | 1.4 | 1991 | 478 | 5.7 | 100 | 1.2 | 578 | 3.4 |
| 1969 | 134 | 2.8 | 29 | 0.6 | 163 | 1.6 | 1992 | 504 | 5.9 | 98 | 1.1 | 602 | 3.4 |
| 1970 | 125 | 2.4 | 36 | 0.7 | 161 | 1.5 | 1993 | 474 | 5.4 | 84 | 1.0 | 558 | 3.1 |
| 1971 | 157 | 2.8 | 48 | 0.9 | 205 | 1.8 | 1994 | 562 | 6.4 | 102 | 1.1 | 664 | 3.7 |
| 1972 | 148 | 2.8 | 35 | 0.6 | 183 | 1.7 | 1995 | 570 | 6.4 | 125 | 1.4 | 695 | 3.8 |
| 1973 | 140 | 2.5 | 40 | 0.7 | 180 | 1.6 | 1996 | 688 | 7.6 | 121 | 1.3 | 809 | 4.4 |
| 1974 | 154 | 2.7 | 44 | 0.7 | 198 | 1.7 | 1997 | 835 | 9.1 | 165 | 1.8 | 1,000 | 5.4 |
| 1975 | 172 | 2.9 | 53 | 0.9 | 225 | 1.8 | 1998 | 989 | 10.6 | 184 | 2.0 | 1,173 | 6.2 |
| 1976 | 178 | 3.1 | 51 | 0.8 | 229 | 1.9 | 1999 | 879 | 9.5 | 160 | 1.7 | 1,039 | 5.5 |
| 1977 | 170 | 3.0 | 31 | 0.5 | 201 | 1.7 | 2000 | 814 | 8.6 | 185 | 1.9 | 999 | 5.2 |
| 1978 | 178 | 2.9 | 66 | 1.1 | 244 | 2.0 | 2001 | 886 | 9.3 | 197 | 2.0 | 1,083 | 5.6 |
| 1979 | 163 | 2.6 | 53 | 0.8 | 216 | 1.7 | 2002 | 828 | 8.7 | 202 | 2.0 | 1,030 | 5.3 |
| 1980 | 166 | 2.6 | 59 | 0.9 | 225 | 1.7 | 2003 | 811 | 8.3 | 175 | 1.8 | 986 | 5.0 |
| 1981 | 225 | 3.3 | 46 | 0.7 | 271 | 2.0 | 2004 | 829 | 8.5 | 184 | 1.8 | 1,013 | 5.1 |
| 1982 | 240 | 3.5 | 58 | 0.8 | 298 | 2.1 | 2005 | 886 | 8.9 | 185 | 1.8 | 1,071 | 5.3 |
| 1983 | 257 | 3.8 | 53 | 0.8 | 310 | 2.2 | 2006 | 877 | 8.7 | 209 | 2.0 | 1,086 | 5.3 |
| 1984 | 230 | 3.3 | 67 | 0.9 | 297 | 2.0 | 2007 | 952 | 9.3 | 225 | 2.1 | 1,177 | 5.7 |
| 1985 | 258 | 3.4 | 75 | 1.0 | 333 | 2.2 | 2008 | 980 | 9.3 | 202 | 1.9 | 1,182 | 5.6 |
| 1986 | 305 | 4.0 | 71 | 0.9 | 376 | 2.4 | 2009 | 990 | 9.2 | 239 | 2.2 | 1,229 | 5.7 |
| 1987 | 406 | 5.3 | 75 | 0.9 | 481 | 3.0 | 2010 | 1,054 | 9.7 | 243 | 2.2 | 1,297 | 5.9 |
| 1988 | 430 | 5.5 | 91 | 1.1 | 521 | 3.2 | | | | | | | |
| 1989 | 456 | 5.6 | 86 | 1.0 | 542 | 3.3 | | | | | | | |

(a) Year = Year of registration for 1921 to 1963 and year of death for 1964 to 2010.

*Source:* AIHW National Mortality Database and GRIM Books.

**Table A4.3: Suicide counts and rates for deaths due to firearms, by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1921 | 168 | 7.7 | 8 | 0.3 | 176 | 4.1 | 1944 | 105 | 3.3 | 14 | 0.4 | 119 | 1.8 |
| 1922 | 119 | 5.4 | 3 | 0.1 | 122 | 2.8 | 1945 | 112 | 3.6 | 11 | 0.3 | 123 | 1.9 |
| 1923 | 141 | 6.2 | 7 | 0.2 | 148 | 3.3 | 1946 | 160 | 4.8 | 14 | 0.4 | 174 | 2.5 |
| 1924 | 167 | 6.8 | 12 | 0.4 | 179 | 3.7 | 1947 | 177 | 5.3 | 12 | 0.3 | 189 | 2.8 |
| 1925 | 169 | 6.6 | 5 | 0.2 | 174 | 3.5 | 1948 | 165 | 4.9 | 9 | 0.2 | 174 | 2.5 |
| 1926 | 172 | 6.9 | 5 | 0.2 | 177 | 3.6 | 1949 | 199 | 5.6 | 11 | 0.3 | 210 | 2.9 |
| 1927 | 189 | 7.2 | 11 | 0.3 | 200 | 3.9 | 1950 | 176 | 5.0 | 12 | 0.3 | 188 | 2.6 |
| 1928 | 181 | 6.8 | 7 | 0.2 | 188 | 3.6 | 1951 | 200 | 5.2 | 19 | 0.5 | 219 | 2.8 |
| 1929 | 203 | 7.1 | 7 | 0.2 | 210 | 3.7 | 1952 | 242 | 6.2 | 21 | 0.5 | 263 | 3.4 |
| 1930 | 239 | 8.5 | 7 | 0.2 | 246 | 4.4 | 1953 | 227 | 5.9 | 19 | 0.5 | 246 | 3.1 |
| 1931 | 231 | 8.3 | 16 | 0.5 | 247 | 4.5 | 1954 | 265 | 6.8 | 25 | 0.6 | 290 | 3.7 |
| 1932 | 169 | 5.9 | 5 | 0.2 | 174 | 3.1 | 1955 | 253 | 6.5 | 19 | 0.4 | 272 | 3.4 |
| 1933 | 196 | 6.5 | 9 | 0.3 | 205 | 3.5 | 1956 | 258 | 6.2 | 20 | 0.5 | 278 | 3.3 |
| 1934 | 202 | 7.1 | 12 | 0.4 | 214 | 3.8 | 1957 | 298 | 7.3 | 18 | 0.4 | 316 | 3.8 |
| 1935 | 197 | 6.9 | 12 | 0.4 | 209 | 3.6 | 1958 | 319 | 7.5 | 18 | 0.4 | 337 | 3.9 |
| 1936 | 226 | 7.3 | 9 | 0.3 | 235 | 3.8 | 1959 | 297 | 6.8 | 12 | 0.3 | 309 | 3.5 |
| 1937 | 190 | 6.1 | 14 | 0.4 | 204 | 3.3 | 1960 | 266 | 5.9 | 17 | 0.4 | 283 | 3.1 |
| 1938 | 207 | 6.9 | 15 | 0.4 | 222 | 3.7 | 1961 | 289 | 6.2 | 18 | 0.4 | 307 | 3.3 |
| 1939 | 187 | 5.9 | 10 | 0.3 | 197 | 3.1 | 1962 | 315 | 7.1 | 26 | 0.6 | 341 | 3.8 |
| 1940 | 216 | 6.5 | 13 | 0.4 | 229 | 3.5 | 1963 | 312 | 6.7 | 24 | 0.5 | 336 | 3.5 |
| 1941 | 149 | 4.7 | 10 | 0.3 | 159 | 2.5 | 1964 | 338 | 7.2 | 22 | 0.4 | 360 | 3.7 |
| 1942 | 134 | 4.3 | 12 | 0.3 | 146 | 2.3 | 1965 | 302 | 6.2 | 29 | 0.6 | 331 | 3.4 |
| 1943 | 106 | 3.4 | 13 | 0.4 | 119 | 1.9 | 1966 | 315 | 6.5 | 29 | 0.6 | 344 | 3.5 |

*(continued)*

**Table A4.3 (continued): Suicide counts and rates for deaths due to firearms, by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1967 | 323 | 6.6 | 33 | 0.6 | 356 | 3.5 | 1990 | 457 | 5.5 | 33 | 0.4 | 490 | 2.9 |
| 1968 | 324 | 6.4 | 20 | 0.4 | 344 | 3.3 | 1991 | 465 | 5.7 | 24 | 0.3 | 489 | 2.9 |
| 1969 | 314 | 6.1 | 26 | 0.5 | 340 | 3.2 | 1992 | 451 | 5.3 | 24 | 0.3 | 475 | 2.7 |
| 1970 | 380 | 7.2 | 26 | 0.5 | 406 | 3.7 | 1993 | 423 | 5.1 | 18 | 0.2 | 441 | 2.5 |
| 1971 | 373 | 6.8 | 27 | 0.5 | 400 | 3.5 | 1994 | 392 | 4.6 | 20 | 0.2 | 412 | 2.3 |
| 1972 | 360 | 6.3 | 28 | 0.5 | 388 | 3.3 | 1995 | 374 | 4.4 | 20 | 0.2 | 394 | 2.2 |
| 1973 | 367 | 6.2 | 28 | 0.4 | 395 | 3.2 | 1996 | 374 | 4.3 | 17 | 0.2 | 391 | 2.2 |
| 1974 | 390 | 6.6 | 35 | 0.6 | 425 | 3.5 | 1997 | 276 | 3.1 | 21 | 0.2 | 297 | 1.6 |
| 1975 | 363 | 6.1 | 35 | 0.6 | 398 | 3.2 | 1998 | 231 | 2.6 | 17 | 0.2 | 248 | 1.3 |
| 1976 | 397 | 6.4 | 32 | 0.5 | 429 | 3.4 | 1999 | 252 | 2.8 | 11 | 0.1 | 263 | 1.4 |
| 1977 | 385 | 6.0 | 36 | 0.6 | 421 | 3.2 | 2000 | 211 | 2.3 | 11 | 0.1 | 222 | 1.2 |
| 1978 | 440 | 6.5 | 34 | 0.5 | 474 | 3.5 | 2001 | 244 | 2.6 | 19 | 0.2 | 263 | 1.4 |
| 1979 | 475 | 7.1 | 41 | 0.6 | 516 | 3.8 | 2002 | 203 | 2.1 | 11 | 0.1 | 214 | 1.1 |
| 1980 | 491 | 7.3 | 38 | 0.5 | 529 | 3.8 | 2003 | 179 | 1.9 | 10 | 0.1 | 189 | 0.9 |
| 1981 | 451 | 6.6 | 39 | 0.6 | 490 | 3.5 | 2004 | 169 | 1.7 | 4 | 0.0 | 173 | 0.9 |
| 1982 | 518 | 7.3 | 34 | 0.5 | 552 | 3.8 | 2005 | 135 | 1.4 | 11 | 0.1 | 146 | 0.7 |
| 1983 | 469 | 6.5 | 43 | 0.6 | 512 | 3.4 | 2006 | 185 | 1.8 | 10 | 0.1 | 195 | 0.9 |
| 1984 | 500 | 6.7 | 42 | 0.5 | 542 | 3.6 | 2007 | 180 | 1.7 | 9 | 0.1 | 189 | 0.9 |
| 1985 | 508 | 6.8 | 41 | 0.5 | 549 | 3.6 | 2008 | 173 | 1.6 | 11 | 0.1 | 184 | 0.8 |
| 1986 | 508 | 6.8 | 44 | 0.6 | 552 | 3.6 | 2009 | 157 | 1.5 | 8 | 0.1 | 165 | 0.7 |
| 1987 | 526 | 7.0 | 40 | 0.5 | 566 | 3.6 | 2010 | 152 | 1.4 | 14 | 0.1 | 166 | 0.7 |
| 1988 | 477 | 6.0 | 26 | 0.3 | 503 | 3.1 | | | | | | | |
| 1989 | 421 | 5.2 | 30 | 0.4 | 451 | 2.7 | | | | | | | |

(a) Year = Year of registration for 1921 to 1963 and year of death for 1964 to 2010.

*Source:* AIHW National Mortality Database and GRIM Books.

**Table A4.4: Suicide counts and rates for deaths due to exposure to poisons (except gas), by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1922 | 91 | 3.8 | 44 | 1.6 | 135 | 2.8 | 1945 | 69 | 2.0 | 60 | 1.7 | 129 | 1.9 |
| 1923 | 115 | 4.6 | 43 | 1.7 | 158 | 3.2 | 1946 | 90 | 2.7 | 70 | 2.0 | 160 | 2.3 |
| 1924 | 104 | 4.3 | 44 | 1.7 | 148 | 3.0 | 1947 | 72 | 2.3 | 70 | 2.0 | 142 | 2.1 |
| 1925 | 114 | 5.2 | 57 | 2.0 | 171 | 3.7 | 1948 | 99 | 3.1 | 61 | 1.7 | 160 | 2.3 |
| 1926 | 129 | 5.2 | 44 | 1.8 | 173 | 3.5 | 1949 | 98 | 2.7 | 57 | 1.5 | 155 | 2.1 |
| 1927 | 141 | 5.4 | 71 | 2.6 | 212 | 4.1 | 1950 | 101 | 3.0 | 61 | 1.6 | 162 | 2.3 |
| 1928 | 160 | 6.3 | 61 | 2.1 | 221 | 4.2 | 1951 | 96 | 2.6 | 56 | 1.5 | 152 | 2.0 |
| 1929 | 152 | 5.4 | 62 | 2.1 | 214 | 3.8 | 1952 | 104 | 2.7 | 77 | 2.0 | 181 | 2.3 |
| 1930 | 197 | 7.2 | 73 | 2.3 | 270 | 4.8 | 1953 | 119 | 3.0 | 88 | 2.3 | 207 | 2.6 |
| 1931 | 148 | 5.6 | 42 | 1.3 | 190 | 3.5 | 1954 | 103 | 2.6 | 71 | 1.8 | 174 | 2.2 |
| 1932 | 127 | 4.6 | 70 | 2.2 | 197 | 3.4 | 1955 | 89 | 2.2 | 68 | 1.7 | 157 | 2.0 |
| 1933 | 129 | 4.5 | 72 | 2.3 | 201 | 3.4 | 1956 | 126 | 3.1 | 95 | 2.4 | 221 | 2.7 |
| 1934 | 144 | 5.2 | 68 | 2.2 | 212 | 3.7 | 1957 | 154 | 3.6 | 125 | 2.9 | 279 | 3.3 |
| 1935 | 147 | 5.6 | 82 | 2.7 | 229 | 4.1 | 1958 | 159 | 3.7 | 115 | 2.6 | 274 | 3.1 |
| 1936 | 118 | 4.1 | 75 | 2.4 | 193 | 3.2 | 1959 | 153 | 3.5 | 130 | 3.0 | 283 | 3.2 |
| 1937 | 112 | 3.7 | 54 | 1.7 | 166 | 2.7 | 1960 | 154 | 3.5 | 148 | 3.3 | 302 | 3.4 |
| 1938 | 103 | 3.4 | 67 | 2.1 | 170 | 2.7 | 1961 | 200 | 4.4 | 175 | 3.8 | 375 | 4.1 |
| 1939 | 118 | 3.9 | 70 | 2.1 | 188 | 3.0 | 1962 | 261 | 5.5 | 248 | 5.4 | 509 | 5.5 |
| 1940 | 112 | 3.5 | 62 | 1.9 | 174 | 2.7 | 1963 | 384 | 8.2 | 340 | 7.2 | 724 | 7.7 |
| 1941 | 75 | 2.3 | 62 | 1.8 | 137 | 2.0 | 1964 | 316 | 6.6 | 371 | 7.8 | 687 | 7.2 |
| 1942 | 57 | 1.8 | 60 | 1.8 | 117 | 1.8 | 1965 | 359 | 7.4 | 424 | 8.6 | 783 | 8.0 |
| 1943 | 52 | 1.7 | 41 | 1.2 | 93 | 1.5 | 1966 | 339 | 6.8 | 414 | 8.3 | 753 | 7.6 |
| 1944 | 51 | 1.6 | 53 | 1.5 | 104 | 1.6 | 1967 | 338 | 6.6 | 397 | 7.9 | 735 | 7.3 |

*(continued)*

**Table A4.4 (continued): Suicide counts and rates for deaths due to exposure to poisons (except gas), by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1968 | 312 | 6.1 | 337 | 6.6 | 649 | 6.3 | 1991 | 232 | 2.8 | 188 | 2.2 | 420 | 2.5 |
| 1969 | 313 | 6.0 | 278 | 5.3 | 591 | 5.6 | 1992 | 202 | 2.4 | 179 | 2.1 | 381 | 2.2 |
| 1970 | 319 | 5.9 | 342 | 6.3 | 661 | 6.1 | 1993 | 179 | 2.1 | 143 | 1.7 | 322 | 1.9 |
| 1971 | 291 | 5.2 | 369 | 6.5 | 660 | 5.8 | 1994 | 212 | 2.5 | 152 | 1.7 | 364 | 2.1 |
| 1972 | 264 | 4.6 | 359 | 6.2 | 623 | 5.4 | 1995 | 225 | 2.6 | 163 | 1.8 | 388 | 2.2 |
| 1973 | 248 | 4.4 | 298 | 5.0 | 546 | 4.7 | 1996 | 193 | 2.2 | 173 | 1.9 | 366 | 2.0 |
| 1974 | 211 | 3.6 | 295 | 4.9 | 506 | 4.2 | 1997 | 187 | 2.1 | 153 | 1.7 | 340 | 1.9 |
| 1975 | 232 | 3.9 | 274 | 4.6 | 506 | 4.2 | 1998 | 169 | 1.8 | 150 | 1.6 | 319 | 1.7 |
| 1976 | 212 | 3.6 | 231 | 3.7 | 443 | 3.6 | 1999 | 175 | 1.9 | 132 | 1.4 | 307 | 1.6 |
| 1977 | 183 | 2.9 | 225 | 3.6 | 408 | 3.2 | 2000 | 186 | 2.0 | 128 | 1.3 | 314 | 1.7 |
| 1978 | 227 | 3.5 | 260 | 4.0 | 487 | 3.7 | 2001 | 168 | 1.8 | 139 | 1.4 | 307 | 1.6 |
| 1979 | 218 | 3.3 | 236 | 3.5 | 454 | 3.4 | 2002 | 177 | 1.9 | 144 | 1.5 | 321 | 1.6 |
| 1980 | 229 | 3.5 | 193 | 2.9 | 422 | 3.2 | 2003 | 161 | 1.7 | 128 | 1.3 | 289 | 1.5 |
| 1981 | 194 | 2.9 | 204 | 3.0 | 398 | 2.9 | 2004 | 148 | 1.5 | 112 | 1.1 | 260 | 1.3 |
| 1982 | 173 | 2.4 | 219 | 3.2 | 392 | 2.8 | 2005 | 139 | 1.4 | 122 | 1.2 | 261 | 1.3 |
| 1983 | 174 | 2.5 | 187 | 2.6 | 361 | 2.5 | 2006 | 128 | 1.3 | 138 | 1.3 | 266 | 1.3 |
| 1984 | 218 | 3.0 | 159 | 2.3 | 377 | 2.6 | 2007 | 142 | 1.4 | 176 | 1.6 | 318 | 1.5 |
| 1985 | 175 | 2.4 | 159 | 2.1 | 334 | 2.2 | 2008 | 192 | 1.8 | 142 | 1.3 | 334 | 1.6 |
| 1986 | 213 | 2.8 | 187 | 2.5 | 400 | 2.6 | 2009 | 174 | 1.6 | 176 | 1.6 | 350 | 1.6 |
| 1987 | 206 | 2.8 | 182 | 2.4 | 388 | 2.6 | 2010 | 154 | 1.4 | 158 | 1.4 | 312 | 1.4 |
| 1988 | 207 | 2.6 | 189 | 2.4 | 396 | 2.5 | | | | | | | |
| 1989 | 192 | 2.4 | 163 | 2.0 | 355 | 2.2 | | | | | | | |
| 1990 | 222 | 2.6 | 151 | 1.8 | 373 | 2.2 | | | | | | | |

(a) Year = Year of registration for 1921 to 1963 and year of death for 1964 to 2010.

*Source:* AIHW National Mortality Database and GRIM Books.

**Table A4.5: Suicide counts and rates for deaths due to exposure to gas (mostly CO), by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1922 | 2 | 0.0 | 0 | 0.0 | 2 | 0.0 | 1945 | 37 | 1.2 | 23 | 0.7 | 60 | 0.9 |
| 1923 | 6 | 0.3 | 8 | 0.4 | 14 | 0.3 | 1946 | 42 | 1.5 | 42 | 1.2 | 84 | 1.3 |
| 1924 | 7 | 0.3 | 5 | 0.3 | 12 | 0.3 | 1947 | 35 | 1.0 | 34 | 1.0 | 69 | 1.0 |
| 1925 | 10 | 0.4 | 4 | 0.0 | 14 | 0.3 | 1948 | 62 | 1.8 | 29 | 0.9 | 91 | 1.4 |
| 1926 | 14 | 0.5 | 6 | 0.2 | 20 | 0.4 | 1949 | 59 | 1.8 | 27 | 0.8 | 86 | 1.3 |
| 1927 | 13 | 0.6 | 3 | 0.0 | 16 | 0.4 | 1950 | 53 | 1.6 | 42 | 1.1 | 95 | 1.3 |
| 1928 | 25 | 1.0 | 12 | 0.5 | 37 | 0.8 | 1951 | 58 | 1.6 | 36 | 1.0 | 94 | 1.3 |
| 1929 | 23 | 1.0 | 14 | 0.5 | 37 | 0.7 | 1952 | 82 | 2.2 | 37 | 1.0 | 119 | 1.6 |
| 1930 | 49 | 1.9 | 9 | 0.3 | 58 | 1.1 | 1953 | 78 | 2.0 | 55 | 1.4 | 133 | 1.7 |
| 1931 | 39 | 1.5 | 14 | 0.5 | 53 | 1.0 | 1954 | 87 | 2.2 | 64 | 1.6 | 151 | 1.9 |
| 1932 | 31 | 1.1 | 24 | 0.9 | 55 | 1.0 | 1955 | 109 | 2.9 | 62 | 1.6 | 171 | 2.2 |
| 1933 | 40 | 1.4 | 18 | 0.6 | 58 | 1.0 | 1956 | 132 | 3.4 | 69 | 1.7 | 201 | 2.5 |
| 1934 | 41 | 1.5 | 29 | 1.0 | 70 | 1.2 | 1957 | 101 | 2.4 | 74 | 1.8 | 175 | 2.1 |
| 1935 | 44 | 1.4 | 13 | 0.5 | 57 | 0.9 | 1958 | 142 | 3.3 | 66 | 1.6 | 208 | 2.4 |
| 1936 | 43 | 1.4 | 35 | 1.2 | 78 | 1.3 | 1959 | 110 | 2.6 | 62 | 1.4 | 172 | 2.0 |
| 1937 | 45 | 1.5 | 23 | 0.8 | 68 | 1.1 | 1960 | 130 | 3.0 | 71 | 1.7 | 201 | 2.3 |
| 1938 | 38 | 1.2 | 17 | 0.5 | 55 | 0.9 | 1961 | 162 | 3.7 | 85 | 1.9 | 247 | 2.8 |
| 1939 | 51 | 1.6 | 32 | 1.1 | 83 | 1.3 | 1962 | 186 | 4.1 | 83 | 1.8 | 269 | 3.0 |
| 1940 | 36 | 1.1 | 35 | 1.1 | 71 | 1.1 | 1963 | 225 | 4.8 | 98 | 2.1 | 323 | 3.5 |
| 1941 | 54 | 1.7 | 20 | 0.6 | 74 | 1.2 | 1964 | 178 | 3.9 | 72 | 1.5 | 250 | 2.7 |
| 1942 | 45 | 1.5 | 25 | 0.8 | 70 | 1.1 | 1965 | 167 | 3.5 | 88 | 1.8 | 255 | 2.7 |
| 1943 | 37 | 1.3 | 23 | 0.7 | 60 | 1.0 | 1966 | 153 | 3.3 | 82 | 1.7 | 235 | 2.4 |
| 1944 | 42 | 1.4 | 48 | 1.4 | 90 | 1.4 | 1967 | 184 | 3.7 | 67 | 1.3 | 251 | 2.5 |

*(continued)*

**Table A4.5 (continued): Suicide counts and rates for deaths due to exposure to gas (mostly CO), by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1968 | 172 | 3.4 | 66 | 1.3 | 238 | 2.3 | 1991 | 418 | 5.0 | 66 | 0.8 | 484 | 2.9 |
| 1969 | 175 | 3.5 | 61 | 1.1 | 236 | 2.3 | 1992 | 399 | 4.7 | 59 | 0.7 | 458 | 2.6 |
| 1970 | 152 | 2.9 | 51 | 0.9 | 203 | 1.9 | 1993 | 344 | 3.9 | 54 | 0.6 | 398 | 2.2 |
| 1971 | 181 | 3.1 | 39 | 0.7 | 220 | 1.9 | 1994 | 407 | 4.7 | 61 | 0.7 | 468 | 2.7 |
| 1972 | 198 | 3.4 | 29 | 0.5 | 227 | 1.9 | 1995 | 426 | 4.8 | 98 | 1.1 | 524 | 2.9 |
| 1973 | 181 | 3.0 | 32 | 0.5 | 213 | 1.8 | 1996 | 463 | 5.2 | 77 | 0.9 | 540 | 3.0 |
| 1974 | 164 | 2.7 | 44 | 0.7 | 208 | 1.7 | 1997 | 495 | 5.5 | 107 | 1.2 | 602 | 3.3 |
| 1975 | 168 | 2.7 | 28 | 0.5 | 196 | 1.6 | 1998 | 483 | 5.3 | 80 | 0.9 | 563 | 3.0 |
| 1976 | 184 | 2.9 | 30 | 0.5 | 214 | 1.7 | 1999 | 469 | 5.0 | 100 | 1.1 | 569 | 3.0 |
| 1977 | 207 | 3.3 | 32 | 0.5 | 239 | 1.9 | 2000 | 443 | 4.8 | 97 | 1.0 | 540 | 2.8 |
| 1978 | 172 | 2.6 | 34 | 0.5 | 206 | 1.6 | 2001 | 400 | 4.2 | 82 | 0.8 | 482 | 2.5 |
| 1979 | 169 | 2.5 | 35 | 0.5 | 204 | 1.5 | 2002 | 354 | 3.7 | 67 | 0.7 | 421 | 2.2 |
| 1980 | 197 | 3.0 | 35 | 0.5 | 232 | 1.7 | 2003 | 301 | 3.1 | 70 | 0.7 | 371 | 1.9 |
| 1981 | 224 | 3.2 | 31 | 0.5 | 255 | 1.8 | 2004 | 320 | 3.3 | 63 | 0.6 | 383 | 1.9 |
| 1982 | 200 | 2.8 | 29 | 0.4 | 229 | 1.6 | 2005 | 274 | 2.7 | 45 | 0.4 | 319 | 1.6 |
| 1983 | 223 | 3.1 | 35 | 0.5 | 258 | 1.8 | 2006 | 227 | 2.2 | 44 | 0.4 | 271 | 1.3 |
| 1984 | 230 | 3.2 | 37 | 0.5 | 267 | 1.8 | 2007 | 195 | 1.9 | 43 | 0.4 | 238 | 1.1 |
| 1985 | 312 | 4.0 | 58 | 0.8 | 370 | 2.4 | 2008 | 207 | 2.0 | 28 | 0.3 | 235 | 1.1 |
| 1986 | 351 | 4.5 | 58 | 0.8 | 409 | 2.6 | 2009 | 200 | 1.8 | 40 | 0.4 | 240 | 1.1 |
| 1987 | 373 | 4.8 | 53 | 0.7 | 426 | 2.7 | 2010 | 182 | 1.7 | 33 | 0.3 | 215 | 1.0 |
| 1988 | 359 | 4.5 | 69 | 0.9 | 428 | 2.7 | | | | | | | |
| 1989 | 356 | 4.4 | 47 | 0.6 | 403 | 2.4 | | | | | | | |
| 1990 | 402 | 4.9 | 61 | 0.7 | 463 | 2.8 | | | | | | | |

(a) Year = Year of registration for 1921 to 1963 and year of death for 1964 to 2010.

*Source:* AIHW National Mortality Database and GRIM Books.

**Table A4.6: Suicide counts and rates for deaths due to other mechanisms, by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1922 | 159 | 8.7 | 36 | 1.7 | 195 | 5.3 | 1945 | 105 | 3.6 | 59 | 1.8 | 164 | 2.7 |
| 1923 | 155 | 7.1 | 39 | 1.6 | 194 | 4.5 | 1946 | 135 | 4.5 | 65 | 2.0 | 200 | 3.2 |
| 1924 | 176 | 8.6 | 37 | 1.5 | 213 | 5.1 | 1947 | 151 | 5.0 | 57 | 1.7 | 208 | 3.3 |
| 1925 | 190 | 9.0 | 46 | 1.9 | 236 | 5.5 | 1948 | 121 | 4.2 | 41 | 1.3 | 162 | 2.7 |
| 1926 | 187 | 7.9 | 47 | 1.9 | 234 | 5.0 | 1949 | 135 | 4.3 | 48 | 1.3 | 183 | 2.8 |
| 1927 | 163 | 7.0 | 34 | 1.4 | 197 | 4.2 | 1950 | 111 | 3.6 | 50 | 1.3 | 161 | 2.4 |
| 1928 | 170 | 7.3 | 37 | 1.6 | 207 | 4.5 | 1951 | 136 | 3.9 | 58 | 1.5 | 194 | 2.7 |
| 1929 | 173 | 6.8 | 40 | 1.5 | 213 | 4.2 | 1952 | 141 | 4.1 | 58 | 1.5 | 199 | 2.7 |
| 1930 | 207 | 8.4 | 47 | 1.8 | 254 | 5.2 | 1953 | 146 | 4.3 | 56 | 1.5 | 202 | 2.8 |
| 1931 | 177 | 7.2 | 53 | 2.0 | 230 | 4.6 | 1954 | 128 | 3.6 | 48 | 1.2 | 176 | 2.3 |
| 1932 | 188 | 7.6 | 42 | 1.6 | 230 | 4.6 | 1955 | 113 | 2.9 | 49 | 1.2 | 162 | 2.0 |
| 1933 | 181 | 6.9 | 42 | 1.5 | 223 | 4.2 | 1956 | 121 | 3.2 | 55 | 1.3 | 176 | 2.2 |
| 1934 | 183 | 6.9 | 56 | 1.9 | 239 | 4.5 | 1957 | 113 | 3.1 | 62 | 1.5 | 175 | 2.2 |
| 1935 | 143 | 5.3 | 49 | 1.7 | 192 | 3.5 | 1958 | 122 | 3.5 | 59 | 1.4 | 181 | 2.3 |
| 1936 | 149 | 5.8 | 45 | 1.5 | 194 | 3.7 | 1959 | 123 | 3.1 | 52 | 1.4 | 175 | 2.2 |
| 1937 | 164 | 6.4 | 43 | 1.5 | 207 | 3.9 | 1960 | 105 | 2.8 | 49 | 1.1 | 154 | 1.9 |
| 1938 | 154 | 5.4 | 46 | 1.5 | 200 | 3.4 | 1961 | 105 | 2.4 | 48 | 1.0 | 153 | 1.7 |
| 1939 | 138 | 5.5 | 44 | 1.4 | 182 | 3.4 | 1962 | 91 | 2.1 | 69 | 1.5 | 160 | 1.8 |
| 1940 | 123 | 4.6 | 46 | 1.5 | 169 | 3.0 | 1963 | 105 | 2.6 | 73 | 1.6 | 178 | 2.0 |
| 1941 | 125 | 4.9 | 45 | 1.4 | 170 | 3.1 | 1964 | 122 | 2.8 | 59 | 1.2 | 181 | 2.0 |
| 1942 | 125 | 4.2 | 43 | 1.3 | 168 | 2.7 | 1965 | 110 | 2.4 | 61 | 1.3 | 171 | 1.8 |
| 1943 | 110 | 3.9 | 36 | 1.2 | 146 | 2.5 | 1966 | 109 | 2.6 | 55 | 1.1 | 164 | 1.8 |
| 1944 | 92 | 3.4 | 43 | 1.3 | 135 | 2.3 | 1967 | 107 | 2.4 | 87 | 1.7 | 194 | 2.0 |

*(continued)*

**Table A4.6 (continued): Suicide counts and rates for deaths due to other mechanisms, by sex, Australia, 1921 to 2010**

| | Males | | Females | | Persons | | | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year[(a)] | Count | Rate | Count | Rate | Count | Rate | Year[(a)] | Count | Rate | Count | Rate | Count | Rate |
| 1968 | 98 | 2.3 | 62 | 1.2 | 160 | 1.6 | 1991 | 216 | 2.6 | 103 | 1.2 | 319 | 1.9 |
| 1969 | 106 | 2.4 | 69 | 1.3 | 175 | 1.7 | 1992 | 234 | 2.8 | 105 | 1.2 | 339 | 2.0 |
| 1970 | 122 | 2.6 | 66 | 1.2 | 188 | 1.9 | 1993 | 220 | 2.6 | 100 | 1.1 | 320 | 1.9 |
| 1971 | 117 | 2.4 | 87 | 1.6 | 204 | 1.9 | 1994 | 294 | 3.4 | 83 | 0.9 | 377 | 2.1 |
| 1972 | 104 | 2.0 | 73 | 1.3 | 177 | 1.6 | 1995 | 262 | 3.0 | 100 | 1.1 | 362 | 2.0 |
| 1973 | 121 | 2.2 | 79 | 1.3 | 200 | 1.7 | 1996 | 245 | 2.7 | 72 | 0.8 | 317 | 1.7 |
| 1974 | 124 | 2.3 | 89 | 1.5 | 213 | 1.9 | 1997 | 294 | 3.3 | 114 | 1.2 | 408 | 2.2 |
| 1975 | 141 | 2.5 | 79 | 1.3 | 220 | 1.8 | 1998 | 244 | 2.7 | 93 | 1.0 | 337 | 1.8 |
| 1976 | 132 | 2.2 | 75 | 1.2 | 207 | 1.7 | 1999 | 226 | 2.5 | 86 | 0.9 | 312 | 1.7 |
| 1977 | 149 | 2.4 | 91 | 1.4 | 240 | 1.9 | 2000 | 231 | 2.5 | 85 | 0.9 | 316 | 1.7 |
| 1978 | 120 | 1.9 | 92 | 1.4 | 212 | 1.6 | 2001 | 250 | 2.7 | 83 | 0.8 | 333 | 1.7 |
| 1979 | 147 | 2.3 | 91 | 1.4 | 238 | 1.8 | 2002 | 258 | 2.7 | 83 | 0.8 | 341 | 1.7 |
| 1980 | 148 | 2.4 | 86 | 1.3 | 234 | 1.8 | 2003 | 237 | 2.4 | 92 | 0.9 | 329 | 1.7 |
| 1981 | 178 | 3.1 | 110 | 1.7 | 288 | 2.2 | 2004 | 216 | 2.2 | 83 | 0.8 | 299 | 1.5 |
| 1982 | 187 | 2.9 | 107 | 1.5 | 294 | 2.1 | 2005 | 220 | 2.2 | 76 | 0.7 | 296 | 1.5 |
| 1983 | 175 | 2.6 | 81 | 1.1 | 256 | 1.8 | 2006 | 224 | 2.2 | 99 | 0.9 | 323 | 1.6 |
| 1984 | 168 | 2.3 | 101 | 1.4 | 269 | 1.8 | 2007 | 247 | 2.4 | 90 | 0.9 | 337 | 1.6 |
| 1985 | 183 | 2.6 | 92 | 1.2 | 275 | 1.9 | 2008 | 279 | 2.6 | 107 | 1.0 | 386 | 1.8 |
| 1986 | 206 | 2.8 | 103 | 1.4 | 309 | 2.1 | 2009 | 269 | 2.5 | 98 | 0.9 | 367 | 1.7 |
| 1987 | 214 | 2.8 | 87 | 1.1 | 301 | 2.0 | 2010 | 256 | 2.3 | 94 | 0.8 | 350 | 1.6 |
| 1988 | 238 | 3.0 | 84 | 1.1 | 322 | 2.0 | | | | | | | |
| 1989 | 218 | 2.7 | 100 | 1.2 | 318 | 1.9 | | | | | | | |
| 1990 | 217 | 2.7 | 95 | 1.2 | 312 | 1.9 | | | | | | | |

(a) Year = Year of registration for 1921 to 1963 and year of death for 1964 to 2010.

*Source:* AIHW National Mortality Database and GRIM Books.

**Table A4.7: Counts and rates of hospitalisation due to intentional self-harm, by sex, Australia, 1999–00 to 2011–12**

| | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|
| Year of hospitalisation | Count | Rate | Count | Rate | Count | Rate |
| 1999–00 | 8,297 | 87.5 | 11,940 | 125.7 | 20,237 | 106.4 |
| 2000–01 | 9,157 | 95.9 | 13,356 | 139.4 | 22,513 | 117.4 |
| 2001–02 | 8,916 | 92.6 | 13,621 | 140.8 | 22,538 | 116.4 |
| 2002–03 | 8,731 | 89.9 | 13,741 | 140.6 | 22,472 | 114.9 |
| 2003–04 | 8,723 | 88.8 | 14,230 | 144.4 | 22,953 | 116.3 |
| 2004–05 | 9,017 | 90.8 | 14,866 | 149.6 | 23,883 | 119.8 |
| 2005–06 | 9,103 | 90.5 | 14,669 | 145.9 | 23,774 | 117.8 |
| 2006–07 | 9,078 | 88.8 | 14,692 | 144.0 | 23,773 | 116.1 |
| 2007–08 | 9,090 | 87.0 | 14,780 | 142.4 | 23,873 | 114.4 |
| 2008–09 | 9,640 | 90.5 | 15,980 | 150.9 | 25,620 | 120.3 |
| 2009–10 | 9,849 | 91.0 | 16,482 | 153.1 | 26,331 | 121.6 |
| 2010–11 | 9,748 | 88.8 | 16,314 | 150.0 | 26,062 | 119.0 |
| 2011–12 | 9,943 | 89.4 | 17,165 | 156.6 | 27,112 | 122.5 |

*Source:* AIHW National Morbidity Database.

**Table A4.8: Counts and rates of hospitalisation due to intentional self-harm as a result of exposure to poisons (except gas), by sex, Australia, 1999–00 to 2011–12**

| | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|
| Year of hospitalisation | Count | Rate | Count | Rate | Count | Rate |
| 1999–00 | 6,359 | 67.0 | 10,683 | 112.5 | 17,042 | 89.6 |
| 2000–01 | 6,969 | 73.0 | 12,022 | 125.5 | 18,991 | 99.0 |
| 2001–02 | 6,634 | 68.9 | 12,131 | 125.4 | 18,766 | 96.9 |
| 2002–03 | 6,428 | 66.2 | 12,093 | 123.7 | 18,521 | 94.7 |
| 2003–04 | 6,434 | 65.5 | 12,425 | 126.0 | 18,859 | 95.5 |
| 2004–05 | 6,555 | 66.0 | 12,787 | 128.5 | 19,342 | 96.9 |
| 2005–06 | 6,542 | 65.0 | 12,599 | 125.2 | 19,143 | 94.8 |
| 2006–07 | 6,548 | 64.1 | 12,683 | 124.1 | 19,234 | 93.9 |
| 2007–08 | 6,652 | 63.7 | 12,650 | 121.7 | 19,305 | 92.4 |
| 2008–09 | 7,112 | 66.8 | 13,607 | 128.3 | 20,719 | 97.2 |
| 2009–10 | 7,273 | 67.2 | 14,099 | 130.8 | 21,372 | 98.6 |
| 2010–11 | 7,124 | 64.9 | 13,892 | 127.6 | 21,016 | 95.8 |
| 2011–12 | 7,402 | 66.6 | 14,731 | 134.2 | 22,137 | 100.0 |

*Source:* AIHW National Morbidity Database.

**Table A4.9: Counts and rates of hospitalisation due to intentional self-harm as a result of contact with a sharp object, by sex, Australia, 1999–00 to 2011–12**

| | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|
| Year of hospitalisation | Count | Rate | Count | Rate | Count | Rate |
| 1999–00 | 1,058 | 11.1 | 885 | 9.3 | 1,943 | 10.2 |
| 2000–01 | 1,272 | 13.3 | 961 | 10.0 | 2,233 | 11.6 |
| 2001–02 | 1,325 | 13.8 | 1,063 | 11.0 | 2,388 | 12.3 |
| 2002–03 | 1,410 | 14.5 | 1,208 | 12.4 | 2,618 | 13.4 |
| 2003–04 | 1,389 | 14.2 | 1,345 | 13.7 | 2,734 | 13.9 |
| 2004–05 | 1,481 | 14.9 | 1,607 | 16.3 | 3,088 | 15.5 |
| 2005–06 | 1,534 | 15.3 | 1,583 | 15.9 | 3,117 | 15.5 |
| 2006–07 | 1,599 | 15.6 | 1,561 | 15.5 | 3,160 | 15.5 |
| 2007–08 | 1,519 | 14.6 | 1,640 | 15.9 | 3,159 | 15.2 |
| 2008–09 | 1,509 | 14.1 | 1,747 | 16.7 | 3,256 | 15.3 |
| 2009–10 | 1,549 | 14.3 | 1,787 | 16.8 | 3,336 | 15.5 |
| 2010–11 | 1,577 | 14.3 | 1,811 | 16.9 | 3,388 | 15.5 |
| 2011–12 | 1,485 | 13.3 | 1,769 | 16.3 | 3,254 | 14.7 |

*Source:* AIHW National Morbidity Database.

**Table A4.10: Counts and rates of hospitalisation due to intentional self-harm as a result of hanging, by sex, Australia, 1999–00 to 2011–12**

| | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|
| Year of hospitalisation | Count | Rate | Count | Rate | Count | Rate |
| 1999–00 | 229 | 2.4 | 60 | 0.6 | 289 | 1.5 |
| 2000–01 | 245 | 2.6 | 69 | 0.7 | 314 | 1.6 |
| 2001–02 | 269 | 2.8 | 105 | 1.1 | 374 | 1.9 |
| 2002–03 | 260 | 2.7 | 112 | 1.2 | 372 | 1.9 |
| 2003–04 | 276 | 2.8 | 115 | 1.2 | 391 | 2.0 |
| 2004–05 | 306 | 3.1 | 128 | 1.3 | 434 | 2.2 |
| 2005–06 | 352 | 3.5 | 139 | 1.4 | 491 | 2.5 |
| 2006–07 | 312 | 3.1 | 133 | 1.3 | 445 | 2.2 |
| 2007–08 | 316 | 3.0 | 145 | 1.4 | 461 | 2.2 |
| 2008–09 | 392 | 3.7 | 166 | 1.6 | 558 | 2.6 |
| 2009–10 | 383 | 3.6 | 162 | 1.5 | 545 | 2.5 |
| 2010–11 | 404 | 3.7 | 177 | 1.7 | 581 | 2.7 |
| 2011–12 | 442 | 4.0 | 251 | 2.3 | 693 | 3.2 |

*Source:* AIHW National Morbidity Database.

**Table A4.11: Counts and rates of hospitalisation due to intentional self-harm as a result of exposure to gaseous substances, by sex, Australia, 1999–00 to 2011–12**

| | Males | | Females | | Persons | |
|---|---|---|---|---|---|---|
| Year of hospitalisation | Count | Rate | Count | Rate | Count | Rate |
| 1999–00 | 297 | 3.2 | 104 | 1.1 | 401 | 2.1 |
| 2000–01 | 328 | 3.5 | 122 | 1.3 | 450 | 2.3 |
| 2001–02 | 310 | 3.2 | 106 | 1.1 | 416 | 2.1 |
| 2002–03 | 267 | 2.7 | 80 | 0.8 | 347 | 1.8 |
| 2003–04 | 278 | 2.8 | 118 | 1.2 | 396 | 2.0 |
| 2004–05 | 287 | 2.9 | 106 | 1.1 | 393 | 2.0 |
| 2005–06 | 274 | 2.7 | 113 | 1.1 | 387 | 1.9 |
| 2006–07 | 232 | 2.3 | 79 | 0.8 | 311 | 1.5 |
| 2007–08 | 226 | 2.2 | 71 | 0.7 | 297 | 1.4 |
| 2008–09 | 251 | 2.4 | 108 | 1.0 | 359 | 1.7 |
| 2009–10 | 233 | 2.2 | 84 | 0.8 | 317 | 1.5 |
| 2010–11 | 231 | 2.1 | 83 | 0.8 | 314 | 1.4 |
| 2011–12 | 233 | 2.1 | 84 | 0.7 | 317 | 1.4 |

*Source:* AIHW National Morbidity Database.

# Glossary

**additional diagnosis:** A diagnosis established after study to be a contributing factor to, or affecting, the patient's episode of care in hospital (or attendance at the health-care facility).

**age-standardisation:** A method of removing the influence of age when comparing populations with different age structures. This is usually necessary because the rates of many diseases vary strongly (usually increasing) with age. The age structures of the different populations are converted to the same 'standard' structure, and then the disease rates that would have occurred with that structure are calculated and compared.

**Indigenous Australian:** A person of Aboriginal descent who identifies as an Aboriginal and is accepted as such by the community in which he or she lives.

**external cause:** The term used in disease classification to refer to an event or circumstance in a person's external environment that is regarded as a cause of injury or poisoning.

**multiple cause of death:** Any cause listed on the death certificate including both the underlying cause as well as all associated causes.

**principal diagnosis:** The diagnosis listed in hospital records to describe the problem that was chiefly responsible for hospitalisation.

**separation:** a process by which an episode of care for an admitted patient ceases. A separation may be formal or statistical.

**underlying cause of death:** The condition, disease or injury initiating the sequence of events leading directly to death, that is, the primary or main cause.

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# List of tables

# List of figures

# Related publications

The following AIHW publications relating to suicide and hospitalised intentional self-harm might also be of interest:

- Steenkamp M & Harrison JE 2000. Suicide and hospitalised self-harm in Australia. Cat. no. INJCAT 30. Canberra: AIHW.

This report describes suicide and hospitalised self-harm in Australia.

Suicide occurring in 2010–11 is described statistically, and trends are shown for the period from the early 1920s. Patterns of suicide over time were also examined for selected birth cohorts.

Hospitalised intentional self-harm in 2010–11 is also described, and trends are examined for the period from 1999–00.

Both suicide and hospitalised intentional self-harm are analysed by mechanism of injury, sex, age group, Indigenous status and other factors.