Australian Bureau of Statistics

2010

3302.0

DEATHS

AUSTRALIA

EMBARGO: 11.30AM (CANBERRA TIME) THURS 10 NOV 2011

CONTENTS

INQUIRIES

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070 or Tracey Coomber on Canberra (02) 6252 5406.

NOTES

ABOUT THIS ISSUE

This publication brings together statistics on deaths and mortality in Australia. Data refer to deaths registered during the calendar year shown, unless otherwise stated. State or territory relates to state or territory of usual residence, unless otherwise stated.

Populations used in the calculation of death rates for 2006 and earlier years are the final estimated resident population by age and sex based on results of the *2006 Census of Population and Housing* (2006 Census) and earlier censuses. Death rates for 2009 are calculated using revised 30 June 2009 estimated resident population, while rates for 2010 are calculated using preliminary 30 June 2010 estimated resident population.

CHANGES IN THIS ISSUE

Death rates for 2009 have been revised using revised 30 June 2009 estimated resident population.

Standardised death rates by country of birth have replaced indirect standardised death rates.

A feature article is included on mortality analysis by remoteness areas. See *Chapter 5: Mortality analysis by Remoteness Areas* for more information.

A data cube containing death statistics by remoteness area has been released and is available for download from the ABS website. See data cube *Table 7: Deaths, Summary, Remoteness Areas, 2005 to 2010*.

Deaths of Aboriginal and Torres Strait Islander Australians registered in Queensland in 2010

A technical note is included on unusual volatility in the number of deaths of Aboriginal and Torres Strait Islander Australians registered in Queensland in 2010. See *Technical Note: Registration of outstanding deaths, Queensland, 2010* for more information.

Deaths of Aboriginal and Torres Strait Islander Australians registered in Western Australia in recent years

The number of deaths of Aboriginal and Torres Strait Islander Australians registered in Western Australia has fluctuated significantly over the 2006 to 2009 reference years. Preliminary investigations conducted by the ABS through cross-checking these deaths with other variables such as country of birth and age at death indicated a data quality issue resulting in an over-reporting of deaths of Aboriginal and Torres Strait Islander people for 2007 and 2008. Since the preliminary ABS investigations, the Western Australian Registry of Births, Deaths and Marriages has examined the original death registration forms for a sample of relevant records and advised the ABS of a system error which has led to some non-Indigenous deaths being recorded as Aboriginal and/or Torres Strait Islander deaths in 2007 and 2008. At this stage it is possible that some records in 2009 are also affected. An initial examination of 2010 data indicates that death registrations for Aboriginal and Torres Strait Islander Australians have returned to pre-2007 levels. However, ABS is awaiting confirmation that the system error has had no impact on the 2010 Western Australia death registrations although this is expected to be the case. Pending resolution of this matter, deaths by Indigenous status for Western Australia for 2007, 2008 and 2009 in this publication have been suppressed.

CHANGES IN FUTURE ISSUES

Future issues of this publication will release sub-state death statistics under the new Australian Statistical Geography Standard (ASGS) (see *Appendix: ASGS and the availability of sub-state death statistics*).

Review

The content within this publication is currently being reviewed which may affect future issues.

LIFE TABLES

On release of this publication, life tables for Australia and the states and territories for the period 2008–2010 will be available on the ABS website:

- Australia (cat. no. 3302.0.55.001)
- New South Wales (cat. no. 3302.1.55.001)
- Victoria (cat. no. 3302.2.55.001)
- Queensland (cat. no. 3302.3.55.001)
- South Australia (cat. no. 3302.4.55.001)
- Western Australia (cat. no. 3302.5.55.001)
- Tasmania (cat. no. 3302.6.55.001)
- Northern Territory (cat. no. 3302.7.55.001)
- Australian Capital Territory (cat. no. 3302.8.55.001)

ROUNDING

Calculations as shown in the commentary sections of this publication are based on unrounded figures. Calculations using rounded figures may differ from those published.

It is recommended that when using information presented in this publication, the relevant statistics be rounded. All data are affected by errors in reporting and processing. Death registrations data are also affected by delays in registration.

CAUSES OF DEATH AND PERINATAL DEATHS

Causes of death information is published under the 3303.0 product family. See *Causes of Death, Australia: Doctor Certified Deaths, Summary Tables* (cat. no. 3303.0.55.001) and *Causes of Death, Australia* (cat. no. 3303.0) for more information.

Perinatal death statistics are published in *Perinatal Deaths, Australia* (cat. no. 3304.0).

ACKNOWLEDGEMENT

The efforts of Registries of Births, Deaths and Marriages to improve the data quality, coverage and timeliness of death registration information, processes and systems are noted and valued by the ABS.

CONFIDENTIALITY

Where necessary, tables have had small values suppressed or randomised to protect confidentiality. As a result, sums of components may not add to totals.

Brian Pink
Australian Statistician

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DEATHS, AUSTRALIA (CAT. NO. 3302.0) DATA CUBES AVAILABLE FROM THE ABS WEBSITE

RELATED DATA CUBES AVAILABLE FROM THE ABS WEBSITE

LIFE TABLES, 2008–2010

Australia (cat. no. 3302.0.55.001)
New South Wales (cat. no. 3302.1.55.001)
Victoria (cat. no. 3302.2.55.001)
Queensland (cat. no. 3302.3.55.001)
South Australia (cat. no. 3302.4.55.001)
Western Australia (cat. no. 3302.5.55.001)
Tasmania (cat. no. 3302.6.55.001)
Northern Territory (cat. no. 3302.7.55.001)
Australian Capital Territory (cat. no. 3302.8.55.001)

AUSTRALIAN HISTORICAL POPULATION STATISTICS (cat. no. 3105.0.65.001)

ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ASDR	age-specific death rate
ASGC	Australian Standard Geographical Classification
ASGS	Australian Statistical Geography Standard
Aust.	Australia
cat. no.	Catalogue number
DRF	death registration form
ERP	estimated resident population
IMR	infant mortality rate
ISDR	indirect standardised death rate
LGA	local government area
MCCD	medical certificate of cause of death
no.	number
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
RA	Remoteness Area
SA	South Australia
SACC	Standard Australian Classification of Countries
SAR	Special Administrative Region
SD	statistical division
SDR	standardised death rate
SLA	statistical local area
SSD	statistical subdivision
Tas.	Tasmania
UNSD	United Nations Statistics Division
Vic.	Victoria
WA	Western Australia

CHAPTER 1 MAIN FEATURES

DEATHS AND MORTALITY RATES

- There were 143,500 deaths registered in Australia in 2010, approximately 2,700 (1.9%) more than the number registered in 2009 (140,800).
- The standardised death rate (SDR) decreased to 5.7 deaths per 1,000 standard population in 2010, down from 5.8 in 2009.
- Over the past 20 years, SDRs have decreased for all states and territories.
- In 2010, the Northern Territory recorded the highest SDR (7.7 deaths per 1,000 standard population), and the Australian Capital Territory recorded the lowest (5.3 deaths per 1,000 standard population).
- Over the past 20 years, death rates have declined for both males and females for all age groups. The largest proportional decreases in male age-specific death rates over this period occurred for ages 1–4 years (down 57%) and 20–24 years (down 55%). The largest proportional decrease (down 53%) was found in the female zero year old population, followed by females aged 1–4 years and 10–14 years (both down 50%).

LIFE EXPECTANCY AT BIRTH

- Over the past 20 years, life expectancy at birth has improved by 5.6 years for males and just under 3.9 years for females. Based on current mortality rates, a boy born in 2008–2010 can expect to live 79.5 years, while a girl can expect to live 84.0 years.
- According to United Nations estimates for 2005–10, Australia's life expectancy at birth is ranked among the highest in the world.

CHILD MORTALITY (0–4 YEARS)

- In 2010, there were 1,500 deaths of children aged 0–4 years registered in Australia (870 male and 590 female).

INFANT DEATHS

- In 2010, there were 1,200 infant deaths (deaths of children less than one year of age) registered in Australia, 2.5% less than the number registered in 2009 (1,300).
- The infant mortality rate in 2010 was 4.1 infant deaths per 1,000 live births, a small decrease on the rate in 2009 (4.3 infant deaths per 1,000 live births).

DEATHS OF ABORIGINAL AND TORRES STRAIT ISLANDER AUSTRALIANS

- There were 2,800 deaths registered in Australia in 2010 where the deceased person was recorded as being an Aboriginal, Torres Strait Islander, or both.

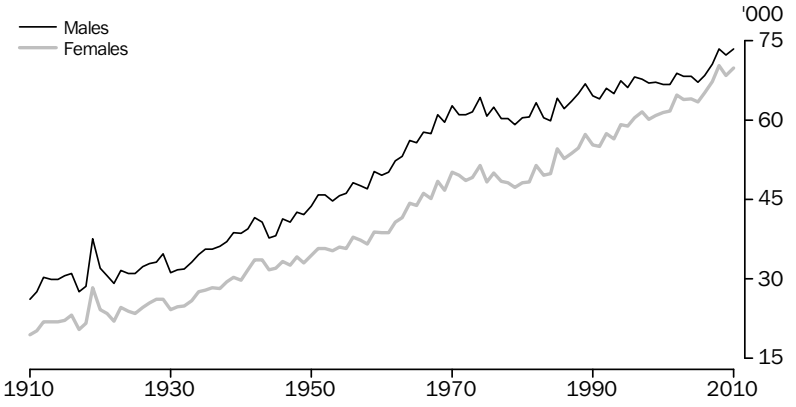
CHAPTER 2 SUMMARY OF FINDINGS

MORTALITY

During 2010, there were 143,500 deaths (73,500 males and 70,000 females) registered in Australia. This was an increase of 2,700 deaths (1.9%) more than the number of deaths registered in 2009 (140,800). From 1990 the number of deaths registered has increased by around 0.6% per year on average for males and 1.2% per year for females, with year-to-year fluctuations.

The steady increase in the number of deaths over time reflects the increasing size of the population and, in particular, the increasing number of older people. With the continued ageing of the population, the number of deaths is projected to continue to increase throughout the middle of the century (see graph 2.16).

2.1 DEATHS REGISTERED—1910 to 2010



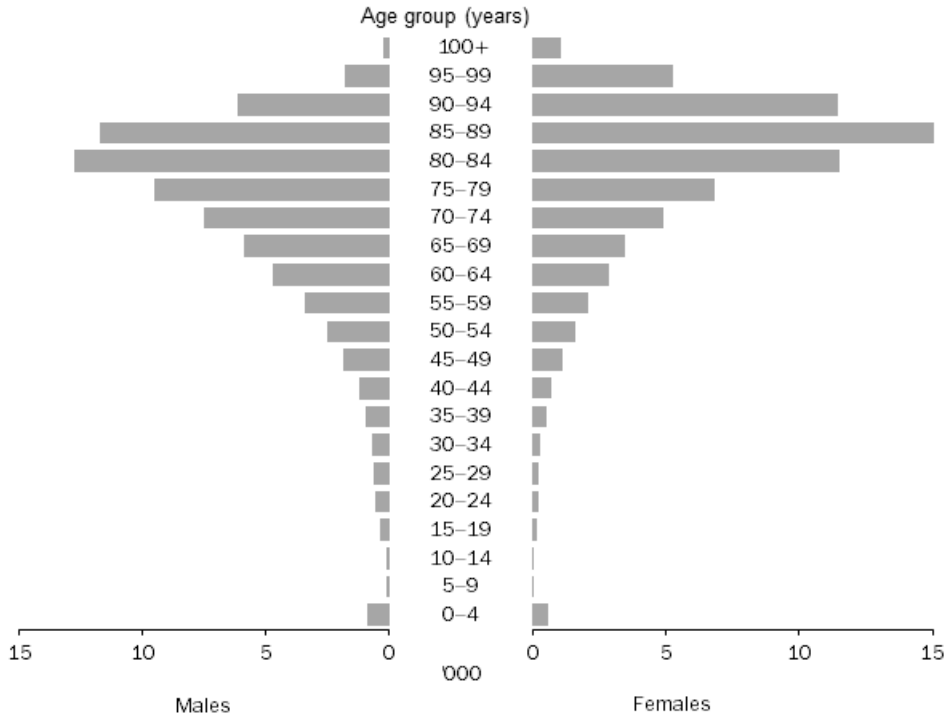
Source: Australian Historical Population Statistics (3105.0.65.001); Deaths, Australia (3302.0).

Male and female deaths

There were more male deaths (73,500) registered in 2010 than female deaths (70,000), resulting in a sex ratio of 105.0 male deaths for every 100 female deaths. This ratio has decreased over time, with 116.7 male deaths for every 100 female deaths in 1990.

The distribution of deaths registered in 2010 by age group and sex is illustrated in graph 2.2.

2.2 DEATHS, Australia, Age(a) and sex—2010



(a) Excludes deaths for which age of death was not stated.

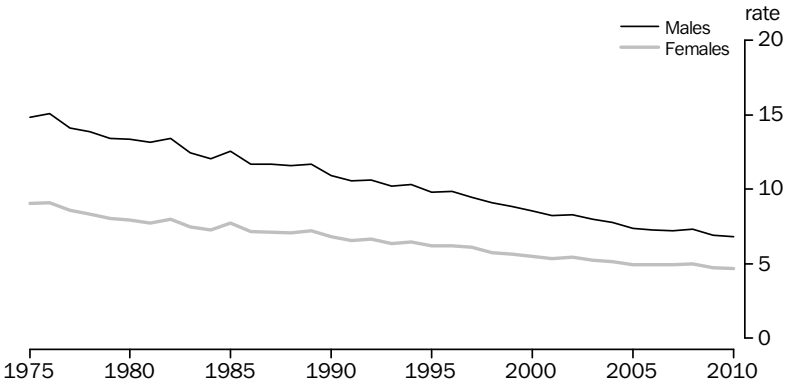
MORTALITY RATES

Australia

Given the ageing of Australia's population, the overall decline in the crude death rate indicates a considerable decline in age-specific death rates over the period. In 1990, the crude death rate was 7.0 deaths per 1,000 population, decreasing to 6.4 in 2010.

The standardised death rate (SDR), which takes into account the effect of changes in the age structure of Australia's population over time, has also decreased over the past 20 years. In 1990, the SDR was 8.6 deaths per 1,000 standard population, which has decreased to 5.7 in 2010 (a decrease of 34%). See Glossary for more information on how standardised death rates are calculated.

2.3 STANDARDISED DEATH RATES(a), Australia—1975 to 2010



(a) Deaths per 1,000 standard population. Standardised death rates are calculated using the total persons in the Australian population at 30 June 2001 as the standard population.

Australia continued

While male mortality rates remain higher than female mortality rates, the difference has narrowed in the past 20 years. In 1990, the SDR for males was 4.1 deaths higher than the SDR for females, while in 2010 the male SDR was 2.1 deaths higher than the female rate.

Remoteness areas

The ABS recently conducted exploratory analysis of mortality patterns by Remoteness Area (RA) for the period 2005 to 2010. The analysis showed that mortality rates were much lower in major cities than in regional and remote areas, at the Australia level and for all states and territories.

In 2010, the standardised death rate was lowest in Australia's Major Cities, with 5.7 deaths per 1,000 standard population, followed by Inner Regional (6.2), Outer Regional (6.4), Remote (6.8) and Very Remote (8.1).

Infant mortality shows a similar pattern in respect of remoteness areas. In 2010, the infant mortality rate was lowest in Major Cities (3.9 deaths per 1000 live births) and highest in Very Remote areas (8.8 deaths per 1000 live births).

For more information see *Chapter 5: Mortality analysis by Remoteness Areas* and data cube *Table 7: Deaths, Summary, Remoteness Areas–2005 to 2010*.

States and territories

Over the past 20 years, all states and territories have experienced overall declines in SDRs, with the Northern Territory experiencing the largest decline (from 13.1 deaths per 1,000 standard population in 1990 to 7.7 in 2010) and Western Australia experiencing the smallest decline (from 7.9 to 5.5 over the same period).

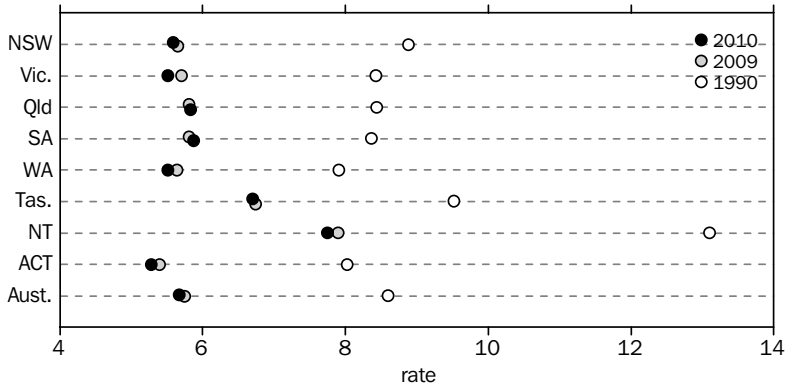
In 2010, the Northern Territory's SDR of 7.7 deaths per 1,000 standard population remained much higher than that in other states and territories, while Tasmania recorded the second highest SDR (6.7). The lowest SDR was recorded in the Australian Capital Territory, with 5.3 deaths per 1,000 standard population.

Care should be taken when interpreting data for Queensland for 2010, as these data have been affected by the registration of outstanding deaths initiative undertaken by the Queensland Registry of Births, Deaths and Marriages. This initiative resulted in 374 outstanding deaths being registered. Of these, approximately 76% were deaths of Aboriginal and Torres Strait Islander persons (see *Technical Note: Registration of outstanding deaths, Queensland, 2010*, and paragraph 36 of the Explanatory Notes for more information).

States and territories

continued

2.4 STANDARDISED DEATH RATES(a), States and territories—1990, 2009 and 2010



(a) Deaths per 1,000 standard population. Standardised death rates are calculated using the total persons in the Australian population at 30 June 2001 as the standard population.

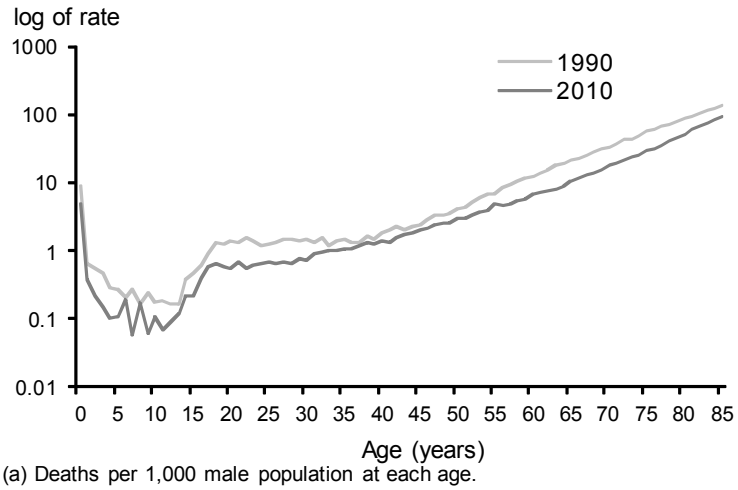
AGE-SPECIFIC DEATH RATES

Following relatively high rates of death in infancy, death rates decline sharply through childhood. In 2010, people aged 5–9 years and 10–14 years had the lowest age-specific death rates (ASDRs) in Australia. ASDRs begin to increase from around 15 years of age. For nearly all age groups, ASDRs are higher for males than for females. The exceptions are in the age groups 1–4 years, 5–9 years and 10–14 years, where the ASDRs for males and females are the same.

Age-specific death rates for males increase gradually until around age 40–44 years, where they begin to increase more quickly throughout the older age groups (graph 2.5). Age-specific death rates for females aged 15 to 34 years are relatively low and constant. Steady increases in female ASDRs are evident beyond 45–49 years of age and continue throughout the older age groups (graph 2.6).

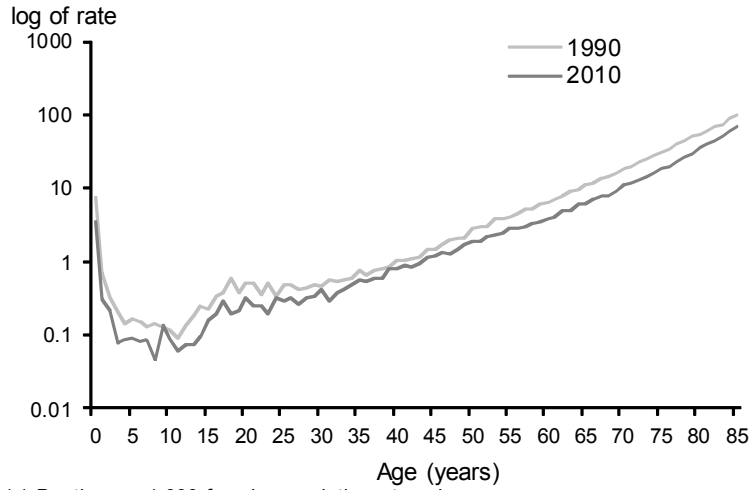
Over the past 20 years, death rates have declined overall for both males and females for all ages. The largest proportional decreases have occurred in the younger age groups.

2.5 AGE-SPECIFIC DEATH RATES(a), Males—1990 and 2010



(a) Deaths per 1,000 male population at each age.

2.6 AGE-SPECIFIC DEATH RATES(a), Females—1990 and 2010

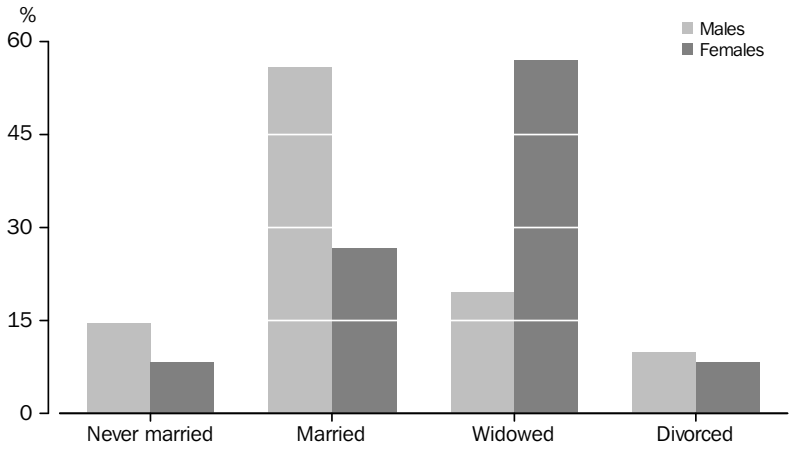


(a) Deaths per 1,000 female population at each age.

MARITAL STATUS

Around 98% of men and women whose death was registered in 2010 recorded a known marital status. For men 56% were in a registered marriage at the time of death, 20% were widowed, 15% were never married and 10% were divorced. In contrast, 27% of women were in a registered marriage, 57% were widowed, 8% were never married and a further 8% were divorced. These differences are a consequence of the greater longevity of women.

2.7 DEATHS, Registered marital status—2010

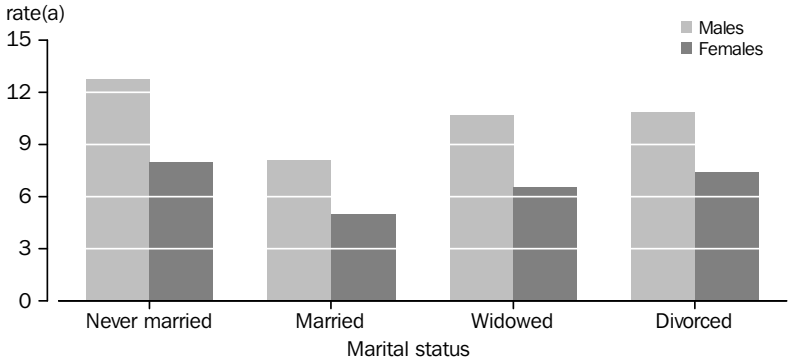


As estimated resident population (ERP) by marital status is only available for Census years, the most recent standardised death rates (SDRs) by marital status are for 2006. In the calculation of SDRs by marital status the number of deaths and the population aged 15 years and over is used.

MARITAL STATUS *continued*

SDRs by registered marital status show that males and females who had never married had higher SDRs (12.8 and 8.0 deaths per 1,000 standard population respectively) than their married counterparts (8.1 and 5.0 respectively). Men and women who were widowed had similar death rates to those who were divorced.

2.8 STANDARDISED DEATH RATES(a), Registered marital status—2006



(a) Deaths per 1,000 standard population aged 15 years and over. Standardised death rates are calculated using the total persons in the Australian population at 30 June 2001, aged 15 years and over, as the standard population.

That married people have lower mortality than never married, widowed and divorced people, has been observed in many studies over time and in different countries (Lillard & Panis 1996). The reasons for this have been debated for over 100 years (Farr 1858). Two main explanations have been put forward. The first suggests that marriage improves a person's health status, thus reducing the risk of an earlier death. Married people are less likely to participate in risky behaviour and more likely to nurture each other's health through promoting good diet and physical care. The second explanation states that differentials are based on selection of healthier individuals into marriage. Particularly in a country like Australia, where registered marriage is far from universal, selectivity is likely to be an important factor.

COUNTRY OF BIRTH

Almost a third of deaths registered in 2010 (43,100 deaths), were of persons who were born overseas, despite making up only 27% of the resident population in 2010. This reflects the older age structure of the overseas-born population (with a median age of 44.7 years in 2010) compared with the Australian-born population (with a median age of 33.4 years). However, when the older age structure of the overseas-born population is taken into account, migrants generally have lower death rates than the Australian-born population. This is true for nearly all migrant groups.

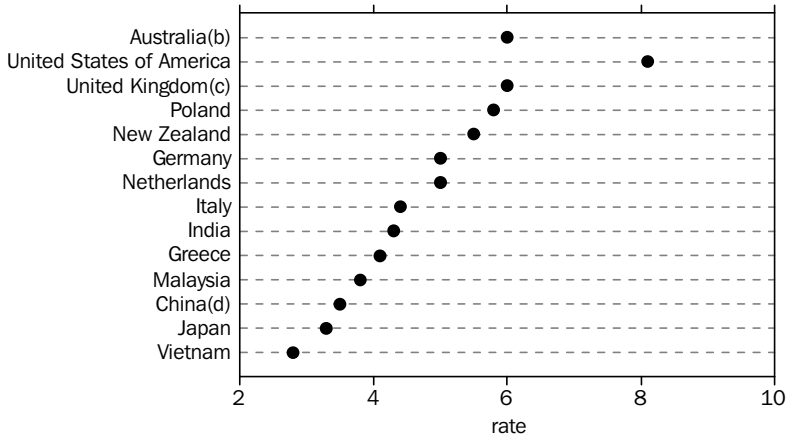
In 2010, men born overseas had a SDR of 6.0 deaths per 1,000 standard population, 15% lower than the rate for men born in Australia (7.0). Women born overseas had a SDR of 4.3 deaths per 1,000 standard population, 16% lower than the rate for women born in Australia (5.1).

For individual birthplaces, SDRs based on deaths registered in Australia differ markedly. People born in the United States of America, with a rate of 8.1 deaths per 1,000 standard population, recorded the highest SDR of all the countries selected for comparison. People born in the United Kingdom (6.0), Poland (5.8) and New Zealand (5.5) recorded

COUNTRY OF BIRTH *continued*

similar rates to that of Australian-born persons (6.0) in 2010. People born in South-East and North-East Asian countries recorded the lowest SDRs in 2010, with the lowest SDR of the selected birthplaces in 2010 being people born in Vietnam (2.8) , which was approximately half the rate for the Australian-born population.

2.9 STANDARDISED DEATH RATES(a), Country of birth—2010



(a) Deaths per 1,000 standard population. Standardised death rates are calculated using the 2001 total population of Australia as the standard population.
(b) Includes External Territories.
(c) United Kingdom, Channel Islands and Isle of Man.
(d) Excludes Special Administrative Regions and Taiwan Province.

CHILD MORTALITY (0–4 YEARS)

In 2010, there were 1,500 deaths of children aged 0–4 years registered in Australia. This was a 2.4% decrease compared with the number registered in 2009. Of these 0–4 year old deaths, 1,200 (or 84%) were infant deaths (deaths of children under one year of age).

Between 1990 and 2000, the total number of 0–4 year old deaths decreased by 4.9% per year on average. Since then, total number of 0–4 year old deaths each year have remained relatively stable in number, fluctuating between 1,400 and 1,600 deaths per year.

Over the past twenty years, the number of 0–4 year old male deaths has been consistently greater than the number of 0–4 year old female deaths. In 2010, there were 870 male deaths, which was 47% more than the number of female deaths (590).

Using life tables issued in this publication, it is possible to calculate the probability of a live born child dying before reaching the age of 5 years. In the period 2008–2010, it is a probability that 589 baby boys per 100,000, and 423 baby girls per 100,000 will die before reaching the age of 5 years.

INFANT DEATHS

In 2010, there were 1,200 infant deaths (deaths of children under one year of age) registered in Australia (740 male and 490 female). This was a 2.5% decrease compared with the number registered in 2009 (1,300). Data for earlier years are presented in table 2.18.

Between 1990 and 2000, the total number of infant deaths decreased by 5.0% per year on average. Since then, the total number of infant deaths each year has remained relatively stable in number, fluctuating between 1,200 and 1,300 deaths per year.

INFANT DEATHS *continued*

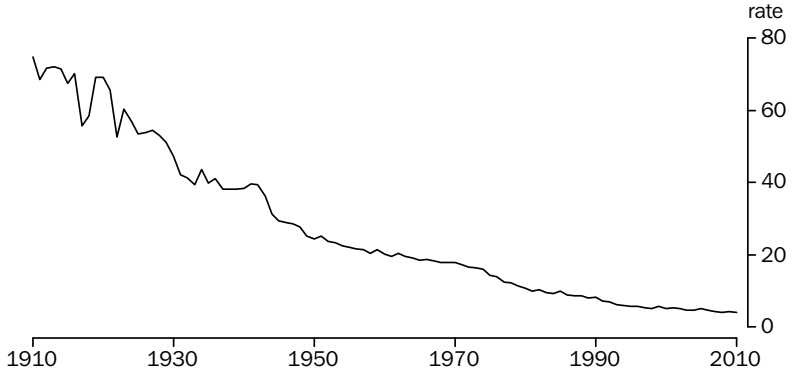
Over the past twenty years, the number of male infant deaths has been consistently greater than the number of female infant deaths. In 2010, there were 740 male deaths, 50% more than the number of female deaths (490).

Infant mortality rates

The infant mortality rate (IMR) is calculated by dividing the number of infant deaths by the number of live births over a specified period. In 2010, the IMR was 4.1 infant deaths per 1,000 live births. This was slightly lower than the rate in 2009 (4.3) and half that recorded in 1990 (8.2).

Over the past 100 years, Australia's infant mortality has declined significantly. For the period 1901 to 1910, around one in 12 infants did not survive to their first birthday (an IMR of 81.8 infant deaths per 1,000 live births in 1905). By 2010, around one in 240 infants did not survive their first year of life.

2.10 INFANT MORTALITY RATES(a)—1910 to 2010



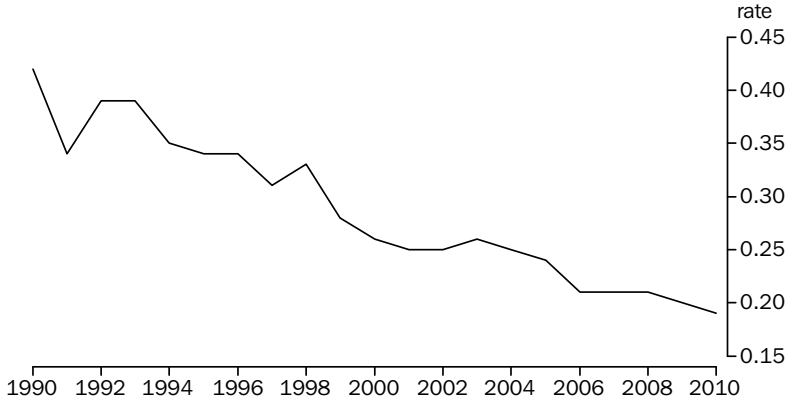
(a) Infant deaths per 1,000 live births.

Source: Australian Historical Population Statistics (3105.0.65.001); Deaths, Australia (3302.0).

Child mortality rates (1–4 years)

Over the past 20 years, the mortality rate for children aged 1–4 years in Australia has declined. In 1990, the mortality rate for children aged 1–4 years was 0.4 deaths per 1,000 population. By 2010, this rate has decreased by more than half.

2.11 CHILD MORTALITY RATES(a) (1–4 YEARS)—1990 to 2010



(a) Child deaths (1–4 years) per 1,000 population.

States and territories

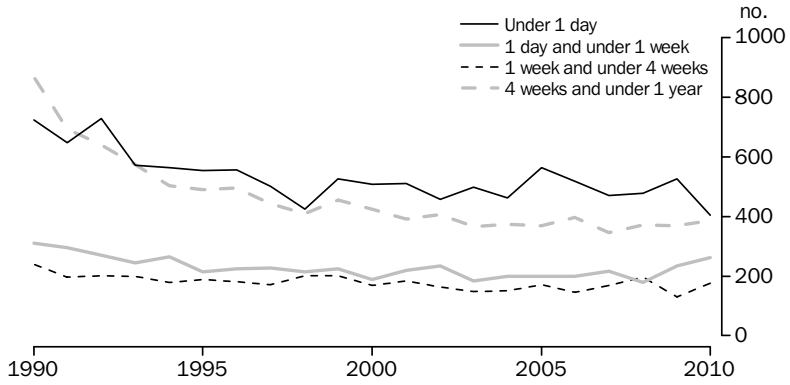
Victoria recorded the lowest IMR in 2010 (3.3 infant deaths per 1,000 live births), followed by Western Australia (3.6) and the Australian Capital Territory (3.7). The Northern Territory's IMR of 7.2 was the highest of the states and territories, followed by Queensland (5.4). Some states and territories have experienced fluctuations in IMRs from year-to-year, due in part to the decline in the number of infant deaths, resulting in rates based on small numbers.

Care should be taken when interpreting data for Queensland for 2010, as these data have been affected by the registration of outstanding deaths initiative undertaken by the Queensland Registry of Births, Deaths and Marriages (see *Technical Note: Registration of outstanding deaths, Queensland, 2010*, and paragraph 36 of the Explanatory Notes for more information).

Infant age at death

In 2010, 33% of all infant deaths occurred within the first day of life, with a further 36% occurring within the first four weeks of life. Until around 1998, numbers of infant deaths at all ages were decreasing. Since then, the numbers appear to have remained relatively consistent from year-to-year.

2.12 INFANT DEATHS, Age at death—1990 to 2010



(a) For some infant deaths, only limited information on age at death is known. See paragraph 28 of the Explanatory Notes for more information.

LIFE EXPECTANCY AT BIRTH

Life expectancy at birth represents the average number of years that a baby could expect to live, assuming current age-specific death rates were experienced. In 2008–2010, life expectancy at birth for Australia was 79.5 years for males and 84.0 years for females, an increase of 0.2 years for males and 0.1 years for females over the life expectancy in 2007–2009.

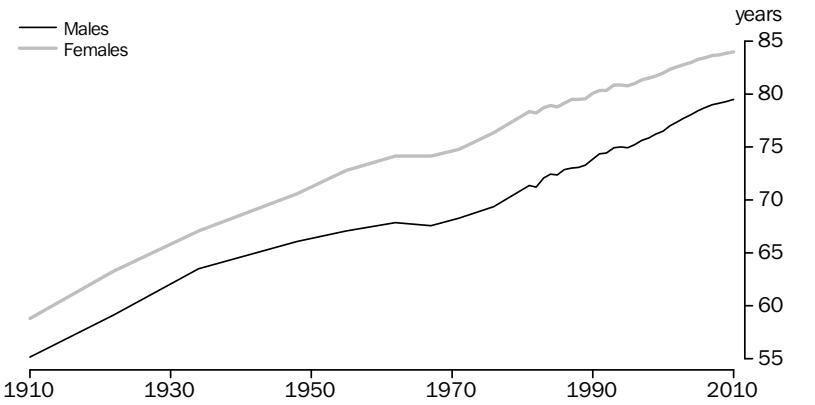
Over the past century, male life expectancy at birth has increased by 24 years, from 55.2 years in 1901–1910 to 79.5 years in 2008–2010. Similarly, female life expectancy at birth has increased by 25 years, from 58.8 years to 84.0 years. The increase in life expectancy at birth reflects declining death rates at all ages.

For males, life expectancy at birth was highest in the Australian Capital Territory (80.5 years), exceeding the Australian life expectancy for males by 1.0 years. For females, life expectancy at birth was also highest in the Australian Capital Territory (84.7 years). This was 0.7 years higher than the female Australian life expectancy. Life expectancy at birth was lowest in the Northern Territory, where it was 74.0 years for males, and 79.2 years for

LIFE EXPECTANCY AT BIRTH *continued*

females. These were 5.5 and 4.8 years lower than the Australian life expectancies respectively. For information on life tables, see paragraphs 43 to 52 of the Explanatory Notes.

2.13 LIFE EXPECTANCY AT BIRTH—1901–1910 to 2008–2010



Source: Australian Historical Population Statistics (3105.0.65.001); Deaths, Australia (3302.0).

Regional life expectancy

For the period 2008–2010, life expectancy at birth varied between the Statistical Divisions (SD) of Australia by approximately 9.2 years for both males and females. Male life expectancy at birth was highest in Gold Coast SD and Melbourne SD (both 80.7 years). Female life expectancy at birth was highest in Gold Coast SD (85.2 years) and Sunshine Coast SD (85.1 years).

Male life expectancy was lowest in the Northern Territory Balance SD (71.5 years) followed by Far West SD (75.1 years). Female life expectancy was lowest in the Northern Territory Balance SD (75.9 years) and South Eastern SD (80.6 years).

Australia's more rural and remote populations tend to have higher mortality rates and consequently lower life expectancy than populations living in either capital cities or urbanised areas (Australian Institute of Health and Welfare (AIHW), 1998). For instance, Northern Territory Balance SD, which has the lowest life expectancy at birth, is a remote area with high proportions of Aboriginal and Torres Strait Islander Australians.

Outside the capital cities, the more urbanised Statistical Divisions tended to have higher life expectancies at birth, such as South Australian SD's South-East and Outer Adelaide. For more information, see data cube *Table 4: Deaths, Summary, Statistical Divisions, 2005 to 2010.*

INTERNATIONAL COMPARISON

Life expectancy

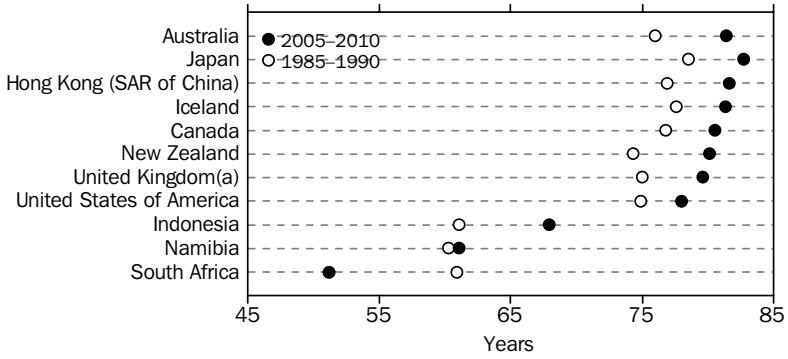
Australians have a life expectancy at birth which compares well with that experienced in other developed nations. According to the United Nations *World Population Prospects: The 2010 Revision (2011)*, global life expectancy at birth for 2005–2010 (medium variant) is estimated to be 65.7 years for males and 70.1 years for females. ABS life tables for 2008–2010 indicate that life expectancy at birth for Australian males (79.5 years) and females (84.0 years) continue to be among the highest in the world.

Life expectancy continued

According to United Nations estimates for 2005–2010, life expectancy at birth of Australian males is exceeded only by Iceland, Japan and Switzerland. Life expectancy at birth of Australian females is exceeded by Japan, Hong Kong (SAR of China), France, Switzerland and Italy.

Combined Australian male and female life expectancy at birth for 2005–2010 was 81.4 years. This was higher than the combined life expectancy in Canada (80.5 years), New Zealand (80.1 years), the United Kingdom (79.6 years) and the United States of America (78.0 years).

2.14 LIFE EXPECTANCY AT BIRTH, Selected countries



(a) United Kingdom, Channel Islands and Isle of Man.

Source: United Nations Population Division, 'World Population Prospects: The 2010 Revision', last viewed August 2011, <http://www.un.org>.

Infant mortality rate

In *World Population Prospects: The 2010 Revision* (2011), the United Nations estimates the global infant mortality rate for 2005–2010 to be 45.6 infant deaths per 1,000 live births. The United Nations estimate of Australia's IMR (4.7 infant deaths per 1,000 live births) is among the lowest in the world. It is lower than that of the United Kingdom (4.9), New Zealand (5.1), Canada (5.2) and the United States of America (6.8). Singapore (1.9), Hong Kong (SAR of China) (2.0) and Iceland (2.1) were among the lowest IMR, while Afghanistan (136.0) and Chad (131.2) were among the highest.

On a regional basis, Northern America has the lowest IMR, with 6.7 infant deaths per 1,000 live births, followed by Europe (6.9). The world's regions recording the highest IMRs are Africa (78.6), Asia (40.7), Latin America and the Caribbean, and Oceania, which includes Australia (both 21.7).

YEAR OF OCCURRENCE

The majority of this publication contains deaths data based on year of registration. Although most deaths are registered in the year in which they occur, some deaths are not registered until the following year or later.

Deaths data presented by year of occurrence in this publication are therefore considered preliminary and are subject to change as deaths that occurred up to, and including, 31 December 2010, but have not yet been registered by this date, are registered in subsequent years.

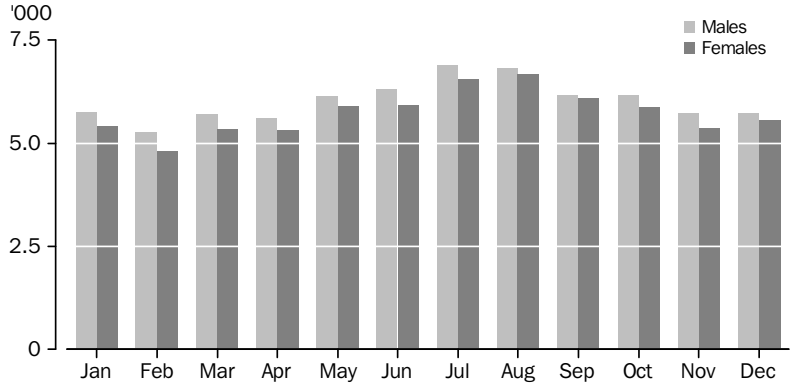
Deaths registered in the same year as they occurred

The likelihood of a death being registered in a year following its occurrence is substantially greater for deaths which occur near the end of the calendar year. Of the 143,500 deaths registered in 2010, 94.3% (135,300 deaths) occurred in 2010 and the remainder (5.7%, or 8,200 deaths) occurred in 2009 or earlier years (the majority of which occurred in December 2009). See paragraphs 26 and 27 of the Explanatory Notes.

Monthly occurrence of deaths

Deaths tend to occur more often in some months than others. Over the period 2007–2009, an average of 141,000 deaths occurred each year in Australia. The largest numbers of deaths, on average, occurred in the winter months of July (6,900 male deaths and 6,600 female deaths) and August (6,800 male deaths and 6,700 female deaths). In comparison, the smallest numbers of deaths on average (5,300 male deaths and 4,800 female deaths) occurred in the summer month of February (noting that February is also the shortest month).

2.15 DEATHS, Month of death—Average of 2007–2009(a)



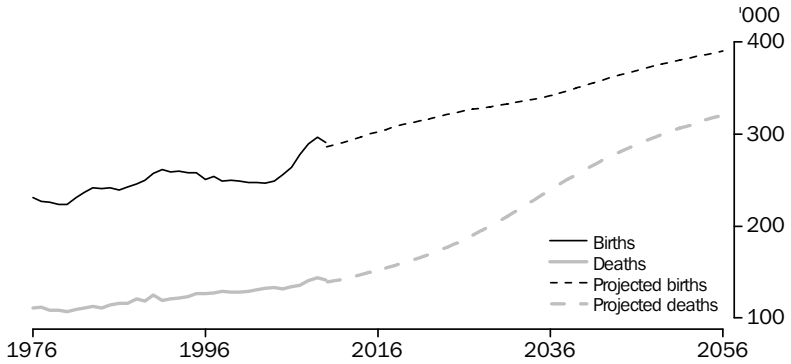
(a) Data for 2007–2009 are presented, as data for 2010 are incomplete due to delays between the occurrence and registration of deaths.

DEATHS AS A COMPONENT OF POPULATION CHANGE

Deaths are an important component of population change. In 2010, there were roughly twice as many births as deaths. As the population of Australia ages, the number of deaths each year is projected to increase, and the difference between numbers of births and deaths to decrease. Based on Series B of the most recent ABS population projections *(Population Projections, Australia, 2006 to 2101, cat. no. 3222.0)*, the number of births is projected to remain higher than the number of deaths throughout the projection period.

DEATHS AS A COMPONENT OF POPULATION CHANGE *continued*

2.16 ACTUAL AND PROJECTED BIRTHS AND DEATHS, Year ended 30 June—1976 to 2056



Source: Australian Historical Population Statistics, 2008 (cat. no. 3105.0.65.001)
Australian Demographic Statistics, March Quarter 2011 (cat. no. 3101.0)
Population Projections, Australia, 2006 to 2101 (cat. no. 3222.0) (Series B)

2.17 COMPONENTS OF POPULATION CHANGE(a), Australia—2005 to 2010

	Births(b)	Deaths(b)	Natural increase	Net overseas migration	Population at end of period	Population increase(c)	
	'000	*'000*	*'000*	*'000*	*'000*	*'000*	*%*
2005	263.4	131.4	132.0	137.0	20 544.1	291.9	1.4
2006	268.5	134.5	134.0	182.2	20 873.7	329.6	1.6
2007	r285.3	r139.8	r145.5	r244.1	r21 263.3	r389.6	r1.9
2008	r294.1	r142.5	r151.6	r315.7	r21 730.6	r467.3	r2.2
2009	r295.3	r141.6	r153.7	r246.9	r22 131.2	r400.6	r1.8
2010	p289.5	p143.4	p146.0	p171.1	p22 448.3	p317.1	p1.4

p preliminary figure or series subject to revision
r revised
(a) Calendar year.
(b) For 2009 and earlier years, births and deaths in this table are based on year of occurrence, for population estimation purposes. For 2010, a combination of data based on quarter of occurrence (for the March and June quarters) and quarter of registration (for the September and December quarters) is used. Numbers of deaths in this table will therefore differ from data elsewhere in this publication.
(c) Population increase will not necessarily equal the sum of natural increase and net overseas migration due to intercensal discrepancy. See Glossary for more information.

Source: Australian Demographic Statistics (cat.no. 3101.0).

SUMMARY TABLES

2.18 DEATHS, Australia—Selected years

		1990	*2000*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
		DEATHS							
Total deaths	no.	**120 062**	**128 291**	**130 714**	**133 739**	**137 854**	**143 946**	**140 760**	**143 473**
Males	no.	64 660	66 817	67 241	68 556	70 569	73 548	72 320	73 484
Females	no.	55 402	61 474	63 473	65 183	67 285	70 398	68 440	69 989
Sex ratio	ratio	116.7	108.7	105.9	105.2	104.9	104.5	105.7	105.0
Standardised death rate(a)									
Males	rate	10.9	8.5	7.4	7.3	7.2	7.3	6.9	6.8
Females	rate	6.8	5.5	5.0	4.9	4.9	5.0	4.7	4.7
Persons	rate	8.6	6.8	6.0	6.0	6.0	6.1	5.8	5.7
Crude death rate(b)									
Males	rate	7.6	7.0	6.6	6.7	6.7	6.9	6.6	6.6
Females	rate	6.5	6.4	6.2	6.3	6.3	6.5	6.2	6.3
Persons	rate	7.0	6.7	6.4	6.5	6.5	6.7	6.4	6.4
Median age at death									
Males	years	71.9	75.3	76.8	77.3	77.5	77.9	77.8	78.1
Females	years	78.7	81.7	82.9	83.3	83.5	83.9	83.9	84.2
Persons	years	75.1	78.2	79.8	80.3	80.5	80.9	80.8	81.2
		LIFE EXPECTANCY AT EXACT AGE(c)							
Males									
0	years	73.9	76.6	78.5	78.7	79.0	79.2	79.3	79.5
1	years	73.6	76.0	77.9	78.1	78.4	78.6	78.7	78.9
25	years	50.5	52.8	54.5	54.7	55.0	55.1	55.2	55.4
45	years	31.8	34.1	35.6	35.7	36.0	36.1	36.3	36.3
65	years	15.2	16.8	18.1	18.3	18.5	18.6	18.7	18.9
85	years	5.1	5.5	5.9	5.9	6.0	5.9	6.0	6.0
Females									
0	years	80.1	82.0	83.3	83.5	83.7	83.7	83.9	84.0
1	years	79.7	81.4	82.7	82.9	83.1	83.1	83.2	83.3
25	years	56.1	57.8	59.0	59.2	59.4	59.4	59.5	59.6
45	years	36.8	38.5	39.6	39.7	39.9	39.9	40.1	40.1
65	years	19.1	20.4	21.4	21.5	21.6	21.6	21.8	21.8
85	years	6.2	6.6	7.1	7.1	7.1	7.0	7.1	7.1
		INFANT DEATHS							
Total infant deaths	no.	**2 145**	**1 290**	**1 302**	**1 262**	**1 203**	**1 226**	**1 261**	**1 229**
Males	no.	1 224	725	714	727	655	702	728	738
Females	no.	921	565	588	535	548	524	533	491
Infant mortality rate(d)									
Males	rate	9.1	5.7	5.4	5.3	4.5	4.6	4.8	4.8
Females	rate	7.2	4.7	4.7	4.1	3.9	3.6	3.7	3.4
Persons	rate	8.2	5.2	5.0	4.7	4.2	4.1	4.3	4.1

(a) Deaths per 1,000 standard population. Standardised death rates use total persons in the Australian population at 30 June 2001 as the standard population.

(b) Deaths per 1,000 population.

(c) Prior to 1995 life expectancy was based on annual life tables calculated by the Australian Bureau of Statistics. For 1995 onwards, life expectancy has been calculated using data for the three years ending in the year in the table heading.

(d) Infant deaths per 1,000 live births.

2.19 DEATHS, States and territories—2010

		NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.(a)
DEATHS										
Total deaths	no.	**47 945**	**35 623**	**27 289**	**12 957**	**12 720**	**4 269**	**981**	**1 679**	**143 473**
Males	no.	24 352	17 935	14 356	6 400	6 794	2 132	624	884	73 484
Females	no.	23 593	17 688	12 933	6 557	5 926	2 137	357	795	69 989
Sex ratio	ratio	103.2	101.4	111.0	97.6	114.6	99.8	174.8	111.2	105.0
Standardised death rate(b)										
Males	rate	6.7	6.6	7.0	7.0	6.7	7.9	9.1	6.5	6.8
Females	rate	4.6	4.6	4.8	4.9	4.5	5.7	6.2	4.3	4.7
Persons	rate	5.6	5.5	5.8	5.9	5.5	6.7	7.7	5.3	5.7
Crude death rate(c)										
Males	rate	6.8	6.5	6.4	7.9	5.8	8.5	5.2	5.0	6.6
Females	rate	6.5	6.3	5.7	7.9	5.2	8.3	3.2	4.4	6.3
Persons	rate	6.6	6.4	6.1	7.9	5.6	8.4	4.3	4.7	6.4
Median age at death										
Male	years	78.4	79.1	76.7	79.4	76.9	77.7	60.1	77.4	78.1
Female	years	84.2	84.8	83.4	84.8	83.7	83.7	64.3	84.2	84.2
Persons	years	81.4	82.0	80.1	82.3	80.2	80.7	61.4	81.1	81.2
LIFE EXPECTANCY AT EXACT AGE										
Male										
0	years	79.6	80.0	79.4	79.4	79.7	78.0	74.0	80.5	79.5
1	years	79.0	79.3	78.8	78.7	79.0	77.5	73.5	79.9	78.9
25	years	55.4	55.7	55.3	55.2	55.5	54.1	50.6	56.3	55.4
45	years	36.3	36.7	36.4	36.3	36.6	35.3	32.7	37.2	36.3
65	years	18.9	19.0	18.8	18.8	19.1	18.0	16.7	19.3	18.9
85	years	6.0	6.1	6.1	6.0	6.2	5.6	5.3	6.0	6.0
Female										
0	years	84.1	84.3	83.9	83.8	84.3	82.3	79.2	84.7	84.0
1	years	83.4	83.5	83.3	83.1	83.5	81.6	78.7	83.9	83.3
25	years	59.7	59.8	59.6	59.3	59.9	57.9	55.4	60.1	59.6
45	years	40.2	40.3	40.1	40.0	40.5	38.6	36.6	40.6	40.1
65	years	21.9	21.9	21.8	21.8	22.1	20.6	19.6	22.1	21.8
85	years	7.2	7.1	7.1	7.1	7.2	6.6	6.1	7.2	7.1
INFANT DEATHS										
Total infant deaths	no.	**390**	**230**	**347**	**76**	**113**	**26**	**28**	**19**	**1 229**
Males	no.	231	133	209	49	72	15	16	13	738
Females	no.	159	97	138	27	41	11	12	6	491
Infant mortality rate(d)										
Males	rate	4.7	3.7	6.3	4.7	4.5	4.5	7.9	4.9	4.8
Females	rate	3.4	2.8	4.4	2.8	2.7	3.6	6.4	2.4	3.4
Persons	rate	4.1	3.3	5.4	3.8	3.6	4.1	7.2	3.7	4.1

(a) Includes Other Territories.

(b) Deaths per 1,000 standard population. Standardised death rates use total persons in the Australian population at 30 June 2001 as the standard population.

(c) Deaths per 1,000 population.

(d) Infant deaths per 1,000 live births.

CHAPTER 3 DEATHS OF ABORIGINAL AND TORRES STRAIT ISLANDER AUSTRALIANS

INTRODUCTION

There were 2,800 deaths registered in Australia in 2010 where the deceased person was recorded as being an Aboriginal, Torres Strait Islander, or both on the deaths registration form, representing 1.9% of all deaths registered.

A variety of measures of mortality (including age-specific death rates, median age at death, infant mortality rates and life expectancy at birth) indicate that the mortality level of Aboriginal and Torres Strait Islander Australians is substantially higher than that of the total Australian population.

The exact scale of difference between the mortality of Aboriginal and Torres Strait Islander Australians and the total population is difficult to establish conclusively. This is due to quality issues with Aboriginal and Torres Strait Islander deaths data and the uncertainties inherent with estimating and projecting the size and structure of the Aboriginal and Torres Strait Islander population over time.

Caution should be exercised when undertaking analysis of Aboriginal and Torres Strait Islander deaths and mortality and, in particular, trends in Aboriginal and Torres Strait Islander mortality.

Further care should be taken when interpreting Aboriginal and Torres Strait Islander deaths for Queensland for 2010, as this data has been affected by the registration of outstanding deaths initiative undertaken by the Queensland Registry of Births, Deaths and Marriages. The initiative involved the registration of some deaths which had occurred between 1992 and 2006 but were not registered. As a result, 374 such deaths were registered in November 2010. Of these, approximately 76% were deaths of Aboriginal and Torres Strait Islander persons (see *Technical Note: Registration of outstanding deaths, Queensland, 2010*, and paragraph 36 of the Explanatory Notes for more information).

Some of the issues affecting the reporting of Aboriginal and Torres Strait Islander mortality include misidentification of Aboriginal and Torres Strait Islander deaths, unexplained changes in the number of people recorded as being Aboriginal and/or Torres Strait Islander Australians in different data collections and over time, the incorrect use of a standard Indigenous status question, changes in administrative processes, and not stated Indigenous status. As a result, changes in numbers of registered Aboriginal and Torres Strait Islander deaths over time may not accurately reflect changes in the numbers of Aboriginal and Torres Strait Islander deaths.

REGISTERED DEATHS OF ABORIGINAL AND TORRES STRAIT ISLANDER AUSTRALIANS

Recording of Aboriginal and Torres Strait Islander deaths

The standard approach to calculating mortality rates requires complete and accurate data on deaths that occur within a period, and an estimate of the population exposed to the risk of dying at the mid-point of that period. These data are required by age and sex. Due to the various issues associated with these data for Aboriginal and Torres Strait Islander Australians, as detailed below, mortality rates should be interpreted with caution.

It is considered likely that most deaths of Aboriginal and Torres Strait Islander Australians are registered. However, some of these deaths are not recorded as such when they are registered. The extent to which Aboriginal and Torres Strait Islander deaths are recorded is referred to as the Aboriginal and Torres Strait Islander deaths identification rate.

Deaths of Aboriginal and Torres Strait Islander Australians may not be correctly recorded due to either failure to report the person as being an Aboriginal and/or Torres Strait Islander on the death registration form, or the incorrect reporting of a person's Aboriginal and/or Torres Strait Islander status. Such mis-classification may occur because some Aboriginal and Torres Strait Islander Australians have non-Indigenous ancestries which may create uncertainty for those completing the death registration form as to how a deceased person should be recorded.

Response to the Indigenous status question may be influenced by a number of factors. These factors may include:

- how the information is collected (e.g. census, survey, or administrative data);
- who provides the information (e.g. the person in question, a relative, a health professional, or an official);
- the perception of why the information is required, and how it will be used; and
- cultural aspects and feelings associated with reporting as an Aboriginal and/or Torres Strait Islander Australians.

The level of reporting and recording can vary across collections and over time.

Further, administrative processes, including the data capture and processing of death registration records, can lead to incorrect recording of Indigenous status in statistical data provided to the ABS. The ABS is aware that some deaths may take several years to be registered (see Explanatory Note 26).

As part of the 2006 Census Data Enhancement (CDE) project, the Indigenous Mortality Quality Study was conducted to estimate the extent of under or over-identification of Aboriginal and Torres Strait Islander Australians in death registrations compared with the Census. The study involved linking death registrations (for 9 August 2006 to 30 June 2007) to 2006 Census of Population and Housing records, and comparing Indigenous status as recorded in the two collections. The ABS used the linked data, as well as information from the 2006 Census Post Enumeration Survey (PES), to develop a new method for adjusting the number of registered deaths of Aboriginal and Torres Strait Islander Australians for compiling life tables.

This method has two key features. First, the use of linked data enabled direct comparison of Indigenous status recorded on the 2006 Census and death registration form. Second, by aligning the death registrations data to the population estimates derived from the 2006 Census and PES, the method ensures consistency between the numerator (that is, estimates of deaths) and the denominator (estimates of population at

Recording of Aboriginal and Torres Strait Islander deaths continued

risk). For more information, see *Discussion Paper: Assessment of Methods for Developing Life Tables for Aboriginal and Torres Strait Islander Australians, 2006* (cat. no. 3302.0.55.002) and *Experimental Life Tables for Aboriginal and Torres Strait Islander Australians, 2005–2007* (cat. no. 3302.0.55.003). The ABS is currently undertaking work to repeat the Census Data Enhancement project for 2011 Census and post-Census deaths. For further information, see *Census Data Enhancement Project: An Update, Oct 2010* (cat. no. 2062.0).

In addition to the factors calculated for adjusting registered Aboriginal and Torres Strait Islander deaths for input into the life tables, a range of other measures of identification were also derived from the Indigenous Mortality Quality Study. For more information, see *Experimental Life tables for Aboriginal and Torres Strait Islander Australians, 2005–2007* (cat. no. 3302.0.55.003) and *Information Paper: Census Data Enhancement - Indigenous Mortality Quality Study, 2006–07* (cat. no. 4723.0).

The ABS continues to work with state and territory Registrars of Births, Deaths and Marriages and other stakeholders to improve the quality of recording of Aboriginal and Torres Strait Islander Australians in the death registrations system in each jurisdiction. The increased numbers of deaths of Aboriginal and Torres Strait Islander Australians recorded in recent years is partly due to substantial improvements in the completeness of the data.

As shown in table 3.1, improvements in the completeness of Aboriginal and Torres Strait Islander deaths data for Australia overall in the late 1990s were largely driven by improvements for Queensland and New South Wales. Queensland began to register deaths as Aboriginal and Torres Strait Islander Australians as such in 1996. In New South Wales, the number of registered Aboriginal and Torres Strait Islander deaths increased in 1998 to much higher levels than previous years. The numbers of Aboriginal and Torres Strait Islander deaths registered in South Australia and the Northern Territory have remained relatively constant since 1997, suggesting that recording has been relatively stable in these jurisdictions. The Western Australian Registry of Births, Deaths and Marriages and the ABS are actively working together to investigate the unusual fluctuations in the number of deaths of Aboriginal and Torres Strait Islander Australians registered in Western Australia in recent years. Until this investigation is finalised, caution should be exercised when interpreting Aboriginal and Torres Strait Islander deaths data for 2007, 2008 and 2009 (see paragraph 36 of the Explanatory Notes).

Indigenous status on Medical Certificate of Cause of Death

From 2007 onwards, Indigenous status for deaths registered in Victoria, South Australia, Western Australia, Tasmania, the Northern Territory and the Australian Capital Territory is sourced from both the Death Registration Form (DRF) and the Medical Certificate of Cause of Death (MCCD). If either the DRF, or the MCCD record the deceased as an Aboriginal and/or Torres Strait Islander Australian, the death is recorded as such. Prior to 2007, Indigenous status was only sourced from the DRF, for all states and territories. As a result of this change, there were an additional 31 deaths recorded as being Aboriginal and/or Torres Strait Islander Australian in 2010, representing a 1.1% increase in the number of deaths recorded as Aboriginal and Torres Strait Islander Australians for Australia overall. In addition, a further 493 records were reclassified from 'not stated' Indigenous status to 'non-Indigenous'.

The New South Wales Registry of Births, Deaths and Marriages, in an effort to further enhance the quality of recording of Aboriginal and Torres Strait Islander Australians in deaths registrations, are investigating the possibility of implementing the capture of Indigenous status from the MCCD to enable its use by the ABS in deriving Indigenous status from both the MCCD and DRF.

3.1 ABORIGINAL AND TORRES STRAIT ISLANDER DEATHS(a), States and territories(b)(c)—1994 to 2010

	NSW	*Vic.*	*Qld*(d)	*SA*	*WA*(e)	*Tas.*	*NT*	*ACT*	*Aust.*(f)
1994	207	50	np	123	377	np	380	10	1 153
1995	224	50	np	121	384	np	387	9	1 182
1996	177	49	258	118	370	np	328	np	1 306
1997	88	93	531	132	351	5	458	4	1 662
1998	462	123	593	127	378	13	415	3	2 114
1999	435	130	529	116	350	11	399	6	1 976
2000	473	108	535	144	407	np	450	np	2 127
2001	481	93	565	125	345	np	429	np	2 072
2002	516	64	590	107	371	20	462	4	2 136
2003	485	82	569	137	338	23	435	9	2 079
2004	490	54	579	131	400	20	449	10	2 136
2005	507	71	519	142	406	28	454	11	2 141
2006	530	111	584	124	443	20	452	14	2 279
2007	601	95	594	138	502	24	461	6	2 421
2008	559	97	562	141	605	24	467	16	2 472
2009	591	106	632	160	444	30	431	10	2 405
2010	622	117	948	147	436	37	447	13	2 767

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) From 2007 onwards, Indigenous status for deaths registered in Victoria, South Australia, Western Australia, Tasmania, Northern Territory and Australian Capital Territory is sourced from both the Death Registration Form and Medical Certificate of Cause of Death.

(b) State or territory of usual residence.

(c) Due to differing levels of recording Indigenous status by the states and territories and over time, care should be taken in interpreting change in numbers of deaths. As a result, data for Australia should not be analysed as a time series.

(d) Queensland began to register Aboriginal and Torres Strait Islander deaths as such in 1996. Care should be taken when interpreting Aboriginal and Torres Strait Islander deaths data for Queensland for 2010. See *Technical Note: Registration of outstanding deaths, Queensland, 2010*, and paragraph 36 of the Explanatory Notes.

(e) ABS are currently investigating the volatility of Aboriginal and Torres Strait Islander deaths in WA in recent years. Until this investigation is finalised, ABS advises caution be used when analysing Aboriginal and Torres Strait Islander deaths data for 2007, 2008 and 2009. See paragraph 36 of the Explanatory Notes.

(f) Includes Other Territories.

The standard Indigenous status question

All states and territories include a question on the death registration form regarding the Indigenous status of the deceased, which must be lodged with the state and territory Registrars of Births, Deaths and Marriages. However, some jurisdictions have had a longer history of recording the Indigenous status of deaths than others. It has only been since the mid-to-late 1990s that a uniform system of reporting deaths of Aboriginal and Torres Strait Islander Australians in Australia has been established. The current question for all states and territories (excepting Victoria and the Northern Territory) asks:

"Was the deceased of Aboriginal or Torres Strait Islander origin?"

(If of both Aboriginal and Torres Strait Islander origin, tick both 'yes' boxes.)

- No
- Yes, Aboriginal origin
- Yes, Torres Strait Islander origin.

Victoria and the Northern Territory ask:

"Was the deceased of Aboriginal or Torres Strait Islander origin?"

- No
- Yes, Aboriginal origin
- Yes, Torres Strait Islander origin
- Both

Not stated responses

In addition to those deaths reported as deaths of Aboriginal and/or Torres Strait Islander Australians, a number of deaths occur each year for which Indigenous status is not stated on the death registration form (table 3.2). In 2010, there were 1,200 deaths registered in Australia for which Indigenous status was not stated, representing 0.9% of all deaths registered. Queensland had the highest proportion of not stated responses in 2010 (2.5%), followed by Western Australia (0.9%).

As a proportion of all deaths registered, deaths for which Indigenous status was not stated decreased from 1.1% in 2009 to 0.9% in 2010. This was largely due to a decrease in the number of deaths in New South Wales, Victoria and Queensland for which Indigenous status was not stated.

It is worth comparing the number of deaths in 2010 for which Indigenous status was not stated (1,200) with the total number of deaths of Aboriginal and Torres Strait Islander Australians (2,800). Despite the relatively low proportion of deaths with unidentified Indigenous status (0.9%), it is likely that some of these were deaths of Aboriginal and Torres Strait Islander Australians, contributing to mis-recording of deaths of Aboriginal and Torres Strait Islander Australians.

Not stated responses continued

3.2 DEATHS, Indigenous status—2010

	ABORIGINAL AND TORRES STRAIT ISLANDER		NON-INDIGENOUS		NOT STATED		TOTAL
State or territory	*no.*	*%*	*no.*	*%*	*no.*	*%*	*no.*
New South Wales	622	1.3	47 039	98.1	284	0.6	47 945
Victoria	117	0.3	35 485	99.6	21	0.1	35 623
Queensland(a)	948	3.5	25 652	94.0	689	2.5	27 289
South Australia	147	1.1	12 750	98.4	60	0.5	12 957
Western Australia	436	3.4	12 174	95.7	110	0.9	12 720
Tasmania	37	0.9	4 231	99.1	np	—	4 269
Northern Territory	447	45.6	529	53.9	5	0.5	981
Australian Capital Territory	13	0.8	1 616	96.2	50	3.0	1 679
Australia(b)	**2 767**	**1.9**	**139 486**	**97.2**	**1 220**	**0.9**	**143 473**

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Care should be taken when interpreting Aboriginal and Torres Strait Islander deaths data for Queensland for 2010. See *Technical Note: Registration of outstanding deaths, Queensland, 2010,* and paragraph 36 of the Explanatory Notes.

(b) Includes Other Territories.

AGE AT DEATH

Care should be exercised when analysing deaths of Aboriginal and Torres Strait Islander Australians by age as differences in identification by age may lead to biased results. For more information, see *Information Paper: Census Data Enhancement - Indigenous Mortality Quality Study, 2006–07* (cat. no. 4723.0).

3.3 AGE AT DEATH, Indigenous Status—2010

State or territory	0	1-14	15-24	25-34	35-44	45-54	55-64	65 years and over	Total(a)
	no.	no.	no.	no.	no.	no.	no.	no.	no.
MALES									
Aboriginal and Torres Strait Islander									
New South Wales	16	np	17	np	37	69	66	121	343
Queensland(b)	29	6	25	41	63	101	89	175	530
South Australia	np	np	np	np	16	20	12	27	84
Western Australia	15	4	16	20	42	41	43	67	248
Northern Territory	np	3	np	27	35	43	55	52	249
Total(c)	75	15	84	105	193	274	265	442	1 454
Non-Indigenous									
New South Wales	212	np	232	np	577	1 317	2 623	18 483	23 865
Queensland(b)	167	63	162	263	402	774	1 486	10 143	13 461
South Australia	np	np	np	np	160	339	663	4 942	6 285
Western Australia	56	29	80	155	204	392	711	4 843	6 470
Northern Territory	np	4	np	18	22	46	77	185	372
Total(c)	484	188	546	842	1 365	2 868	5 560	38 596	50 453
Total(d)									
New South Wales	231	83	250	359	625	1 397	2 702	18 702	24 352
Queensland(b)	209	71	198	318	485	911	1 621	10 539	14 356
South Australia	49	15	60	69	180	360	679	4 988	6 400
Western Australia	72	34	102	180	258	448	769	4 931	6 794
Northern Territory	16	7	38	45	57	90	132	239	624
Total(c)	577	210	648	971	1 605	3 206	5 903	39 399	52 526
FEMALES									
Aboriginal and Torres Strait Islander									
New South Wales	10	np	3	np	14	29	55	157	279
Queensland(b)	20	11	16	21	43	58	83	165	418
South Australia	np	np	np	np	13	6	14	23	63
Western Australia	5	6	3	10	27	35	35	67	188
Northern Territory	np	5	np	11	27	41	34	67	198
Total(c)	45	27	29	51	124	169	221	479	1 146
Non-Indigenous									
New South Wales	143	np	93	np	346	800	1 575	20 014	23 174
Queensland(b)	114	30	82	88	214	475	895	10 290	12 191
South Australia	np	np	np	np	98	243	386	5 637	6 465
Western Australia	35	25	36	55	96	231	422	4 804	5 704
Northern Territory	np	—	np	6	5	12	20	106	157
Total(c)	321	123	236	336	759	1 761	3 298	40 851	47 691
Total(d)									
New South Wales	159	59	96	155	365	839	1 639	20 278	23 593
Queensland(b)	138	44	102	112	271	564	1 011	10 687	12 933
South Australia	27	15	24	43	113	251	403	5 681	6 557
Western Australia	41	31	40	68	128	269	462	4 887	5 926
Northern Territory	12	5	9	17	32	53	55	174	357
Total(c)	377	154	271	395	909	1 976	3 570	41 707	49 366

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Includes deaths for which age was not stated.

(b) Care should be taken when interpreting Aboriginal and Torres Strait Islander deaths data for Queensland for 2010. See *Technical Note: Registration of outstanding deaths, Queensland, 2010*, and paragraph 36 of the Explanatory Notes.

(c) Data are for NSW, Qld, SA, WA and NT combined, based on state or territory of usual residence. Victoria, Tasmania and the ACT are excluded due to small numbers of registered Aboriginal and Torres Strait Islander deaths.

(d) Includes deaths for which Indigenous status was not stated.

3.3 AGE AT DEATH, Indigenous Status—2010 *continued*

State or territory	0	1-14	15-24	25-34	35-44	45-54	55-64	65 years and over	Total(a)
	no.	no.	no.	no.	no.	no.	no.	no.	no.
PERSONS									
Aboriginal and Torres Strait Islander									
New South Wales	26	np	20	np	51	98	121	278	622
Queensland(b)	49	17	41	62	106	159	172	340	948
South Australia	5	np	6	np	29	26	26	50	147
Western Australia	20	10	19	30	69	76	78	134	436
Northern Territory	20	8	27	38	62	84	89	119	447
Total(c)	120	42	113	156	317	443	486	921	2 600
Non-Indigenous									
New South Wales	355	np	325	np	923	2 117	4 198	38 497	47 039
Queensland(b)	281	93	244	351	616	1 249	2 381	20 433	25 652
South Australia	70	np	77	np	258	582	1 049	10 579	12 750
Western Australia	91	54	116	210	300	623	1 133	9 647	12 174
Northern Territory	8	4	20	24	27	58	97	291	529
Total(c)	805	311	782	1 178	2 124	4 629	8 858	79 447	98 144
Total(d)									
New South Wales	390	142	346	514	990	2 236	4 341	38 980	47 945
Queensland(b)	347	115	300	430	756	1 475	2 632	21 226	27 289
South Australia	76	30	84	112	293	611	1 082	10 669	12 957
Western Australia	113	65	142	248	386	717	1 231	9 818	12 720
Northern Territory	28	12	47	62	89	143	187	413	981
Total(c)	954	364	919	1 366	2 514	5 182	9 473	81 106	101 892

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Includes deaths for which age was not stated.

(b) Care should be taken when interpreting Aboriginal and Torres Strait Islander deaths data for Queensland for 2010. See *Technical Note: Registration of outstanding deaths, Queensland, 2010*, and paragraph 36 of the Explanatory Notes.

(c) Data are for NSW, Qld, SA, WA and NT combined, based on state or territory of usual residence. Victoria, Tasmania and the ACT are excluded due to small numbers of registered Aboriginal and Torres Strait Islander deaths.

(d) Includes deaths for which Indigenous status was not stated.

AGE-SPECIFIC DEATH RATES

Age-specific death rates (ASDRs) are available for New South Wales, Queensland, South Australia and the Northern Territory. Victoria, Tasmania and the Australian Capital Territory are excluded due to small numbers of registered deaths of Aboriginal and Torres Strait Islander Australians. Western Australia is excluded due to an ongoing investigation into unusual volatility in 2007, 2008 and 2009. See paragraph 36 of the Explanatory Notes.

The non-reporting or incorrect reporting of a person's Indigenous status on the death registration form means that death rates calculated using the number of registered Aboriginal and Torres Strait Islander deaths are likely to underestimate the true death rate. Non-reporting or incorrect reporting of a person's Indigenous status on the death registration form may also affect rates for non-Indigenous Australians.

Death rates for 2006–2010 for Aboriginal and Torres Strait Islander Australian males and females in all age groups were higher than rates for non-Indigenous males and females (table 3.4).

AGE-SPECIFIC DEATH RATES *continued*

For New South Wales and Queensland, ASDRs for Aboriginal and Torres Strait Islander Australians aged 25 to 64 years were more than twice the rates for non-Indigenous Australians. For both males and females, the largest difference was for those aged 35–44 years, where Aboriginal and Torres Strait Islander Australian age-specific death rates were three or more times higher than those recorded for non-Indigenous males and females.

For South Australia and the Northern Territory, ASDRs for Aboriginal and Torres Strait Islander Australians in some age groups were five or more times higher than those for non-Indigenous Australians. The largest differences occurred among males aged 35–44 years and females aged 25 to 44 years.

The denominators used in calculating Aboriginal and Torres Strait Islander age-specific death rates were the 30 June 2008 (i.e. mid point of the period 2006–2010) projections (Series B) published in *Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 1991 to 2021* (cat. no. 3238.0). As non-Indigenous population estimates are available for Census years only, the 30 June 2008 denominators for non-Indigenous rates were calculated by subtracting the projected Aboriginal and Torres Strait Islander Australian population (as published in *Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 1991 to 2021* (cat. no. 3238.0, Series B)) from the total population (as published in *Australian Demographic Statistics* (cat. no. 3101.0)). Such figures have a degree of uncertainty and should be used with caution, particularly as the time from the base year of the projection series increases.

3.4 AGE-SPECIFIC DEATH RATES(a)(b), Indigenous status and sex—2006–2010(c)

	MALES			FEMALES			PERSONS		
	Aboriginal and Torres Strait Islander(d)	*Non-Indigenous*(d)	*Rate ratio*(e)	*Aboriginal and Torres Strait Islander*(d)	*Non-Indigenous*(d)	*Rate ratio*(e)	*Aboriginal and Torres Strait Islander*(d)	*Non-Indigenous*(d)	*Rate ratio*(e)
NEW SOUTH WALES									
0(f)	7.4	4.7	1.6	5.8	3.6	1.6	6.6	4.2	1.6
1–4	32.1	19.9	1.6	37.2	16.7	2.2	34.6	18.4	1.9
5–14	14.2	10.7	1.3	9.6	7.2	1.3	11.9	9.0	1.3
15–24	83.6	50.1	1.7	22.2	20.9	1.1	54.1	35.9	1.5
25–34	167.0	75.9	2.2	91.7	30.9	3.0	128.8	53.4	2.4
35–44	381.4	126.1	3.0	201.9	66.4	3.0	286.2	96.0	3.0
45–54	812.5	281.0	2.9	405.1	170.4	2.4	599.9	225.1	2.7
55–64	1 517.6	659.2	2.3	1 052.3	393.5	2.7	1 276.0	525.8	2.4
65 and over	4 740.7	4 219.3	1.1	4 273.1	3 735.3	1.1	4 481.8	3 953.2	1.1
QUEENSLAND(g)									
0(f)	9.8	5.4	1.8	7.1	4.1	1.8	8.5	4.8	1.8
1–4	55.9	24.9	2.2	57.7	19.5	3.0	56.8	22.3	2.5
5–14	21.8	11.3	1.9	16.2	9.1	1.8	19.1	10.3	1.9
15–24	123.2	59.1	2.1	75.7	24.8	3.1	99.9	42.3	2.4
25–34	260.1	87.4	3.0	125.0	33.6	3.7	192.5	60.7	3.2
35–44	499.1	127.7	3.9	321.1	66.6	4.8	406.5	96.9	4.2
45–54	956.0	271.1	3.5	624.0	158.4	3.9	782.6	214.2	3.7
55–64	1 819.2	642.0	2.8	1 396.9	376.0	3.7	1 593.5	510.2	3.1
65 and over	6 334.8	4 049.0	1.6	5 025.3	3 563.0	1.4	5 577.9	3 789.6	1.5
SOUTH AUSTRALIA									
0(f)	6.4	3.8	1.7	5.8	3.2	1.8	6.1	3.5	1.7
1–4	—	24.7	—	76.7	16.6	4.6	37.5	20.7	1.8
5–14	11.3	7.1	1.6	23.2	7.6	3.1	17.2	7.3	2.3
15–24	156.0	56.1	2.8	97.8	20.6	4.7	126.9	38.8	3.3
25–34	325.7	91.3	3.6	203.2	35.1	5.8	262.9	63.6	4.1
35–44	690.4	146.0	4.7	486.0	81.5	6.0	584.7	113.7	5.1
45–54	1 258.1	291.6	4.3	883.8	189.9	4.7	1 059.4	240.2	4.4
55–64	2 124.4	676.2	3.1	1 662.0	402.7	4.1	1 882.7	536.7	3.5
65 and over	4 148.1	4 406.2	0.9	4 173.9	3 926.5	1.1	4 163.3	4 139.0	1.0

— nil or rounded to zero (including null cells)

(a) Deaths per 100,000 population, except age 0.

(b) Data are for NSW, Qld, SA and NT only, based on state or territory of usual residence. Victoria, Tasmania and the ACT are excluded due to small numbers of registered Aboriginal and Torres Strait Islander deaths. WA data are excluded due to an ongoing investigation into unusual volatility in 2007, 2008 and 2009. See paragraph 36 of the Explanatory Notes.

(c) Death rates based on the average number of death registrations between 2006–2010, divided by the population at 30 June 2008. See commentary.

(d) Deaths where Indigenous status was not stated are excluded. As a result, age-specific death rates may be underestimated.

(e) Aboriginal and Torres Strait Islander rate divided by the non-Indigenous rate.

(f) Infant deaths per 1,000 live births.

(g) Care should be taken when interpreting Aboriginal and Torres Strait Islander deaths data for Queensland for 2010. See *Technical Note: Registration of outstanding deaths, Queensland, 2010*, and paragraph 36 of the Explanatory Notes.

3.4 AGE-SPECIFIC DEATH RATES(a)(b), Indigenous status and sex—2006–2010(c) *continued*

	MALES			FEMALES			PERSONS		
	Aboriginal and Torres Strait Islander(d)	*Non-Indigenous*(d)	*Rate ratio*(e)	*Aboriginal and Torres Strait Islander*(d)	*Non-Indigenous*(d)	*Rate ratio*(e)	*Aboriginal and Torres Strait Islander*(d)	*Non-Indigenous*(d)	*Rate ratio*(e)
				NORTHERN TERRITORY					
0(f)	14.3	3.9	3.7	11.7	3.6	3.2	13.1	3.8	3.5
1–4	84.5	23.8	3.6	54.0	10.2	5.3	69.6	17.2	4.0
5–14	46.9	23.9	2.0	38.2	6.5	5.9	42.6	15.6	2.7
15–24	292.3	107.7	2.7	120.1	34.0	3.5	207.6	73.2	2.8
25–34	506.3	92.2	5.5	238.1	31.7	7.5	369.2	62.7	5.9
35–44	1 061.3	159.8	6.6	603.6	52.2	11.6	821.6	108.9	7.5
45–54	1 715.6	358.7	4.8	1 210.0	151.7	8.0	1 448.5	261.3	5.5
55–64	3 000.3	786.5	3.8	1 952.1	313.6	6.2	2 422.1	581.2	4.2
65 and over	6 948.5	3 553.3	2.0	5 709.6	2 676.1	2.1	6 182.0	3 171.8	1.9

(a) Deaths per 100,000 population, except age 0.
(b) Data are for NSW, Qld, SA and NT only, based on state or territory of usual residence. Victoria, Tasmania and the ACT are excluded due to small numbers of registered Aboriginal and Torres Strait Islander deaths. WA data are excluded due to an ongoing investigation into unusual volatility in 2007, 2008 and 2009. See paragraph 36 of the Explanatory Notes.
(c) Death rates based on the average number of death registrations between 2006–2010, divided by the population at 30 June 2008. See commentary.
(d) Deaths where Indigenous status was not stated are excluded. As a result, age-specific death rates may be underestimated.
(e) Aboriginal and Torres Strait Islander rate divided by the non-Indigenous rate.
(f) Infant deaths per 1,000 live births.

MEDIAN AGE AT DEATH

Care should be exercised when analysing Aboriginal and Torres Strait Islander median age at death, as in addition to the issues previously identified, it may also be affected by differences in identification by age. For example, higher levels of reported Aboriginal and Torres Strait Islander infant deaths compared with older age groups may result in the median age at death being underestimated.

As with age-specific death rates, median age at death data for Aboriginal and Torres Strait Islander Australians are only included in this publication for New South Wales, Queensland, South Australia and the Northern Territory. Victoria, Tasmania and the Australian Capital Territory are excluded due to small numbers of registered deaths of Aboriginal and Torres Strait Islander Australians. Western Australia is excluded due to an ongoing investigation into unusual volatility in 2007, 2008 and 2009. See paragraph 36 of the Explanatory Notes.

In 2010, the median age at death of Aboriginal and Torres Strait Islander Australian males varied across the states and territories, from 50.8 years in the Northern Territory to 58.3 years in New South Wales, compared with 64.9 years in the Northern Territory to 79.6 years in South Australia for non-Indigenous males. The median age at death of Aboriginal and Torres Strait Islander Australian females range from 55.4 years in the Northern Territory to 67.1 years in New South Wales, compared with 75.2 years for the Northern Territory to 84.9 years in South Australia for non-Indigenous population.

MEDIAN AGE AT DEATH *continued*

3.5 MEDIAN AGE AT DEATH(a)(b), Indigenous Status(c)—2005 to 2010

	NSW	*Qld*(d)	*SA*	*NT*
MALES				
Aboriginal and Torres Strait Islander				
2005	54.3	51.1	42.4	45.8
2006	59.3	55.6	50.4	45.4
2007	58.1	54.7	50.5	45.9
2008	59.9	53.2	49.0	52.1
2009	57.2	53.2	48.0	48.3
2010	58.3	55.0	54.0	50.8
Non-Indigenous				
2005	77.2	76.4	77.9	63.7
2006	77.8	76.7	78.3	64.7
2007	78.1	77.1	78.7	64.6
2008	78.5	77.3	79.2	66.3
2009	78.4	77.2	79.3	66.6
2010	78.6	77.5	79.6	64.9
FEMALES				
Aboriginal and Torres Strait Islander				
2005	65.8	59.5	47.5	50.4
2006	64.8	57.0	59.3	55.3
2007	63.0	59.5	58.3	55.7
2008	63.8	62.3	53.5	56.0
2009	65.9	62.6	53.0	55.4
2010	67.1	59.5	59.3	55.4
Non-Indigenous				
2005	83.1	82.6	83.7	70.5
2006	83.5	83.1	84.1	75.0
2007	83.7	83.3	84.3	69.3
2008	84.2	83.7	84.6	75.7
2009	84.1	83.4	84.6	71.8
2010	84.3	83.9	84.9	75.2

(a) The age at which half the population is younger and half is older.

(b) Data are for NSW, Qld, SA and NT only, based on state or territory of usual residence. Victoria, Tasmania and the Australian Capital Territory are excluded due to small numbers of registered Aboriginal and Torres Strait Islander deaths. WA is excluded due to an ongoing investigation into unusual volatility in 2007, 2008 and 2009. See paragraph 36 of the Explanatory Notes.

(c) Care should be exercised when comparing median age at death of Aboriginal and Torres Strait Islander Australians and non-Indigenous Australians. See Commentary.

(d) Care should be taken when interpreting Aboriginal and Torres Strait Islander deaths data for Queensland for 2010. See *Technical Note: Registration of outstanding deaths, Queensland, 2010*, and paragraph 36 of the Explanatory Notes.

INFANT MORTALITY RATE

For the selected states and territories, infant mortality rates (IMRs) for Aboriginal and Torres Strait Islander Australians are around twice the rates for non-Indigenous Australians. In the Northern Territory, IMRs fell consistently for the Aboriginal and Torres Strait Islander population, from 15.7 deaths per 1,000 live births in 2005–2007 to 11.4

INFANT MORTALITY RATE *continued*

deaths per 1,000 live births in 2008–2010. IMRs in the Northern Territory were the highest of all states and territories across the 2005–2007 to 2008–2010 period. Other states exhibited lower IMRs for the Aboriginal and Torres Strait Islander population, but rates fluctuated due to the small and variable number of registered infant deaths in these jurisdictions during this period.

3.6 INFANT MORTALITY RATES(a)(b), Indigenous status—2005–2007 to 2008–2010

	NSW	*Qld*(c)	*SA*	*NT*
ABORIGINAL AND TORRES STRAIT ISLANDER				
Males				
2005–2007	10.0	11.0	10.2	19.1
2006–2008	8.3	8.4	6.8	15.1
2007–2009	7.4	8.5	6.5	13.4
2008–2010	5.9	10.0	4.2	12.4
Females				
2005–2007	7.7	7.2	7.4	12.1
2006–2008	7.1	7.4	5.9	11.9
2007–2009	6.1	6.6	7.0	10.9
2008–2010	4.4	7.4	5.1	10.4
Persons				
2005–2007	8.9	9.1	8.9	15.7
2006–2008	7.7	7.9	6.4	13.6
2007–2009	6.8	7.6	6.7	12.2
2008–2010	5.2	8.8	4.6	11.4
NON-INDIGENOUS				
Males				
2005–2007	5.0	5.2	4.2	3.6
2006–2008	4.9	5.3	3.5	4.4
2007–2009	4.6	5.2	4.0	4.8
2008–2010	4.6	5.4	3.8	4.2
Females				
2005–2007	3.9	4.3	3.8	4.9
2006–2008	3.7	4.1	3.2	3.3
2007–2009	3.7	4.2	3.1	2.9
2008–2010	3.5	4.0	3.0	3.2
Persons				
2005–2007	4.5	4.8	4.0	4.2
2006–2008	4.3	4.7	3.4	3.8
2007–2009	4.1	4.7	3.5	3.9
2008–2010	4.1	4.7	3.4	3.7

(a) Infant deaths per 1,000 live births. The volatility in infant mortality rates is partially due to the relatively small number of infant deaths registered.

(b) Data are for NSW, Qld, SA and NT only, based on state or territory of usual residence. Victoria, Tasmania and the Australian Capital Territory are excluded due to small numbers of registered Aboriginal and Torres Strait Islander deaths. WA data are excluded due to an ongoing investigation into unusual volatility in 2007, 2008 and 2009. See paragraph 36 of the Explanatory Notes.

(c) Care should be taken when interpreting Aboriginal and Torres Strait Islander deaths data for Queensland for 2010. See *Technical Note: Registration of outstanding deaths, Queensland, 2010*, and paragraph 36 of the Explanatory Notes.

3.6 INFANT MORTALITY RATES(a)(b), Indigenous status—2005–2007 to 2008–2010 *continued*

	NSW	*Qld*(c)	*SA*	*NT*
	TOTAL(d)			
Males				
2005–2007	5.2	5.7	4.6	10.1
2006–2008	5.1	5.7	3.7	8.8
2007–2009	4.7	5.6	4.1	8.3
2008–2010	4.8	6.0	3.8	7.5
Females				
2005–2007	4.1	4.5	3.9	7.8
2006–2008	3.9	4.4	3.4	6.7
2007–2009	3.8	4.5	3.3	6.0
2008–2010	3.6	4.4	3.1	6.0
Persons				
2005–2007	4.7	5.1	4.3	9.0
2006–2008	4.5	5.1	3.5	7.8
2007–2009	4.3	5.1	3.7	7.2
2008–2010	4.2	5.2	3.5	6.8

(a) Infant deaths per 1,000 live births. The volatility in infant mortality rates is partially due to the relatively small number of infant deaths registered.

(b) Data are for NSW, Qld, SA and NT only, based on state or territory of usual residence. Victoria, Tasmania and the Australian Capital Territory are excluded due to small numbers of registered Aboriginal and Torres Strait Islander deaths. WA data are excluded due to an ongoing investigation into unusual volatility in 2007, 2008 and 2009. See paragraph 36 of the Explanatory Notes.

(c) Care should be taken when interpreting Aboriginal and Torres Strait Islander deaths data for Queensland for 2010. See *Technical Note: Registration of outstanding deaths, Queensland, 2010*, and paragraph 36 of the Explanatory Notes.

(d) Includes deaths for which Indigenous status was not stated.

LIFE TABLES FOR ABORIGINAL AND TORRES STRAIT ISLANDER AUSTRALIANS

Life tables for the Aboriginal and Torres Strait Islander population for the period 2005–2007 were published in May 2009 in *Experimental Life Tables for Aboriginal and Torres Strait Islander Australians, 2005–2007* (cat. no. 3302.0.55.003).

At the national level, life expectancy at birth for Aboriginal and Torres Strait Islander males is estimated to be 67.2 years, 12 years less than life expectancy at birth for non-Indigenous males (78.7 years). Life expectancy at birth for Aboriginal and Torres Strait Islander females is estimated to be 72.9 years, 10 years less than life expectancy at birth for non-Indigenous females (82.6 years).

Life expectancy at birth differs across the states and territories (table 3.8). For Aboriginal and Torres Strait Islander males, life expectancy at birth is highest in New South Wales (69.9 years) and lowest in the Northern Territory (61.5 years). A similar pattern exists for Aboriginal and Torres Strait Islander females, with the highest life expectancy at birth in New South Wales (75.0 years) and the lowest in the Northern Territory (69.2 years).

LIFE TABLES FOR ABORIGINAL AND TORRES STRAIT ISLANDER AUSTRALIANS *continued*

Differences in life expectancy at birth estimates between non-Indigenous and Aboriginal and Torres Strait Islander are greatest in the Northern Territory and Western Australia (14 years for males and 12 years for females).

3.7 LIFE EXPECTANCY AT BIRTH(a), Indigenous status—2005–2007

	LIFE EXPECTANCY AT BIRTH			*Difference between non-Indigenous and Aboriginal and Torres Strait Islander life expectancy at birth*(b)
	Aboriginal and Torres Strait Islander	*Non-Indigenous*	*Total*(c)	
	years	years	years	years
MALES				
NSW	69.9	78.7	78.5	8.8
Qld	68.3	78.6	78.4	10.4
WA	65.0	79.0	78.7	14.0
NT	61.5	75.7	72.0	14.2
Aust.(d)	67.2	78.7	78.5	11.5
FEMALES				
NSW	75.0	82.5	82.4	7.5
Qld	73.6	82.5	82.3	8.9
WA	70.4	82.9	82.5	12.5
NT	69.2	81.2	77.6	11.9
Aust.(d)	72.9	82.6	82.4	9.7
DIFFERENCE BETWEEN MALES AND FEMALES				
NSW	–5.1	–3.9	–3.9	..
Qld	–5.3	–3.9	–4.0	..
WA	–5.4	–3.8	–3.9	..
NT	–7.7	–5.4	–5.6	..
Aust.(d)	–5.6	–3.8	–3.9	..

(a) Due to significant changes in methodology for adjusting registered deaths, estimates of life expectancy at birth for 2005–2007 are not comparable to previously published estimates.
(b) Differences are based on unrounded estimates.
(c) Estimates of life expectancy at birth for the total population presented in this table differ from estimates in Deaths, Australia, 2006 (cat. no. 3302.0). See paragraph 39 of the Explanatory Notes.
(d) Includes all states and territories.

CHAPTER 4 LIFE TABLES

4.1 LIFE TABLE, Australia—Males—2008–2010

Age	*l*x(a) no.	*q*x(b) rate	*L*x(c) no.	*e*x(d) years
0	100 000	0.00497	99 555	79.5
1	99 503	0.00040	99 481	78.9
2	99 463	0.00022	99 451	77.9
3	99 441	0.00016	99 432	77.0
4	99 424	0.00013	99 417	76.0
5	99 411	0.00012	99 405	75.0
6	99 399	0.00011	99 393	74.0
7	99 388	0.00010	99 383	73.0
8	99 378	0.00010	99 373	72.0
9	99 368	0.00009	99 363	71.0
10	99 359	0.00009	99 354	70.0
11	99 349	0.00010	99 344	69.0
12	99 340	0.00010	99 335	68.0
13	99 329	0.00013	99 323	67.0
14	99 317	0.00018	99 308	66.0
15	99 298	0.00027	99 286	65.1
16	99 271	0.00038	99 253	64.1
17	99 234	0.00048	99 211	63.1
18	99 186	0.00056	99 159	62.1
19	99 131	0.00061	99 101	61.2
20	99 070	0.00063	99 039	60.2
21	99 008	0.00063	98 977	59.2
22	98 945	0.00063	98 914	58.3
23	98 883	0.00064	98 851	57.3
24	98 819	0.00066	98 787	56.3
25	98 754	0.00068	98 720	55.4
26	98 686	0.00071	98 652	54.4
27	98 617	0.00073	98 581	53.5
28	98 545	0.00075	98 508	52.5
29	98 471	0.00078	98 433	51.5
30	98 394	0.00081	98 355	50.6
31	98 314	0.00085	98 273	49.6
32	98 231	0.00089	98 188	48.7
33	98 144	0.00093	98 098	47.7
34	98 053	0.00097	98 006	46.7
35	97 958	0.00101	97 909	45.8
36	97 859	0.00106	97 807	44.8
37	97 755	0.00111	97 701	43.9
38	97 646	0.00118	97 589	42.9
39	97 531	0.00125	97 471	42.0
40	97 409	0.00134	97 345	41.0
41	97 279	0.00144	97 210	40.1
42	97 139	0.00155	97 065	39.1
43	96 989	0.00168	96 908	38.2
44	96 826	0.00183	96 738	37.3
45	96 649	0.00199	96 554	36.3
46	96 456	0.00218	96 352	35.4
47	96 246	0.00239	96 132	34.5
48	96 016	0.00261	95 892	33.6
49	95 765	0.00286	95 630	32.7
50	95 491	0.00312	95 344	31.7
51	95 193	0.00340	95 034	30.8
52	94 870	0.00370	94 697	29.9
53	94 519	0.00401	94 332	29.1
54	94 140	0.00434	93 938	28.2
55	93 731	0.00469	93 514	27.3
56	93 292	0.00505	93 059	26.4
57	92 820	0.00544	92 571	25.5
58	92 315	0.00588	92 048	24.7
59	91 773	0.00638	91 484	23.8
60	91 187	0.00695	90 874	23.0
61	90 553	0.00759	90 214	22.1
62	89 866	0.00830	89 498	21.3
63	89 119	0.00911	88 719	20.5
64	88 307	0.01003	87 871	19.7
65	87 422	0.01106	86 946	18.9
66	86 455	0.01222	85 935	18.1
67	85 398	0.01353	84 829	17.3
68	84 243	0.01500	83 620	16.5
69	82 979	0.01664	82 299	15.7
70	81 599	0.01846	80 857	15.0
71	80 093	0.02047	79 284	14.3
72	78 453	0.02269	77 575	13.6
73	76 673	0.02514	75 722	12.9
74	74 745	0.02789	73 716	12.2
75	72 661	0.03099	71 549	11.5
76	70 409	0.03454	69 208	10.9
77	67 977	0.03859	66 682	10.2
78	65 354	0.04321	63 959	9.6
79	62 530	0.04847	61 032	9.0
80	59 499	0.05443	57 897	8.5
81	56 260	0.06115	54 557	7.9
82	52 820	0.06869	51 021	7.4
83	49 192	0.07709	47 308	6.9
84	45 399	0.08641	43 447	6.5
85	41 476	0.09668	39 476	6.0
86	37 466	0.10765	35 448	5.6
87	33 433	0.11839	31 445	5.3
88	29 475	0.12976	27 551	4.9
89	25 651	0.14305	23 803	4.5
90	21 981	0.15948	20 215	4.2
91	18 476	0.17951	16 795	3.9
92	15 159	0.19624	13 642	3.7
93	12 184	0.21572	10 839	3.5
94	9 556	0.23333	8 407	3.3
95	7 326	0.24774	6 384	3.1
96	5 511	0.25768	4 771	3.0
97	4 091	0.27033	3 514	2.9
98	2 985	0.28150	2 545	2.7
99	2 145	0.29226	1 816	2.6
100	1 518	0.30671	(e)3 825	2.5

(a) lx — number of persons surviving to exact age x.
(b) qx — proportion of persons dying between exact age x and exact age x+1.
(c) Lx — number of person years lived within the age interval x to x+1.
(d) ex — expectation of life at exact age x.
(e) At age 100, L100+ is shown.

4.2 LIFE TABLE, Australia—Females—2008–2010

Age	lx(a) no.	qx(b) rate	Lx(c) no.	ex(d) years
0	100 000	0.00353	99 685	84.0
1	99 647	0.00031	99 629	83.3
2	99 616	0.00016	99 607	82.4
3	99 600	0.00013	99 594	81.4
4	99 588	0.00010	99 582	80.4
5	99 577	0.00009	99 572	79.4
6	99 568	0.00008	99 564	78.4
7	99 560	0.00008	99 556	77.4
8	99 552	0.00007	99 548	76.4
9	99 545	0.00007	99 541	75.4
10	99 538	0.00007	99 534	74.4
11	99 531	0.00008	99 527	73.4
12	99 523	0.00008	99 519	72.4
13	99 515	0.00009	99 511	71.4
14	99 506	0.00012	99 500	70.4
15	99 494	0.00015	99 487	69.4
16	99 480	0.00019	99 471	68.5
17	99 461	0.00022	99 450	67.5
18	99 439	0.00024	99 427	66.5
19	99 415	0.00025	99 403	65.5
20	99 391	0.00025	99 378	64.5
21	99 366	0.00025	99 354	63.5
22	99 341	0.00025	99 329	62.5
23	99 317	0.00026	99 304	61.6
24	99 291	0.00028	99 277	60.6
25	99 263	0.00029	99 249	59.6
26	99 234	0.00031	99 219	58.6
27	99 204	0.00032	99 188	57.6
28	99 172	0.00033	99 156	56.6
29	99 139	0.00035	99 122	55.7
30	99 105	0.00037	99 087	54.7
31	99 068	0.00039	99 049	53.7
32	99 030	0.00041	99 010	52.7
33	98 989	0.00044	98 967	51.7
34	98 945	0.00047	98 922	50.8
35	98 898	0.00051	98 873	49.8
36	98 848	0.00055	98 821	48.8
37	98 793	0.00060	98 764	47.8
38	98 734	0.00065	98 702	46.9
39	98 670	0.00071	98 635	45.9
40	98 600	0.00078	98 562	44.9
41	98 523	0.00085	98 482	44.0
42	98 439	0.00093	98 394	43.0
43	98 347	0.00102	98 298	42.1
44	98 247	0.00112	98 193	41.1
45	98 137	0.00122	98 078	40.1
46	98 017	0.00134	97 953	39.2
47	97 886	0.00146	97 816	38.2
48	97 744	0.00159	97 667	37.3
49	97 588	0.00173	97 505	36.4
50	97 420	0.00187	97 330	35.4
51	97 237	0.00203	97 140	34.5
52	97 040	0.00219	96 935	33.5
53	96 827	0.00237	96 714	32.6
54	96 598	0.00255	96 476	31.7
55	96 352	0.00274	96 221	30.8
56	96 088	0.00296	95 947	29.9
57	95 803	0.00320	95 652	28.9
58	95 497	0.00346	95 334	28.0
59	95 167	0.00376	94 990	27.1
60	94 809	0.00410	94 617	26.2
61	94 420	0.00448	94 212	25.3
62	93 998	0.00491	93 770	24.5
63	93 536	0.00539	93 288	23.6
64	93 032	0.00593	92 761	22.7
65	92 481	0.00653	92 184	21.8
66	91 877	0.00720	91 552	21.0
67	91 216	0.00794	90 860	20.1
68	90 492	0.00875	90 102	19.3
69	89 700	0.00965	89 274	18.4
70	88 834	0.01071	88 367	17.6
71	87 882	0.01213	87 359	16.8
72	86 817	0.01354	86 238	16.0
73	85 641	0.01496	85 010	15.2
74	84 360	0.01656	83 672	14.4
75	82 963	0.01847	82 209	13.7
76	81 430	0.02077	80 599	12.9
77	79 739	0.02353	78 817	12.2
78	77 863	0.02679	76 838	11.5
79	75 777	0.03062	74 637	10.8
80	73 457	0.03507	72 191	10.1
81	70 881	0.04020	69 479	9.4
82	68 031	0.04605	66 489	8.8
83	64 898	0.05268	63 213	8.2
84	61 479	0.06015	59 653	7.6
85	57 782	0.06856	55 822	7.1
86	53 820	0.07805	51 738	6.6
87	49 619	0.08873	47 433	6.1
88	45 216	0.10070	42 950	5.6
89	40 663	0.11405	38 348	5.2
90	36 025	0.12886	33 701	4.8
91	31 383	0.14519	29 093	4.5
92	26 826	0.16308	24 620	4.1
93	22 451	0.18237	20 376	3.8
94	18 357	0.20215	16 466	3.6
95	14 646	0.22143	12 983	3.4
96	11 403	0.23932	9 994	3.2
97	8 674	0.25208	7 538	3.0
98	6 488	0.26484	5 593	2.9
99	4 769	0.27760	4 078	2.8
100	3 445	0.29036	(e)9 164	2.7

(a) lx — number of persons surviving to exact age x.

(b) qx — proportion of persons dying between exact age x and exact age x+1.

(c) Lx — number of person years lived within the age interval x to x+1.

(d) ex — expectation of life at exact age x.

(e) At age 100, L100+ is shown.

4.3 LIFE EXPECTANCY, Australia(a)—Selected years(b)

	AGE (YEARS)									
	0	*1*	*10*	*20*	*30*	*40*	*50*	*60*	*70*	*80*
	MALE									
1990	73.9	73.6	64.8	55.1	45.8	36.4	27.2	18.9	12.0	6.9
1993–1995	75.0	74.5	65.7	55.9	46.6	37.2	28.0	19.5	12.4	7.0
1998–2000	76.6	76.0	67.2	57.4	48.1	38.7	29.5	20.8	13.3	7.6
2003–2005	78.5	77.9	69.0	59.2	49.7	40.2	31.0	22.2	14.4	8.2
2004–2006	78.7	78.1	69.3	59.5	49.9	40.4	31.2	22.3	14.5	8.2
2005–2007	79.0	78.4	69.6	59.7	50.2	40.7	31.4	22.6	14.7	8.3
2006–2008	79.2	78.6	69.7	59.9	50.3	40.8	31.5	22.7	14.8	8.3
2007–2009	79.3	78.7	69.8	60.0	50.4	41.0	31.7	22.9	14.9	8.4
2008–2010	79.5	78.9	70.0	60.2	50.6	41.0	31.7	23.0	15.0	8.5
	FEMALE									
1990	80.1	79.7	70.8	61.0	51.3	41.6	32.1	23.2	15.2	8.7
1993–1995	80.8	80.3	71.4	61.6	51.8	42.1	32.6	23.7	15.6	8.9
1998–2000	82.0	81.4	72.6	62.7	53.0	43.3	33.8	24.7	16.4	9.4
2003–2005	83.3	82.7	73.8	63.9	54.1	44.4	34.9	25.7	17.2	9.9
2004–2006	83.5	82.9	74.0	64.1	54.3	44.5	35.0	25.8	17.3	9.9
2005–2007	83.7	83.1	74.2	64.3	54.5	44.7	35.2	26.0	17.4	10.0
2006–2008	83.7	83.1	74.2	64.3	54.5	44.7	35.2	26.0	17.4	10.0
2007–2009	83.9	83.2	74.3	64.4	54.6	44.9	35.3	26.1	17.5	10.0
2008–2010	84.0	83.3	74.4	64.5	54.7	44.9	35.4	26.2	17.6	10.1

(a) Prior to 1995, life expectancy was based on annual life tables calculated by the ABS. From 1995 to 1998, the life tables were produced as a joint venture between the ABS and the Australian Government Actuary. For Census years, the Australian Government Actuary also produces life tables. See paragraph 48 of the Explanatory Notes for more information.

(b) From 1995 onwards, life expectancy has been calculated using three years of data.

4.4 PROBABILITY OF SURVIVING FROM BIRTH TO SPECIFIC AGES, Australia(a)—Selected years(b)

	AGE (YEARS)								
	1	*10*	*20*	*30*	*40*	*50*	*60*	*70*	*80*
	MALES								
1990	99.1	98.8	98.2	96.9	95.5	93.0	86.4	69.9	40.2
1993–1995	99.3	99.1	98.6	97.4	95.9	93.6	87.8	72.5	43.5
1998–2000	99.4	99.2	98.8	97.5	96.1	94.0	89.1	76.3	49.3
2003–2005	99.5	99.3	99.0	98.1	96.9	94.9	90.6	79.9	55.8
2004–2006	99.5	99.3	99.0	98.1	97.0	95.1	90.8	80.4	56.7
2005–2007	99.5	99.3	99.0	98.2	97.1	95.1	90.9	80.8	58.0
2006–2008	99.5	99.3	99.1	98.3	97.2	95.2	91.1	81.1	58.5
2007–2009	99.5	99.4	99.1	98.3	97.2	95.3	91.1	81.4	59.1
2008–2010	99.5	99.4	99.1	98.4	97.4	95.5	91.2	81.6	59.5
	FEMALES								
1990	99.3	99.1	98.8	98.4	97.7	96.2	92.4	82.9	60.7
1993–1995	99.5	99.3	99.0	98.6	98.0	96.6	93.0	84.2	63.1
1998–2000	99.5	99.4	99.1	98.7	98.1	96.7	93.6	86.1	67.3
2003–2005	99.5	99.4	99.2	98.9	98.4	97.1	94.4	87.8	71.1
2004–2006	99.5	99.4	99.3	98.9	98.4	97.2	94.5	88.1	71.6
2005–2007	99.6	99.4	99.3	99.0	98.4	97.3	94.6	88.4	72.4
2006–2008	99.6	99.4	99.3	99.0	98.5	97.3	94.7	88.5	72.7
2007–2009	99.6	99.5	99.3	99.0	98.5	97.3	94.7	88.6	73.1
2008–2010	99.6	99.5	99.4	99.1	98.6	97.4	94.8	88.8	73.5

(a) Based on life tables. Prior to 1995, life expectancy was based on annual life tables calculated by the ABS. From 1995 to 1998, life tables were produced as a joint venture between the ABS and the Australian Government Actuary. For Census years, the Australian Government Actuary also produces life tables. See paragraph 48 of the Explanatory Notes for more information.

(b) From 1995 onwards, life expectancy has been calculated using three years of data.

CHAPTER 5 MORTALITY ANALYSIS BY REMOTENESS AREAS ...

MORTALITY BY REMOTENESS AREAS

There has been increasing interest in analysis of the differences in mortality statistics by Remoteness Areas (RA). This exploratory feature article is the first produced by the ABS on this topic, using data for the period 2005–2010.

REMOTENESS AREAS

The RAs included in this analysis are as follows:

- Major cities;
- Inner regional;
- Outer regional;
- Remote; and
- Very remote.

For further information on the remoteness structure of Australia see Chapter 8 of *Australian Standard Geographical Classification (ASGC)* (cat. no. 1216.0). It is worth noting that subsequent analysis will be on the Australian Standard Geographical Standard (ASGS), for further information on deaths data on the ASGS, see Appendix 2.

METHODOLOGY

This analysis uses the 2006 Australian Standard Geographical Classification (ASGC) Remoteness Structure. The ABS has the capacity to construct RA level population estimates from Census Collection Districts (CDs). This is the most accurate way of generating RA level data because the RA structure is built from CDs which share common characteristics of remoteness. However, births and deaths registrations data are currently unavailable at the CD level. Therefore, a method of approximating RA data was used.

The concordance of data was undertaken in two stages:

1) Birth and death registrations and population estimates for the years 2005 to 2010 were concorded to 2010 Statistical Local Areas (SLA);

2) SLA concorded births and deaths registrations and population estimates were then concorded to 2006 RAs.

The SLA level data were split and allocated to RAs using a standard concordance for births and deaths registrations and population estimates. However, since SLAs do not correspond perfectly to the remoteness structure, this analysis is considered to be illustrative.

Queensland has been excluded from this analysis as deaths registrations for 2010 include deaths that occurred between 1992 and 2006 but which were not registered until November 2010. As a result, 374 such deaths were registered, many of which were residents of remote and very remote areas of Queensland. Registration of these outstanding deaths has affected mortality rates for remote and very remote areas of Australia, with analysis in this chapter excluding data for Queensland. For further information on this, refer to the *Technical Note: Registration of outstanding deaths,*

METHODOLOGY *continued*

Queensland, 2010 in this publication. Other Territories are also excluded from the remoteness structure.

Year of occurrence data is not affected by the registration of outstanding deaths initiative. However, there is a time-lag in the availability of year of occurrence deaths data and complete data for 2010 is currently not available. It is intended that this analysis will be repeated using year of occurrence data and will include Queensland deaths data once these data are available.

MORTALITY RATES BY REMOTENESS AREAS

To better understand any potential relationship between remoteness and levels of mortality, a number of measures were calculated for each of the RAs.

These include:

- crude death rates;
- age-specific death rates;
- infant mortality rates; and
- standardised death rates.

Definitions of each of these measures can be found in the *Glossary*.

The majority of the population of Australia lives in urban areas. For example, in 2010, 71% of the population of Australia resided in major cities and only 0.7% resided in very remote areas. Similarly, 66% of deaths in Australia were of residents of major cities and just 0.5% of deaths were residents in very remote areas (noting that Queensland and Other Territories are excluded from this measure).

To avoid any misleading analysis of rates that are based on only a small number of deaths, in cases where there were fewer than 20 deaths in a RA, these locations were excluded from analysis of mortality rates. The RAs included in this analysis are listed in table 5.1.

5.1 REMOTENESS AREAS INCLUDED IN ANALYSIS, States and territories—2005 to 2010

	REMOTENESS AREA				
New South Wales	Major cities	Inner regional	Outer regional	Remote	(a)
Victoria	Major cities	Inner regional	Outer regional	(a)	(b)
South Australia	Major cities	Inner regional	Outer regional	Remote	Very remote
Western Australia	Major cities	Inner regional	Outer regional	Remote	Very remote
Tasmania	(b)	Inner regional	Outer regional	Remote	(a)
Northern Territory	(b)	(b)	Outer regional	Remote	Very remote
Australian Capital Territory	Major cities	(b)	(b)	(b)	(b)
Australia(c)	Major cities	Inner regional	Outer regional	Remote	Very remote

(a) Not included in analysis due to small death counts.
(b) No geographical jurisdiction coded to this remoteness area.
(c) Excludes Queensland and Other Territories.

Crude death rates

The crude death rate (CDR) is the simplest mortality indicator that can be estimated, but is limited by being unable to control for the age structure of the population. CDRs are presented in table 5.7 but not analysed further in this article.

Age-specific death rate

Age-specific death rates (ASDRs) for 2010 are presented in table 5.8. Death rates for persons aged zero use births registered in 2010 as a denominator. No data are presented for age zero separately for males and females due to small death counts. All other age groups use preliminary Estimated Resident Population (ERP) at 30 June 2010 as a denominator.

ASDRs generally increase with remoteness except for persons aged 85 years and over. However, very remote areas have the lowest ASDR of all RAs for persons aged 85 years and over. This may be because death may more commonly occur at ages younger than 80 years in remote and very remote areas and those surviving into their 80's relocate to inner regional and outer regional RAs to improve their access to aged care and health services. ASDRs are usually higher for males than for females except for the over 85 year old age group in very remote areas, where ASDRs are higher for females than for males.

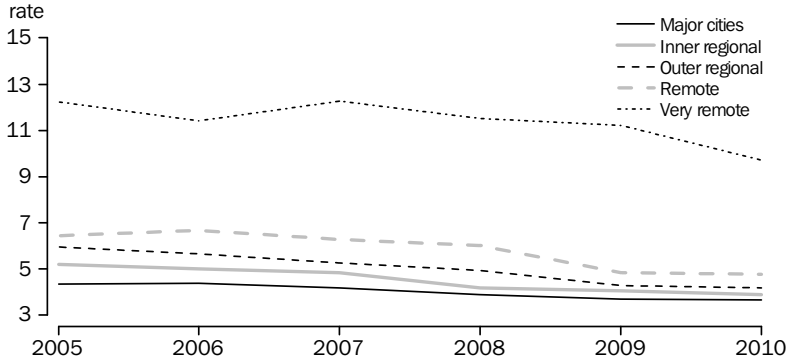
AGE-SPECIFIC DEATH RATE RATIOS

ASDR ratios (table 5.9) have been calculated in order to compare ASDRs in each RA with the ADRS for the total Australian population. ASDR ratios are lower than 1.0 for all age groups in major cities and are generally higher than 1.0 in all other RAs for almost every age group. There are two exceptions. ASDR ratios are below 1.0 for infants and children aged 1–4 years in inner regional RAs and below 1.0 for age groups 80 years and over in remote and very remote areas.

Infant mortality rate

Infant mortality rates (IMRs) have been calculated as a three-year average ending in the reference year, for 2005 to 2010 (see graph below). Data are by RA for Australia (excluding Queensland).

5.2 INFANT MORTALITY RATES(a)(b), Remoteness Areas—Australia(c)—2005 to 2010



(a) Infant deaths per 1,000 live births.
(b) Rates calculated as the average of the three years ending in the reference year.
(c) Excludes Queensland and Other Territories.

In 2005, IMRs were highest in very remote areas (12.2 deaths per 1,000 live births) and lowest in major cities (4.4). Between major cities and remote areas, the difference in rates was 2.0 and between remote and very remote areas, the difference in rates was 5.8. This pattern is consistent for other years. An improvement in rates was observed in all RAs between 2005 and 2010: the largest decline in IMRs occurred in very remote areas

Infant mortality rate continued

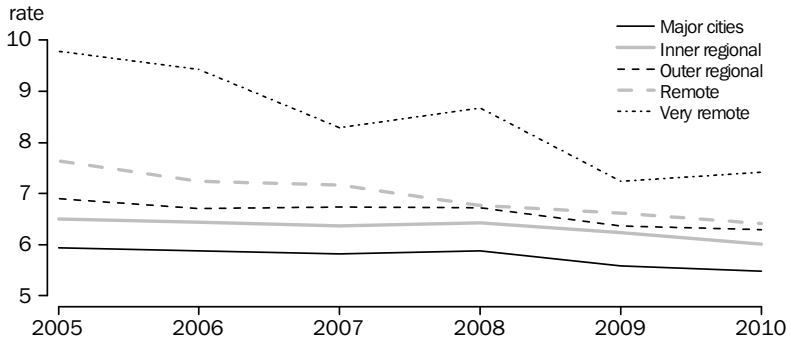
(by 2.5) and the smallest decline occurred in major cities (by 0.7). This meant that, in 2010, the IMR in very remote areas was still 2.6 times the rate in major cities.

Standardised death rates

In this article, the study populations are the total, male and female populations of RAs over the period 2005 to 2010, while the standard population used was the total persons in the Australian population at 30 June 2001. The direct standardisation method has been used. Since the same standard population is used for all RAs and years, SDRs are directly comparable across RA categories and over time.

SDRs by RA for 2005 to 2010 are graphed below. As with IMRs, SDRs in 2005 were highest in very remote areas (9.8) and lowest in major cities (5.9). Between major cities and remote areas, the difference in rates was 1.7 and between remote and very remote areas, the difference in rates was 2.2. Between 2005 and 2010, SDRs declined across all RAs and the rate of decline was stronger as the level of remoteness increased.

5.3 STANDARDISED DEATH RATES(a)(b), Australia(c)—2005 to 2010

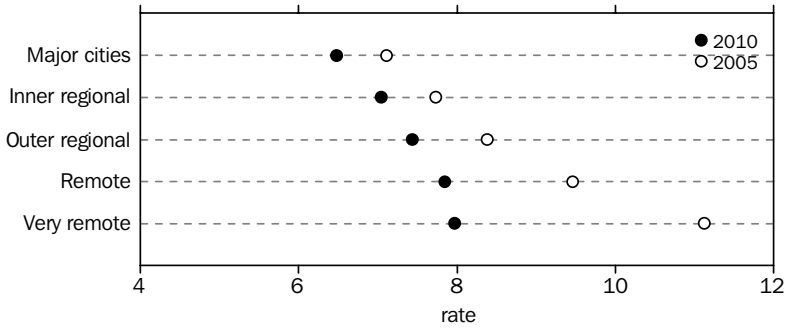


(a) Deaths per 1,000 standard population. Standardised death rates are calculated using the total persons in the Australian population at 30 June 2001 as the standard population.
(b) Rates calculated as the average of the three years ending in the reference year.
(c) Excludes Queensland and Other Territories.

Male and female standardised death rates

In graph 5.4, male SDRs were larger as the level of remoteness increased. In 2005, SDRs in very remote areas were 11.1 deaths per 1,000 standard population, 4.0 higher than in major cities. By 2010, this difference in SDRs had reduced to 1.5. The rates fell by 3.2 in very remote areas and by 0.6 in major cities between 2005 and 2010.

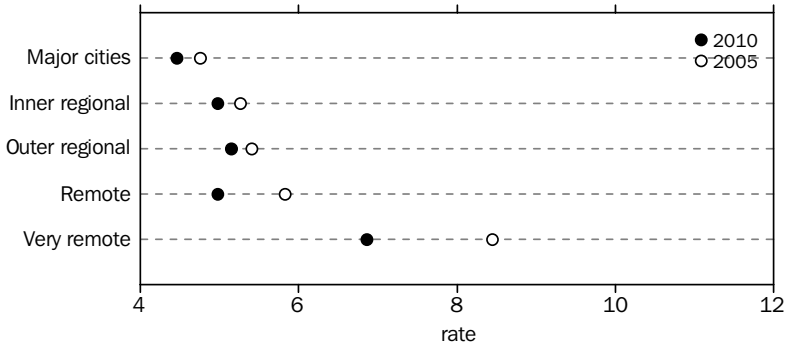
5.4 STANDARDISED MORTALITY RATES(a)(b), Males—Australia(c)—2005 and 2010



(a) Deaths per 1,000 standard population. Standardised death rates are calculated using the total persons in the Australian population at 30 June 2001 as the standard population.
(b) Rates calculated as the average of the three years ending in the reference year.
(c) Excludes Queensland and Other Territories.

Female SDRs by RA in 2005 and 2010 are graphed below. As for male SDRs, in 2005, female SDRs were larger as the level of remoteness increased. By 2010, female SDRs had improved most in very remote areas (1.6) and remote areas (0.8) and were slightly higher in outer regional RAs (5.2) than in remote areas (5.0).

5.5 STANDARDISED MORTALITY RATES(a)(b), Females—Australia(c)—2005 and 2010

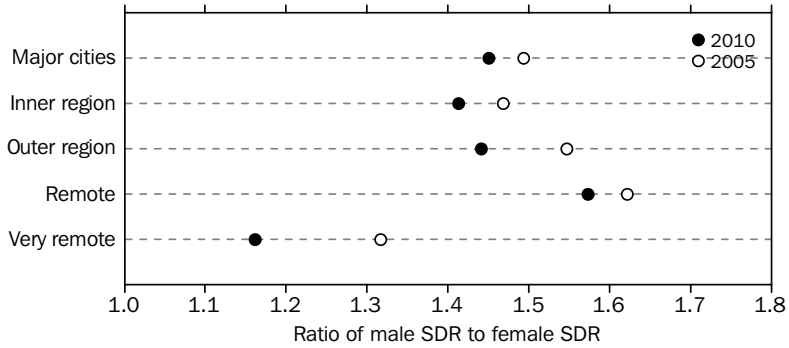


(a) Deaths per 1,000 standard population. Standardised death rates are calculated using the total persons in the Australian population at 30 June 2001 as the standard population.
(b) Rates calculated as the average of the three years ending in the reference year.
(c) Excludes Queensland and Other Territories.

The ratio of male and female SDRs in 2005 and 2010 is illustrated in graph 5.6. In both years, all RAs had higher male SDRs than female SDRs. However, all RAs had smaller ratios in 2010 than in 2005, indicating a reduction in the excess of mortality of males over females. In 2005, the ratio was largest in remote areas (1.62) and the smallest in very remote areas (1.32). By 2010, the largest reduction in ratios was in very remote areas (0.16) and the smallest in major cities (0.04).

Male and female standardised death rates continued

5.6 RATIO OF MALE SDR TO FEMALE SDR(a)(b), Australia(c)—2005 and 2010



(a) Deaths per 1,000 standard population. Standardised death rates are calculated using the total persons in the Australian population at 30 June 2001 as the standard population.
(b) Rates calculated as the average of the three years ending in the reference year.
(c) Excludes Queensland and Other Territories.

State and territory differences in standardised death rates

During the period 2005 to 2010, the RAs of New South Wales, South Australia and Western Australia had similar SDRs to the pattern shown at the Australia level. In 2010, the most notable differences from the SDR for Australia was found in the Northern Territory, which had a higher very remote area SDRs (9.5) than the total Australian SDR (7.4). Similarly, the remote area SDR for the Northern Territory in 2010 was 8.3 as compared with 6.4 for Australia.

CONCLUSION

This article has examined mortality by RA between 2005 and 2010. A range of mortality indicators have been produced, which clearly showed that, a) very remote areas of Australia had consistently higher mortality rates than the other RAs, b) remote, inner and outer regional RAs had higher mortality rates than major cities. These differences declined from 2005 to 2010, for all states and territories, age groups, and for both males and females. An exception is the population aged 80 years and over, which had higher ASDRs in inner and outer regional RAs than in remote and very remote areas.

Analysis of mortality by RA has not been previously published by the ABS. This feature article therefore provides initial exploratory analysis which is illustrative of the patterns in mortality across different categories of RAs in Australia. It is intended that in future, mortality analysis similar to this, will be conducted using deaths based on year of occurrence, which will also allow for the inclusion of Queensland deaths data (which was not included in this study due to the effects of the registration of outstanding deaths in Queensland in 2010). It is hoped that this analysis will encourage further discussion about differences in mortality by RA and the factors underpinning these variations.

Any questions, comments or feedback regarding this work is welcomed and should be directed to Shahidullah (02 6252 6487) or Nick McTurk (02 6252 5411) or emailed to demography@abs.gov.au.

SUMMARY TABLES

5.7 CRUDE DEATH RATES(a), Remoteness Areas and sex—Australia(b)—2010

	Major cities	*Inner regional*	*Outer regional*	*Remote*	*Very remote*	*Total*
	rate	rate	rate	rate	rate	rate
MALES						
NSW	6.1	8.3	9.0	9.7	(c)np	6.8
Vic.	5.9	8.0	9.6	(c)np	(d). .	6.5
SA	7.7	7.4	9.3	7.9	6.1	7.9
WA	5.7	6.4	6.3	5.2	4.9	5.8
Tas.	(d). .	8.2	8.8	6.8	(c)np	8.5
NT	(d). .	(d). .	4.4	5.5	5.6	5.2
ACT	4.9	(d). .	(d). .	(d). .	(d). .	5.0
Aust.	6.1	8.0	8.3	6.6	5.6	6.7
FEMALES						
NSW	5.9	7.8	8.4	6.2	(c)np	6.5
Vic.	5.9	7.4	8.6	(c)np	(d). .	6.3
SA	7.8	7.5	8.8	7.3	6.4	7.9
WA	5.3	5.6	5.1	3.2	3.5	5.2
Tas.	(d). .	8.5	7.7	7.4	(c)np	8.3
NT	(d). .	(d). .	2.4	3.7	4.1	3.2
ACT	4.4	(d). .	(d). .	(d). .	(d). .	4.4
Aust.	6.0	7.5	7.4	4.8	4.2	6.4
PERSONS						
NSW	6.0	8.1	8.7	8.1	(c)np	6.6
Vic.	5.9	7.7	9.1	(c)np	(d). .	6.4
SA	7.8	7.5	9.1	7.6	6.3	7.9
WA	5.5	6.0	5.7	4.3	4.3	5.5
Tas.	(d). .	8.4	8.3	7.1	(c)np	8.4
NT	(d). .	(d). .	3.4	4.6	4.9	4.3
ACT	4.7	(d). .	(d). .	(d). .	(d). .	4.7
Aust.	6.1	7.8	7.8	5.7	5.0	6.5

. . not applicable
np not available for publication but included in totals where applicable, unless otherwise indicated
(a) Deaths per 1,000 persons.
(b) Excludes Queensland and Other Territories.
(c) Not included in analysis due to small death counts.
(d) No geographical jurisdiction coded to this remoteness area.

5.8 AGE-SPECIFIC DEATH RATES(a), Remoteness areas and sex—Australia(b)—2010

	Major cities	*Inner regional*	*Outer regional*	*Remote*	*Very remote*	*Total*
	rate	rate	rate	rate	rate	rate
MALES						
0 (c)	np	np	np	np	np	np
1–4	0.2	0.2	0.5	0.5	0.7	0.2
0–4	1.0	1.0	1.3	1.0	3.2	1.1
5–9	0.1	0.2	0.2	0.3	—	0.1
10–14	0.1	0.1	0.1	—	0.2	0.1
15–19	0.3	0.7	0.7	1.6	1.8	0.5
20–24	0.5	0.8	1.1	2.1	3.0	0.6
25–29	0.6	0.9	0.8	1.1	1.8	0.7
30–34	0.7	1.0	1.1	1.7	3.1	0.9
35–39	1.0	1.2	1.9	1.9	3.4	1.2
40–44	1.4	1.7	1.9	2.4	5.8	1.6
45–49	2.1	2.6	3.0	3.2	3.5	2.3
50–54	3.1	3.6	4.2	5.6	6.4	3.4
55–59	4.9	5.4	5.5	7.4	10.3	5.2
60–64	7.3	8.1	9.6	9.8	16.5	7.8
65–69	12.3	13.0	13.9	21.1	21.8	12.9
70–74	20.9	22.0	24.1	26.6	26.9	21.7
75–79	35.8	38.8	39.5	42.4	31.4	37.0
80–84	65.3	70.7	73.3	60.9	62.4	67.4
85 and over	143.1	148.3	146.2	129.9	64.9	144.4
FEMALES						
0(c)	np	np	np	np	np	np
1–4	0.1	0.2	0.3	—	0.2	0.2
0–4	0.7	0.7	1.0	1.3	1.4	0.8
5–9	0.1	0.1	—	0.1	—	0.1
10–14	0.1	0.1	0.1	—	1.5	0.1
15–19	0.1	0.3	0.4	0.3	0.5	0.2
20–24	0.2	0.3	0.6	0.3	1.0	0.2
25–29	0.3	0.4	0.4	1.0	1.2	0.3
30–34	0.3	0.5	0.6	0.9	0.6	0.4
35–39	0.5	0.6	0.6	0.9	3.5	0.6
40–44	0.8	0.9	1.0	0.7	5.3	0.9
45–49	1.3	1.4	1.7	1.6	3.8	1.4
50–54	1.9	2.4	2.7	2.9	5.6	2.1
55–59	2.9	3.4	3.5	3.1	4.7	3.1
60–64	4.5	4.9	4.5	6.2	11.3	4.7
65–69	7.1	7.8	8.1	8.8	14.4	7.4
70–74	12.5	13.6	15.5	15.6	19.0	13.1
75–79	22.1	24.7	27.2	25.6	37.5	23.2
80–84	44.2	48.8	48.4	47.7	46.7	45.7
85 and over	122.9	135.3	131.2	113.1	107.5	126.3

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Deaths per 1,000 persons, except age 0.

(b) Excludes Queensland and Other Territories.

(c) Not published due to small death counts.

5.8 AGE-SPECIFIC DEATH RATES(a), Remoteness areas and sex—Australia(b)—2010 *continued*

	Major cities	*Inner regional*	*Outer regional*	*Remote*	*Very remote*	*Total*
	rate	rate	rate	rate	rate	rate
			PERSONS			
0 (c)	3.6	3.7	4.5	4.7	9.8	3.8
1–4	0.2	0.2	0.4	0.3	0.5	0.2
0–4	0.9	0.9	1.1	1.2	2.3	0.9
5–9	0.1	0.1	0.1	0.2	—	0.1
10–14	0.1	0.1	0.1	—	0.8	0.1
15–19	0.2	0.5	0.6	1.0	1.2	0.3
20–24	0.3	0.5	0.9	1.3	2.0	0.4
25–29	0.4	0.7	0.6	1.0	1.5	0.5
30–34	0.5	0.7	0.9	1.3	2.0	0.6
35–39	0.8	0.9	1.3	1.4	3.4	0.9
40–44	1.1	1.3	1.5	1.6	5.6	1.2
45–49	1.7	2.0	2.4	2.5	3.6	1.8
50–54	2.5	3.0	3.5	4.4	6.1	2.8
55–59	3.9	4.4	4.5	5.5	7.9	4.1
60–64	5.9	6.5	7.2	8.2	14.3	6.3
65–69	9.6	10.4	11.1	15.5	18.6	10.1
70–74	16.5	17.7	19.8	21.5	23.6	17.2
75–79	28.3	31.3	33.2	34.1	34.2	29.6
80–84	53.1	58.5	59.7	54.3	54.5	55.0
85 and over	129.7	139.9	136.7	119.2	86.4	132.5

— nil or rounded to zero (including null cells)

(a) Deaths per 1,000 persons, except age 0.

(b) Excludes Queensland and Other Territories.

(c) Infant deaths per 1,000 live births.

SUMMARY TABLES

continued

5.9 AGE-SPECIFIC DEATH RATE RATIOS(a), Remoteness areas—Australia(b)—2010

	Major cities	*Inner regional*	*Outer regional*	*Remote*	*Very remote*	*Total*
	ratio	ratio	ratio	ratio	ratio	ratio
	PERSONS					
0(c)	0.943	0.987	1.182	1.250	2.584	1.000
1–4	0.868	0.962	1.885	1.365	2.348	1.000
0–4	0.948	0.925	1.229	1.267	2.491	1.000
5–9	0.885	1.284	1.141	2.154	0.200	1.000
10–14	0.831	1.239	1.143	0.214	8.603	1.000
15–19	0.714	1.450	1.698	2.862	3.421	1.000
20–24	0.784	1.223	2.066	3.031	4.787	1.000
25–29	0.857	1.317	1.270	2.098	3.125	1.000
30–34	0.865	1.174	1.406	2.115	3.164	1.000
35–39	0.891	1.055	1.447	1.611	3.928	1.000
40–44	0.901	1.081	1.184	1.298	4.549	1.000
45–49	0.920	1.067	1.277	1.343	1.968	1.000
50–54	0.903	1.094	1.260	1.583	2.201	1.000
55–59	0.940	1.071	1.099	1.328	1.920	1.000
60–64	0.940	1.039	1.146	1.316	2.281	1.000
65–69	0.952	1.025	1.101	1.532	1.836	1.000
70–74	0.955	1.026	1.151	1.249	1.369	1.000
75–79	0.956	1.058	1.121	1.153	1.156	1.000
80–84	0.965	1.063	1.084	0.986	0.991	1.000
85 and over	0.979	1.056	1.031	0.900	0.652	1.000

(a) Ratio of specific RA category to total.

(b) Excludes Queensland and Other Territories.

(c) Infant deaths per 1,000 live births.

EXPLANATORY NOTES

INTRODUCTION

1 This publication contains statistics for deaths and mortality in Australia. Detailed information can be obtained from data cubes (in Microsoft Excel format) available for download from the ABS website (see paragraph 60).

2 A glossary is provided detailing definitions of terminology used. A list of abbreviations is also available.

SCOPE AND COVERAGE

3 Statistics in this publication relate to the number of deaths registered during the calendar year shown, unless otherwise stated. Statistics relating to deaths by year of occurrence can be obtained from data cubes available for download from the ABS website (see paragraph 60).

Scope of death statistics

4 The ABS Death Registrations collection includes all deaths that occurred and were registered in Australia, including deaths of persons whose place of usual residence was overseas. Deaths of Australian residents that occurred outside Australia may be registered by individual Registrars, but are not included in ABS death statistics.

5 The scope of the statistics includes:

- all deaths being registered for the first time;
- deaths of temporary visitors to Australia (including visitors from Norfolk Island);
- deaths that occurred within Australian Territorial waters;
- deaths that occurred in Australian Antarctic Territories or other external territories (excluding Norfolk Island);
- deaths that occurred in transit (i.e. on ships or planes) if registered in the state or territory of 'next port of call';
- deaths of Australian nationals employed overseas at Australian legations and consular offices (i.e. deaths of Australian diplomats while overseas) where able to be identified; and
- deaths that occurred in earlier years that have not previously been registered (late registrations).

6 The scope of the statistics excludes:

- still births/fetal deaths (these are accounted for in perinatal death statistics published in *Perinatal Deaths, Australia,* cat. no. 3304.0, and previously, *Causes of Death, Australia*, cat. no. 3303.0);
- repatriation of human remains of decedents whose death occurred overseas;
- deaths of foreign diplomatic staff in Australia (where able to be identified); and
- deaths occurring on Norfolk Island.

7 The scope for each reference year of the Death Registrations collection includes:

- deaths registered in the reference year and received by ABS in the reference year;
- deaths registered in the reference year and received by ABS in the first quarter of the subsequent year; and
- deaths registered in the years prior to the reference year but not received by ABS until the reference year or the first quarter of the subsequent year, provided that these records have not been included in any statistics from earlier periods.

Scope of death statistics continued

8 Death records received by ABS during the March quarter 2011 which were initially registered in 2010 (but not fully completed until 2011) were assigned to the 2010 reference year. Any registrations relating to 2010 which were received by ABS from April 2011 were assigned to the 2011 reference year.

9 Prior to 2007, the scope for the reference year of the Death Registrations collection included:

- deaths registered in the reference year and received by ABS in the reference year;
- deaths registered in the reference year and received by ABS in the first quarter of the subsequent year; and
- deaths registered during the two years prior to the reference year but not received by ABS until the reference year.

Coverage of death statistics

10 Ideally, for compiling annual time series, the number of events (deaths) should be recorded as all those occurring within a given reference period such as a calendar year. Due to lags in registration of deaths and the provision of that information to the ABS from state and territory Registrars of Births, Deaths and Marriages, data in this publication are presented on a year of registration basis.

11 In effect, there are three dates attributable to each death registration:

- the date of occurrence (of the death);
- the date of registration or inclusion on the state/territory register; and
- the month and year in which the registered event is provided to the ABS.

CLASSIFICATIONS

Marital status

12 Marital status relates to the registered marital status of the deceased at the time of death, which refers to formally registered marriages or divorces for which a certificate is held.

13 From 2007 onwards, marital status at death is provided by registries as legal marital status. Previously, a mix of legal and social marital status was used by some states and territories.

Australian Standard Geographical Classification

14 The Australian Standard Geographical Classification (ASGC) is a hierarchical classification system consisting of six interrelated classification structures. The ASGC provides a common framework of statistical geography and thereby enables the production of statistics which are comparable and can be spatially integrated. From July 2011, the ABS will be replacing the ASGC with the new Australian Statistical Geography Standard (ASGS) that will define more stable, consistent and meaningful areas. Future issues of this publication will release death statistics under the ASGS (see *Appendix: ASGS and the availability of sub-state death statistics* for more information)

15 For further information, refer to *Australian Standard Geographical Classification (ASGC)* (cat.no.1216.0) and *Australian Statistical Geography Standard (ASGS): Volume 1 - Main Structure and Greater Capital City Statistical Areas, July 2011* (cat. no. 1270.0.55.001).

Standard Australian Classification of Countries

16 The Standard Australian Classification of Countries (SACC) (Second Edition) groups neighbouring countries into progressively broader geographical areas on the basis of their similarity in terms of social, cultural, economic and political characteristics.

17 For further information refer to *Standard Australian Classification of Countries (SACC) Second Edition* (cat. no. 1269.0).

DATA SOURCES

18 Registration of deaths is the responsibility of state and territory Registrars of Births, Deaths and Marriages. Information about the deceased is acquired from a Death Registration Form (DRF) which is completed by the funeral director, based on information supplied by a relative or other person acquainted with the deceased, or by an official of the institution where the death occurred. As part of the registration process, information on the cause of death is either supplied by the medical practitioner certifying the death on a Medical Certificate of Cause of Death (MCCD), or supplied as a result of a coronial investigation. This information is provided to the ABS by individual Registrars for coding and compilation into aggregate statistics shown in this publication.

State and territory data

19 As a result of an amendment made in 1992 to section 17(a) of the *Acts Interpretation Act 1901–1973 (Cwlth)* the Indian Ocean territories of Christmas Island and Cocos (Keeling) Islands have been included as part of geographic Australia, hence another category of the state and territory classification has been created. This category is known as 'Other Territories' and includes Christmas Island, the Cocos (Keeling) Islands and Jervis Bay Territory.

20 Prior to 1993, deaths of persons usually resident in Christmas Island or Cocos (Keeling) Islands were included with Off-Shore Areas and Migratory in Western Australia, while deaths of persons usually resident in Jervis Bay Territory were included with the Australian Capital Territory. In 2010, there were 10 deaths of persons usually resident in Christmas Island, the Cocos (Keeling) Islands or Jervis Bay Territory.

21 Death statistics for states and territories have been compiled and presented according to the state or territory of usual residence of the deceased, regardless of where in Australia the death occurred and was registered, except where otherwise stated. Deaths which took place outside Australia are excluded from the statistics.

22 In the following table, data are presented on a state or territory of registration basis. Deaths which took place outside Australia are excluded from the statistics. Deaths of persons who were usual residents of Australia's Other Territories (Christmas Island, Cocos (Keeling) Islands and Jervis Bay Territory) are registered in other Australian states.

DEATHS, State or territory of usual residence and state or territory of registration—2010

State or territory of usual residence	STATE OR TERRITORY OF REGISTRATION								
	NSW	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*ACT*	*Aust.* (a)
NSW	47 029	222	377	43	17	8	3	246	47 945
Vic.	159	35 330	53	42	13	10	8	8	35 623
Qld	183	48	27 022	9	6	6	12	3	27 289
SA	16	31	17	12 878	5	3	7	—	12 957
WA	17	8	10	5	12 662	np	14	np	12 720
Tas.	np	20	4	np	np	4 232	np	np	4 269
NT	np	6	9	28	6	np	928	—	981
ACT	37	5	5	np	np	—	np	1 629	1 679
Aust. (a)	***47 453***	***35 670***	***27 497***	***13 007***	***12 720***	***4 263***	***974***	***1 889***	***143 473***

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Includes Other Territories.

State and territory data continued

23 In 2010, there were 306 deaths registered in Australia of persons who usually lived overseas. These have been included in this publication with state and territory of usual residence classified according to the state or territory in which the death was registered.

DEATHS, Persons usually resident overseas—2004 to 2010

	2004	2005	2006	2007	2008	2009	2010
State or territory of registration							
New South Wales	98	101	90	95	115	87	89
Victoria	56	33	52	45	48	48	53
Queensland	81	76	87	85	72	87	93
South Australia	16	13	8	13	13	4	13
Western Australia	40	45	61	50	43	49	38
Tasmania	5	7	7	5	3	8	4
Northern Territory	6	12	10	12	13	8	12
Australian Capital Territory	5	4	4	10	3	4	4
Australia	***307***	***291***	***319***	***315***	***310***	***295***	***306***

Sub-state/territory mortality rates

24 Indirect standardised death rates for sub-state/territory regions (for example, Statistical Divisions) presented in accompanying speadsheets released with this publication are average rates for three years ending in the reference year. Rates for Australia and the states and territories in all other tables are based on single years of death registration data.

DATA QUALITY

25 In compiling death statistics, the ABS employs a variety of measures to improve the quality of the death registrations collection. While every opportunity is taken to ensure that the highest quality of statistics are provided, the following are known issues associated with the statistics included in this publication.

Interval between occurrence and registration of deaths

26 For the most part, statistics in this publication refer to deaths registered during the calendar year shown. There is usually an interval between the occurrence and registration of a death (referred to as a registration 'lag'), and as a result, some deaths occurring in one year are not registered until the following year or later. This can be caused by either a delay in the submission of a completed form to the registry, or a delay by the registry in processing the death. Deaths which occur in November and December are also likely to be registered in the following year.

DEATHS REGISTERED IN 2010, Year of occurrence— Selected years

	STATE OR TERRITORY OF REGISTRATION								
	NSW	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*ACT*	*Aust.*
Year of occurrence	%	%	%	%	%	%	%	%	%
2007 and earlier	—	0.1	1.4	—	0.1	0.1	0.6	—	0.3
2008	—	—	0.1	—	0.2	—	0.3	—	—
2009	5.1	6.4	5.0	4.8	4.1	4.3	13.2	6.2	5.3
2010	94.9	93.4	93.5	95.2	95.6	95.6	85.8	93.8	94.3

— nil or rounded to zero (including null cells)

27 Of the 143,500 deaths registered in 2010, 94.3% occurred in 2010, while 5.3% occurred in 2009 and the remainder (0.3%) occurred in 2008 or earlier years.

Unknown infant age at death

28 For some infant deaths, only limited information for age at death is known. These deaths are included in the following categories:

- not stated minutes and not stated hours (i.e. age at death was under one day) are included in 'Under one day';
- not stated days (i.e. age at death was at least one day but under one month) are included in 'One week to under four weeks'; and
- not stated months (i.e. age at death was at least one month but under one year) are included in 'Four weeks to under one year'.

Aboriginal and Torres Strait Islander deaths and mortality rates

29 The ABS Death Registrations collection identifies a death as being Aboriginal and/or Torres Strait Islander where the deceased is recorded as an Aboriginal, Torres Strait Islander, or both through the death registration process.

30 While it is considered likely that most deaths of Aboriginal and Torres Strait Islander Australians are registered, a proportion of these deaths are not reported as such by the family, health worker or funeral director during the death registration process. That is, whilst data are provided to the ABS for the Indigenous status question for 99.1% of all deaths, there are concerns regarding the accuracy of the data. The Indigenous status question may not always be directly asked of relatives and friends of the deceased by the funeral director.

31 This publication includes the number of registered deaths of Aboriginal and Torres Strait Islander Australians for all jurisdictions. However, due to the data quality issues outlined below, detailed disaggregations of deaths of Aboriginal and Torres Strait Islander Australians are provided only for New South Wales, Queensland, South Australia, Western Australia and the Northern Territory. In *Chapter 3: Deaths of Aboriginal and Torres Strait Islander Australians,* the 'total' variable is an aggregation of these five states. Note: In this publication, deaths data for WA for the reference years 2007, 2008 and 2009 have been suppressed due to ongoing investigations into unusual fluctuations. See paragraph 36.

32 There are several data collection forms on which people are asked to state whether they are Aboriginal and/or Torres Strait Islander Australian. Due to a number of factors, the results are not always consistent. The likelihood that a person will report, or be recorded, as an Aboriginal and Torres Strait Islander Australian on a specific form is known as the propensity to identify. Propensity to identify as an Aboriginal and Torres Strait Islander Australian can be thought of as the proportion of the total, unknown, number of people who are reported and were recorded as such on a specific form.

33 Propensity to identify and be recorded as an Aboriginal and Torres Strait Islander Australian is determined by a range of factors, including:

- how the information is collected (e.g. census, survey, or administrative data);
- who provides the information (e.g. the person in question, a relative, a health professional, or an official);
- the perception of why the information is required, and how it will be used; and
- cultural aspects and feelings associated with reporting as an Aboriginal and Torres Strait Islander Australian.

34 In addition to those deaths recorded as Aboriginal and Torres Strait Islander Australians, a number of deaths occur each year where Indigenous status is not stated on the death registration form. In 2010, there were 1,200 deaths registered in Australia for whom Indigenous status was not stated, representing 0.9% of all deaths registered.

35 Data presented in this publication may therefore underestimate the level of Aboriginal and Torres Strait Islander deaths and mortality in Australia. Caution should be exercised when interpreting data for Aboriginal and Torres Strait Islander Australians presented in this publication, especially with regard to year-to-year changes.

Aboriginal and Torres Strait Islander deaths and mortality rates continued

36 Due to the increased focus on the mortality rates of Aboriginal and Torres Strait Islander Australians, a number of projects have been undertaken to investigate the quality of these data. These include:

- A Council of Australian Governments (COAG)-funded assessment of Aboriginal and Torres Strait Islander Australians reporting in key data sets, for example, the birth and death registration systems managed by state and territory Registries of Births, Deaths and Marriages.
- Data integration projects undertaken by several state and territory government departments using health and death records.
- Ongoing ABS investigations into the unusual volatility in the number of deaths of Aboriginal and Torres Strait Islander Australians registered in Western Australia in recent years. Until this investigation is finalised, caution should be exercised when interpreting Aboriginal and Torres Strait Islander Australian data for 2007, 2008 and 2009. For further information see *Changes in this Issue* (page 2).
- The December quarter 2010 saw the Queensland Registry of Births, Deaths and Marriages finalise death registrations where there was previously incomplete information. As part of the registration of outstanding deaths initiative, 374 deaths were registered; of which approximately 76% were deaths of Aboriginal and Torres Strait Islander Australians. See *Technical Note* for more information.
- As discussed in Chapter 3, the ABS also conducted the Indigenous Mortality Quality Study as part of the Census Data Enhancement Project following the 2006 Census to investigate the consistency of Aboriginal and Torres Strait Islander reporting between death registrations and the 2006 Census. See *Information Paper: Census Data Enhancement—Indigenous Mortality Quality Study, 2006–07* (cat. no. 4723.0). ABS is currently undertaking work to repeat the Census Data Enhancement project for 2011 Census and post-census deaths. See *Census Data Enhancement Project: An Update, Oct 2010* (cat no. 2062.0).

Aboriginal and Torres Strait Islander Australian life tables

37 Life tables for the Aboriginal and Torres Strait Islander population for the period 2005 to 2007 were published in May 2009 in *Experimental Life Tables for Aboriginal and Torres Strait Islander Australians, 2005–2007* (cat. no. 3302.0.55.003).

38 Estimates of life expectancy at birth for the total population presented in *Experimental Life Tables for Aboriginal and Torres Strait Islander Australians, 2005–2007* (cat. no. 3302.0.55.003) differ from estimates published in *Deaths, Australia, 2006* (cat. no. 3302.0). Estimates presented in *Experimental Life Tables for Aboriginal and Torres Strait Islander Australians, 2005–2007* (cat. no. 3302.0.55.003) are derived from abridged life tables with an upper age limit of 85 years and over, using numbers of deaths registered in 2005–2007 and the population as at 30 June 2006, while life expectancy estimates in *Deaths, Australia, 2006* (cat. no. 3302.0) are based on complete life tables with an upper age group of 115 years and over, using deaths according to month of occurrence in 2005–2007 and quarterly population estimates. In addition, graduation processes applied to both sets of life tables differ. See paragraphs 43 to 52 for more information on life tables.

Principles on the use of direct age-standardisation

39 In the National Indigenous Reform Agreement (NIRA), the Council of Australian Governments (COAG) agreed to a set of targets for closing the gap in Aboriginal and Torres Strait Islander disadvantage. Mortality rates are one of the performance indicators specified in the NIRA to measure progress against this target.

40 Age-standardised rates, along with infant and child mortality rates, are used to determine whether mortality of Aboriginal and Torres Strait Islander population is declining over time and whether the gap between Aboriginal and Torres Strait Islander and non-Indigenous populations is narrowing. However, there were some inconsistencies in the way different government agencies calculated age-standardised

Principles on the use of direct age-standardisation continued

rates in the past. The Australian Bureau of Statistics (ABS) hosted a workshop on age-standardisation on 19 April 2011 to discuss the best method of age-standardisation (direct or indirect) and to produce a clear set of guidelines specifically for the analysis and reporting of COAG "Closing the Gap" indicators. Workshop participants agreed that the direct method is the most preferred method of age-standardisation as it allows for valid comparisons of mortality rates between different study populations and across time.

41 The direct method has also been applied to the dissemination of death rates by country of birth in this publication, replacing the previous indirect standardised death rates. Standardised death rates for countries with less than a total of 20 deaths, or geographies with less than 30 ERP in any one age group are not available for publication.

42 For further information, see *Appendix: Principles on the use of direct age-standardisation*.

LIFE TABLES

43 A life table is a statistical model used to represent mortality of a population. In its simplest form, a life table is generated from age-specific death rates and the resulting values are used to measure mortality, survivorship and life expectancy.

44 Life tables in this publication are current, or period, life tables, based on death rates for a short period of time during which mortality has remained much the same. Mortality rates used in the Australian and state and territory life tables are based on death registrations and estimated resident population for the period 2008–2010. The life tables do not take into account future assumed improvements in mortality.

45 Life tables are presented separately for males and females. The life table depicts the mortality experience of a hypothetical group of newborn babies throughout their entire lifetime. It is based on the assumption that this group is subject to the age-specific mortality rates of the reference period. Typically this hypothetical group is 100,000 in size.

46 To construct a life table, data on population, deaths and births are needed. Mortality rates are smoothed to avoid fluctuations in the data. Apart from mortality rates themselves (qx), all other functions of the life table are derived from qx. The life tables presented in this publication contain four columns of interrelated information. These functions are:

- lx—the number of persons surviving to exact age x;
- qx—the proportion of persons dying between exact age x and exact age x+1. It is the mortality rate, from which other functions of the life table are derived;
- Lx—the number of person years lived within the age interval x to x+1; and
- ex—life expectancy at exact age x.

Life tables based on assumed improvements in mortality

47 Life tables based on assumed improvements in mortality are produced by the ABS using assumptions on future life expectancy at birth, based on recent trends in life expectancy. Mortality rates derived from these life tables are used as inputs to ABS population projections. For further information see *Population Projections, Australia, 2006 to 2101* (cat. no. 3222.0).

Australian life tables

48 The 2008–2010 life tables differ from those published prior to the 1995 edition of this publication in a number of important respects. First, they are based on three years of death registrations (by month of occurrence), and estimated resident population data (by quarter of occurrence). This is designed to reduce the impact of year-to-year statistical variations, particularly at younger ages where there are small numbers of deaths, and at very old ages where the population at risk is small. Second, the deaths and population data are based on Australian residents who are physically present in Australia over the three-year period; i.e. Australian residents temporarily overseas are excluded, as are deaths in Australia of overseas visitors. Third, they have been actuarially graduated on the same principles which are used for the quinquennial Australian life tables prepared by the Australian Government Actuary (AGA). Due to fine level adjustments made by the ABS to mortality rates, the ABS life tables may differ slightly to those produced by the AGA (*http://www.aga.gov.au/publications/#life_tables*).

State and territory life tables

49 Life tables for the states and territories are produced on the same principles as the Australian life tables with the exception of the crude m(x) rate. Crude m(x) rates are graduated using the Australian life table through the application of the Lidstone transformation. This overcomes problems associated with excessive noise in the single year of age rates. In addition, some hand-polishing and suppression of outliers is often required to achieve reasonable mortality curves with satisfactory goodness-of-fit statistics.

50 For the years 1994–1996 to 1999–2001, state and territory life tables are available in the Demography (cat. nos. 3311.1–3311.8) set of publications. State and territory life tables for the period 2000–2002 are available on request. State and territory life tables for the period 2001–2003 and onwards are published in *Life Tables* (cat. nos. 3302.1.55.001–3302.8.55.001).

Statistical Division life tables

51 Life expectancy at birth for Statistical Divisions have been calculated with reference to state and territory life tables, using Brass' Logit System. Small area life tables are based on age-specific death rates for each area, some of which may be zero where no deaths are recorded at these ages. Brass' Logit technique enables the calculation of smooth abridged life tables for regions which have defective age-specific death rates, by adjusting them with reference to a standard life table. The technique does not alter the overall level of mortality, but the age-specific functions of the life table are smoothed.

52 The Brass' Logit technique essentially compares mortality between the regional and standard life tables across ages, then a line of best fit is calculated to describe that relationship by age. The line of best fit is then used in conjunction with the standard life table to determine death rates for the small area life table. For a more detailed description of Brass' Logit System, refer to Brass (1975) Methods for Estimating Fertility and Mortality from Limited and Defective data.

CAUSES OF DEATH

53 Causes of death information is published under the 3303.0 product family. For more information see *Causes of Death, Australia: Doctor Certified Deaths, Summary Tables, 2010* (cat. no. 3303.0.55.001) scheduled for release on 29 November 2011, and *Causes of Death, Australia, 2010* (cat. no. 3303.0) scheduled for release in March 2012.

CONFIDENTIALITY

54 The *Census and Statistics Act 1905* provides the authority for the ABS to collect statistical information, and requires that statistical output shall not be published or disseminated in a manner that is likely to enable the identification of a particular person or organisation. This requirement means that the ABS must take care and make assurances that any statistical information about individual respondents cannot be derived from published data.

55 Where necessary, tables in this publication have had small values suppressed or randomised to protect confidentiality. As a result, sums of components may not add exactly to totals.

ROUNDING

56 Calculations as shown in the commentary sections of this publication are based on unrounded figures. Calculations using rounded figures may differ from those published. Where figures have been rounded in tables, discrepancies may occur between sums of component item and totals.

ACKNOWLEDGEMENTS

57 The ABS' publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. The efforts of Registries of Births, Deaths and Marriages to improve the data quality, coverage and timeliness of death registration information, processes and systems are noted and valued by the ABS. Their continued cooperation is very much appreciated; without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the *Census and Statistics Act 1905*.

RELATED PRODUCTS

58 Other ABS products which may be of interest to users include:

- *ABS Directions in Aboriginal and Torres Strait Islander Statistics, Jun 2007* (cat. no. 4700.0)
- *Australian Demographic Statistics* (cat. no. 3101.0)
- *Australian Demographic Trends* (cat. no. 3102.0)
- *Australian Historical Population Statistics* (cat.no. 3105.0.65.001)
- *Australian Social Trends* (cat. no. 4102.0)
- *Australian Standard Geographical Classification (ASGC)* (cat. no. 1216.0)
- *Australian Statistical Geography Standard (ASGS): Volume 1 - Main Structure and Greater Capital City Statistical Areas, July 2011* (cat.no. 1270.0.55.001)
- *Births, Australia* (cat. no. 3301.0)
- *Causes of Death, Australia* (cat. no. 3303.0)
- *Causes of Death, Australia: Doctor Certified Deaths, Summary Tables* (cat. no. 3303.0.55.001)
- *Census Data Enhancement Project: An Update, Oct 2010* (cat. no. 2062.0)
- *Discussion Paper: Assessment of Methods for Developing Life Tables for Aboriginal and Torres Strait Islander Australians, 2006* (cat. no. 3302.0.55.002)
- *Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 1991 to 2021* (cat. no. 3238.0)
- *Experimental Estimates of Aboriginal and Torres Strait Islander Australians, Jun 2006* (cat. no. 3238.0.55.001)
- *Experimental Life Tables for Aboriginal and Torres Strait Islander Australians, 2005–2007* (cat. no. 3302.0.55.003)
- *Information Paper: ABS Causes of Death Statistics: Concepts, Sources, and Methods* (cat. no. 3317.0.55.002)
- *Information Paper: Census Data Enhancement—Indigenous Mortality Quality Study, 2006–07* (cat. no. 4723.0)
- *Life Tables* (cat. nos. 3302.0.55.001–3302.8.55.001)
- *Perinatal Deaths, Australia* (cat. no. 3304.0)
- *Population Estimates: Concepts, Sources and Methods, 2009* (cat. no. 3228.0.55.001)
- *Population Projections, Australia, 2006 to 2101* (cat. no. 3222.0)
- *Standard Australian Classification of Countries* (SACC) (cat. no. 1269.0)
- *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples* (cat. no. 4704.0)

59 ABS products and publications are available free of charge from the ABS website <http://www.abs.gov.au>. Click on Statistics to gain access to the full range of ABS statistical and reference information.

ADDITIONAL STATISTICS AVAILABLE

60 More detailed death and mortality statistics can be obtained from data cubes (in Microsoft excel format) available for download from the ABS website in *Deaths, Australia, 2010* (cat. no. 3302.0):

- Table 1: Deaths, Summary, States and territories, 2000 to 2010
- Table 2: Death rates, Summary, States and territories, 2000 to 2010
- Table 3: Life expectancy, Selected ages, States and territories, 2000 to 2010
- Table 4: Deaths, Summary, Statistical Divisions, 2005 to 2010
- Table 5: Deaths, Summary, Statistical Local Areas, 2005 to 2010
- Table 6: Deaths, Summary, Local Government Areas, 2005 to 2010
- Table 7: Deaths, Summary, Remoteness Areas, 2005 to 2010
- Table 8: Deaths, Age at death, Marital status, Australia, 2010
- Table 9: Deaths, Country of birth, Australia, 2010
- Table 10: Infant deaths, Age at death, States and territories, 2000 to 2010
- Table 11: Deaths, Year of occurrence, Age at death, States and territories, 2000 to 2010
- Table 12: Median age at death, Year of occurrence, States and territories, 2000 to 2010
- Table 13: Deaths, Year and month of occurrence, States and territories, 2000 to 2010
- Table 14: Infant deaths, Year of occurrence, Age at death, Australia, 2000 to 2010
- Table 15: Infant deaths, Year and month of occurrence, States and territories, 2008 to 2010
- Table 16: Deaths, Indigenous status, States and territories, 1991 to 2010
- Table 17: Median age at death, Indigenous status, Selected states and territories, 1991 to 2010
- Table 18: Infant mortality rates, Indigenous status, Selected states and territories, 1991 to 2010
- Table 19: Age-specific death rates, Indigenous status, Selected states and territories, 2006–2010

61 For additional articles on deaths (including causes of death) and mortality published by the ABS, see *Appendix: Feature Articles List*.

62 As well as the statistics included in this and related publications, the ABS may have other relevant data available on request. Inquiries should be made to the National Information and Referral Service on 1300 135 070.

63 The ABS also issues a daily Release Advice on the website which details the products to be released in the week ahead.

APPENDIX 1 PRINCIPLES ON THE USE OF DIRECT AGE-STANDARDISATION

PRINCIPLES ON THE USE OF DIRECT AGE-STANDARDISATION IN ADMINISTRATIVE DATA COLLECTIONS

The Australian Bureau of Statistics (ABS) hosted a workshop of key stakeholders on age-standardisation on 19 April 2011. The aim of the workshop was to discuss the best method of age-standardisation (direct or indirect) and to produce a clear set of guidelines specifically for the analysis and reporting of COAG "Closing the Gap" indicators. The workshop was attended by representatives from the ABS, Australian Institute of Health and Welfare (AIHW), Office of Aboriginal and Torres Strait Islander Health at the Department of Health and Ageing, COAG Reform Council, Productivity Commission and the Department of Families, Housing, Community Services and Indigenous Affairs. Workshop participants agreed that the direct method is the most preferred method of age-standardisation as it allows for valid comparisons of mortality rates between different study populations and across time.

However, there were a number of concerns about the direct method, in particular small cell sizes, that required consideration before adopting the method. A small team led by the AIHW, working closely with the ABS, developed a paper outlining a set of principles for using the direct age-standardisation method. For more information, refer to *Australian Institute of Health and Welfare 2011. Principles on the use of direct age-standardisation in administrative data collections: for measuring the gap between Indigenous and non-Indigenous Australians.* Cat. no. CSI 12. Canberra: AIHW. The principles included in this appendix are taken from the above paper published by the AIHW.

ABS has applied these principles to data cube *Table 9: Deaths, Country of Birth, Australia, 2010,* available for download from the ABS website. The principles will be applied to sub-state data, where appropriate, in future releases of this publication.

The guiding principles to be followed when undertaking the direct method of age-standardisation are summarised below.

Overarching principle

Before undertaking age-standardisation, analysts must investigate the data being used to understand the age-specific distributions of the populations being compared, and any limitations that may impact on the results.

Principle 1

The standard population used should be the Australian Estimated Resident Population as at 30 June 2001 from the 2001 Census until population estimates from the 2011 Census become available.

The population used as the denominator for the calculation of Aboriginal and Torres Strait Islander age-standardised rates should be series B of *Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 1991 to 2021* (cat. no. 3238.0) based on the 2006 Census until population estimates from the 2011 Census become available.

Principle 2

If the denominator is less than 30 in any one age group, then do not attempt to produce age-standardised rates.

Age groups may be collapsed to obtain a denominator of 30 or more (provided that this is in accordance with Principles 3 and 4).

Principle 3

If the total number of events in one population, e.g. deaths in the Aboriginal and Torres Strait Islander population, is less than 20, then do not attempt to produce age-standardised rates.

Combining several years of data, or aggregating jurisdictions should be considered to obtain a total of 20 or more events.

If this does not meet the purpose (i.e. data are required for time series or jurisdictional comparisons), or does not result in greater than 20 events, then other measures and contextual information should be reported instead of age-standardised rates which could include total number of events, crude rates, age-specific rates, age-specific rate ratios and median age at the time of the event.

Principle 4

Age-standardised rates should be calculated using the five year age groupings of 0–4 to 75+ (provided Principles 2 and 3 for denominator and numerator are met).

10 year age groups may be used to overcome small numbers (20 year age groups are too wide and should not be used).

Principle 5

Contextual information (most importantly age-specific rates and ratios) should be provided in addition to age-standardised rates when:

- the age-standardised rates and rate ratios lie largely outside the range of the age-specific rates and rate ratios
- the pattern of age-specific rates of the Aboriginal and Torres Strait Islander and non-Indigenous populations differ substantially (e.g. deaths from a certain cause concentrate on younger ages for the Aboriginal and Torres Strait Islander population while for non-Indigenous population they may occur at older ages)
- age-specific death rates depart from the assumption of a uniform increase in death with age (e.g. injury which peaks in the young adult to middle ages and certain cancers amenable to treatment for some age groups).

Principle 6

For conditions restricted to a specific age group (e.g. conditions originating in the perinatal period, Sudden Infant Death Syndrome), it is recommended to report the age-specific rate for the age group of interest instead of the age-standardised rate.

Notes regarding application of these principles

Analysts should apply these principles keeping in mind that a consistent time series will need to be maintained and valid comparisons ensured. The guidelines should not result in a widely different methodology being used for data being compared across time or across jurisdictions. Analysts should make decisions regarding the application of these principles based on an assessment of the data from the outset of their analyses.

These principles may need to be reviewed at some point in the future in order to take into account any changes, for example, in Aboriginal and Torres Strait Islander mortality and population estimates. A sensible time for such a review would be to coincide with a change of standard population (i.e. every 10 years).

The impact of a change in standard population on the resulting age-standardised rates will need to be assessed by the ABS and AIHW as soon as practical following the release of the 2011 Census population estimates.

APPENDIX 2 ASGS AND THE AVAILABILITY OF SUB-STATE DEATH STATISTICS

THE AUSTRALIAN STATISTICAL GEOGRAPHY STANDARD (ASGS)

From July 2011, the ABS will be replacing the nation's official statistical geography, the Australian Standard Geographical Classification (ASGC) with the new Australian Statistical Geography Standard (ASGS). The ASGS will define more stable, consistent and meaningful areas than the ASGC and will become the essential reference for understanding and interpreting the geographical context of ABS statistics. Current ASGC regions such as the Census Collection Districts (CCDs), Statistical Local Areas (SLAs) and Statistical Divisions (SDs) will be replaced by the new Statistical Areas Levels 1 to 4 (SA1 - SA4). For more information about the ASGS, including boundary maps, labels and codes, see *Australian Statistical Geography Standard (ASGS): Volume 1 - Main Structure and Greater Capital City Statistical Areas, July 2011* (cat. no. 1270.0.55.001).

DEATH STATISTICS UNDER THE ASGS

From 2011 onwards, the SA2 will be the base spatial unit used to prepare and disseminate sub-state death statistics.

The first set of death statistics under the ASGS will be prepared for 2011 data and released in November 2012 in *Deaths, Australia* (cat. no. 3302.0) or a separate release combining sub-state birth and death statistics. This release will contain a time series of death statistics for the new geography, as well as death statistics based on the old geography. Sub-state death statistics for 2012 and onwards will only be prepared and released according to the ASGS.

As LGA population estimates are regarded as a crucial ABS output, LGA death statistics will continue to be prepared post 2011. The boundaries on which these statistics will be prepared on will be updated each year, in line with official gazetted boundaries.

SA2 death statistics will be broken down into SA1s, which can then be aggregated to form ABS structures such as Indigenous Regions and Remoteness Areas which make up part of the ASGS. Selected statistics based on these regions will be released on the ABS website, or available on request.

The change in geographic classification means there will be an unavoidable break in time series. To assist users with this break in time series, the ABS plans to prepare historical death statistics under the new geography. The length of these historical time series will depend on the geographic level or the type of death statistic. Time series will be released as part of the first releases of ASGS death statistics in November 2012.

A set of correspondences (concordances) will also be available to assist users in converting data from one geography to another. For a list of correspondences that the ABS intends to release please see the Frequently Asked Questions link on the ABS Geography Portal; http://www.abs.gov.au/websitedbs/D3310114.nsf/home/Frequently+Asked+Questions.

The ABS also released *Information Paper: Population Estimates under Australia's New Statistical Geography, August 2011* (cat. no. 3219.0.55.001) on 26 August 2011, which includes more information about the future of population estimates, the length of historical time series and the methodology used to prepare population estimates under the ASGS.

TECHNICAL NOTE

REGISTRATION OF OUTSTANDING DEATHS, QUEENSLAND, 2010

INTRODUCTION

1 In November 2010, the Queensland Registrar of Births, Deaths and Marriages advised the ABS of an outstanding deaths registration initiative undertaken by the Registry. This initiative resulted in the November 2010 registration of 374 previously unregistered deaths which occurred between 1992 and 2006 (including a few for which a date of death was unknown). Of these, around three-quarters (284) were deaths of Aboriginal and Torres Strait Islander Australians.

2 Data in this publication are presented on a year of registration basis. Similarly, mortality indicators presented in various Council of Australian Government (COAG) reports, including the National Indigenous Reform Agreement (NIRA), the National Healthcare Agreement (NHA), the Aboriginal and Torres Strait Islander Health Performance Framework and Overcoming Indigenous Disadvantage reports were compiled using deaths data on a year of registration basis. If this practice is followed for reporting data for the 2010 reference year, mortality indicators for Queensland and any aggregates including Queensland will be overstated and prevent meaningful comparisons over time.

3 This Technical Note summarises the effects of these extra death registrations on selected mortality indicators. A method is outlined to adjust death registrations for Queensland for 2010 that aims to minimise the impact on mortality indicators used in various government reports. This is followed by analysis comparing mortality rates by Indigenous status based on deaths data by: (1) year of registration; (2) year of occurrence and; (3) 'adjusted registration'.

DEATHS BY YEAR OF REGISTRATION AND YEAR OF OCCURRENCE

4 The following table presents deaths of Aboriginal and Torres Strait Islanders by year of registration and year of occurrence separately for those deaths registered up to and including 31 December 2010. The number of deaths by year of occurrence in this series are subject to change, as deaths that occurred up to and including 31 December 2010 but which have not yet been registered, are not included. See paragraphs 26 and 27 of the Explanatory Notes for more information.

5 While the interval between the occurrence and registration of deaths is often longer among Aboriginal and Torres Strait Islander Australians than among the non-Indigenous population, there is normally little difference between the number of deaths registered in a given year and the number of deaths that occurred in the same year for Aboriginal and Torres Strait Islander Australians. This is because for each year, the number of deaths that are not registered in the year that they occur are compensated by deaths that occurred in previous years but were subsequently registered. The table below illustrates that if data are routinely reported on a year of occurrence basis, deaths data for the latest year (and the year prior to the latest year) will be underestimated.

DEATHS BY YEAR OF REGISTRATION AND YEAR OF OCCURRENCE *continued*

ABORIGINAL AND TORRES STRAIT ISLANDER DEATHS(a), States and territories(b)(c)—1994 to 2010

	NSW	*Vic.*	*Qld*(d)	*SA*	*WA*(e)	*Tas.*	*NT*	*ACT*	*Aust.*(f)
YEAR OF REGISTRATION									
1994	207	50	np	123	377	np	380	10	1 153
1995	224	50	np	121	384	np	387	9	1 182
1996	177	49	258	118	370	np	328	np	1 306
1997	88	93	531	132	351	5	458	4	1 662
1998	462	123	593	127	378	13	415	3	2 114
1999	435	130	529	116	350	11	399	6	1 976
2000	473	108	535	144	407	np	450	np	2 127
2001	481	93	565	125	345	np	429	np	2 072
2002	516	64	590	107	371	20	462	4	2 136
2003	485	82	569	137	338	23	435	9	2 079
2004	490	54	579	131	400	20	449	10	2 136
2005	507	71	519	142	406	28	454	11	2 141
2006	530	111	584	124	443	20	452	14	2 279
2007	601	95	594	138	502	24	461	6	2 421
2008	559	97	562	141	605	24	467	16	2 472
2009	591	106	632	160	444	30	431	10	2 405
2010	622	117	948	147	436	37	447	13	2 767
YEAR OF OCCURRENCE(g)									
1994	197	52	np	121	380	np	401	10	1 175
1995	234	49	np	117	371	np	370	10	1 180
1996	166	67	350	122	351	np	383	np	1 444
1997	98	106	567	137	382	5	408	3	1 706
1998	465	108	595	129	389	13	414	3	2 116
1999	433	105	540	117	347	12	438	7	1 999
2000	480	115	619	140	384	np	428	np	2 177
2001	487	81	581	122	368	np	430	np	2 100
2002	508	64	613	108	384	22	470	5	2 176
2003	494	83	594	144	323	22	418	12	2 092
2004	481	54	629	134	391	19	437	7	2 154
2005	507	80	541	140	416	32	493	12	2 224
2006	529	117	587	123	466	16	453	12	2 304
2007	599	94	583	138	513	25	461	8	2 421
2008	559	93	552	143	580	23	483	14	2 448
2009	594	105	623	145	419	33	426	12	2 358
2010	593	101	574	142	355	34	340	11	2 150

(a) From 2007 onwards, Indigenous status for deaths registered in Victoria, South Australia, Western Australia, Tasmania, the Northern Territory and the Australian Capital Territory is sourced from both the Death Registration Form and Medical Certificate of Cause of Death.

(b) State or territory of usual residence.

(c) Due to differing levels of recording Indigenous status by the states and territories and over time, care should be taken in interpreting change in the number of deaths. As a result, data for Australia should not be analysed as a time series.

(d) Queensland began to register Aboriginal and Torres Strait Islander deaths as such in 1996. Care should be taken when interpreting Aboriginal and Torres Strait Islander deaths data for Queensland for 2010 (as per this Technical Note).

(e) ABS are currently investigating the volatility of Aboriginal and Torres Strait Islander deaths in WA in recent years. Until this investigation is finalised, ABS advises caution be used when analysing Aboriginal and Torres Strait Islander deaths data for 2007, 2008 and 2009.

(f) Includes Other Territories.

(g) Includes deaths registered up to and including 31 December 2010. The number of deaths presented on a year of occurrence basis are subject to change, as deaths that occurred prior to 31 December 2010 but have not yet been registered are registered in subsequent years. See paragraphs 26 and 27 of the Explanatory Notes for more information.

DEATH REGISTRATIONS BY YEAR OF OCCURRENCE

6 There were 27,289 deaths registered in 2010 of usual residents of Queensland. All occurred since 1991. Of these deaths, 381 occurred between 1992 and 2006, and a majority of these were registered through the initiative to register outstanding deaths. Of the Aboriginal and Torres Strait Islander deaths registered in Queensland in 2010, 30% (289) occurred between 1992 and 2006. By contrast, less than 1% (31) of non-Indigenous deaths registered in 2010 occurred between 1992 and 2006.

DEATH REGISTRATIONS, Year of occurrence and Indigenous status—Queensland(a)—2010

Year of occurrence	*Aboriginal and Torres Strait Islander* persons	*Non-Indigenous* persons	*Total*(b) persons
1991 and earlier	—	—	—
1992–2006(c)	289	31	381
2007	9	3	13
2008	12	5	18
2009	64	1 220	1 360
2010	574	24 389	25 512
Total(d)	**948**	**25 652**	**27 289**

— nil or rounded to zero (including null cells)
(a) Deaths of usual residents of Queensland.
(b) Includes deaths for which Indigenous status was not stated.
(c) A majority of the deaths that occurred between 1992 and 2006 were registered as part of the initiative to register outstanding deaths.
(d) Includes deaths for which year of occurrence was not stated.

ADJUSTMENT OF DEATH REGISTRATIONS

7 The ABS has discussed different methods of adjustment of Queensland death registrations data for 2010 with key stakeholders who are involved in analysis and reporting of COAG 'Closing the Gap' mortality indicators. Following analysis of several methods of adjustment, a paper was presented and discussed at a National Indigenous Reform Agreement Performance Indicators Management Group (NIRAPIMG) meeting on 18 October 2011. Following further analysis, a decision was made by the ABS and key stakeholders to use an adjustment method that added together deaths registered in 2010 for usual residents of Queensland which occurred in 2007, 2008, 2009 and 2010. The method is simple to describe, apply and interpret.

8 Deaths data for 2010 for Aboriginal and Torres Strait Islander, non-Indigenous and total populations have been adjusted. The 'adjusted registrations' for Queensland for 2010 constitute 659 Aboriginal and Torres Strait Islander deaths, 25,621 non-Indigenous deaths and 26,908 total population deaths (which includes deaths for which Indigenous status was not stated).

IMPACT ON AGE-SPECIFIC DEATH RATES

9 The following table presents age-specific death rates (ASDRs) based on year of registration, adjusted registration and year of occurrence for Queensland. In almost all cases, ASDRs based on adjusted registrations fall between rates based on year of occurrence and rates based on year of registration.

AGE-SPECIFIC DEATH RATES, Indigenous status —Queensland—2006–2010

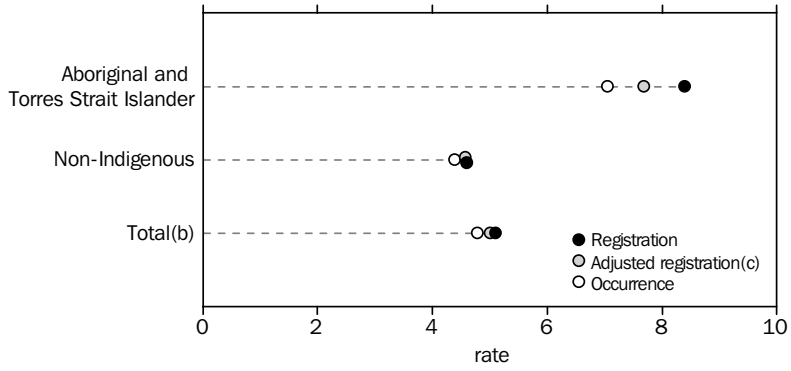
	REGISTRATION			ADJUSTED REGISTRATION(a)			OCCURRENCE		
	Aboriginal and Torres Strait Islander	*Non-Indigenous*	*Total*(b)	*Aboriginal and Torres Strait Islander*	*Non-Indigenous*	*Total*(b)	*Aboriginal and Torres Strait Islander*	*Non-Indigenous*	*Total*(b)
	rate	rate	rate	rate	rate	rate	rate	rate	rate
0(c)	8.8	4.6	5.1	8.3	4.6	5.0	8.0	4.5	4.9
1–4	2.8	1.1	1.3	2.5	1.1	1.2	2.3	1.1	1.2
0–4	12.1	5.9	6.5	11.2	5.8	6.4	10.8	5.7	6.3
5–9	1.1	0.5	0.6	1.0	0.5	0.6	1.1	0.5	0.6
10–14	0.8	0.5	0.5	0.8	0.5	0.5	0.7	0.5	0.5
15–19	3.8	1.8	2.0	3.2	1.8	1.9	3.2	1.7	1.9
20–24	6.6	2.4	2.7	6.0	2.4	2.7	5.7	2.4	2.6
25–29	8.3	2.7	3.0	7.7	2.7	3.0	7.1	2.7	2.9
30–34	11.1	3.4	3.8	9.7	3.4	3.7	9.2	3.3	3.6
35–39	17.0	4.1	4.8	15.9	4.1	4.7	15.0	4.0	4.6
40–44	24.3	5.6	6.4	22.6	5.6	6.3	21.4	5.5	6.2
45–49	32.6	8.5	9.4	29.6	8.5	9.3	28.6	8.4	9.2
50–54	47.4	13.1	14.2	43.0	13.1	14.1	41.1	12.9	13.8
55–59	70.0	20.0	21.3	64.5	20.0	21.2	61.8	19.6	20.8
60–64	93.9	31.8	33.4	86.8	31.8	33.3	82.1	31.3	32.7
65–69	154.4	54.3	56.6	140.5	54.3	56.5	136.7	53.4	55.5
70–74	244.5	91.2	94.6	218.3	91.2	94.3	211.4	90.1	93.1
75 and over	471.2	333.6	340.6	428.9	333.6	340.3	422.4	329.1	335.7
Total(d)	**21.8**	**30.1**	**30.5**	**19.9**	**30.1**	**30.4**	**19.1**	**29.7**	**29.9**

(a) Deaths by year of registration used for 2006 to 2009, and adjusted registrations for 2010.
(b) Includes deaths for which Indigenous status was not stated.
(c) Infant deaths per 1,000 live births. Births by year of registration are used as the denominator.
(d) Includes deaths for which age at death was not stated.

IMPACT ON INFANT MORTALITY RATES

10 In the following graph, infant mortality rates (IMRs) for Queensland for the period 2008–2010 are highest for deaths on a year of registration basis and lowest for deaths on a year of occurrence basis (due to time lags in registrations of both deaths and births). IMRs based on adjusted registration fall between the IMRs based on year of registration and year of occurrence data. The difference in rates based on year of registration, year of occurrence or adjusted registration data are greater for the Aboriginal and Torres Strait Islander population than for the non-Indigenous or the total population. This is shown by the ratio of adjusted registration IMRs to year of registration IMRs for Aboriginal and Torres Strait Islander Australians of 0.92 compared with 0.99 for non-Indigenous Australians and 0.98 for the total population.

INFANT MORTALITY RATES(a)(b), Indigenous status—Queensland—2008–2010



(a) Infant deaths per 1,000 live births. Births by year of registration used as the denominator.
(b) Includes deaths for which Indigenous status was not stated.
(c) Deaths by year of registration used for 2008 and 2009, and adjusted registrations for 2010.

IMPACT ON INFANT MORTALITY RATES *continued*

11 The following table presents IMRs for Queensland and aggregated New South Wales, Queensland, South Australia and the Northern Territory for 2008–2010. The patterns of IMRs are similar for aggregated New South Wales, Queensland, South Australia and the Northern Territory data. However, the effect of using adjusted registration data instead of year of registration or year of occurrence data for IMRs is weaker.

INFANT MORTALITY RATES(a), Indigenous status—2008–2010

	Aboriginal and Torres Strait Islander	*Non-Indigenous*	*Total*(b)
	rate	rate	rate
QUEENSLAND			
Registration	8.4	4.6	5.1
Adjusted registration(c)	7.7	4.6	5.0
Occurrence	7.0	4.4	4.8
TOTAL(d)			
Registration	7.4	4.2	4.5
Adjusted registration(c)	7.1	4.2	4.5
Occurrence	6.6	4.1	4.3

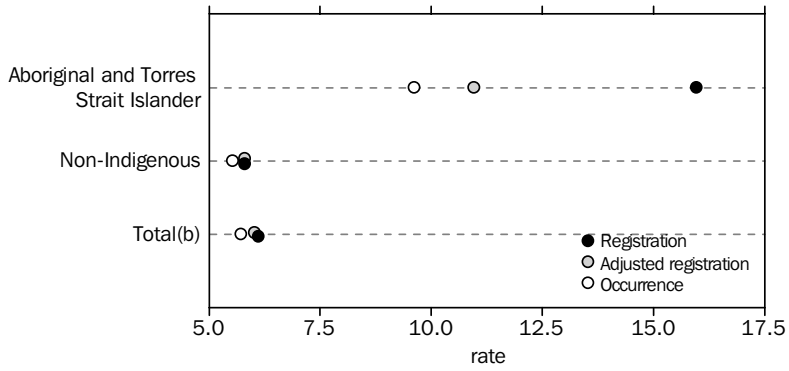
(a) Infant deaths per 1,000 live births. Births by year of registration used as the denominator.
(b) Includes deaths for which Indigenous status was not stated.
(c) Deaths by year of registration used for 2008 and 2009, and adjusted registrations for 2010.
(d) Data for NSW, Qld, SA and NT combined, based on state and territory of usual residence. Victoria, Tasmania and the ACT are excluded due to small numbers of registered Aboriginal and Torres Strait Islander deaths. WA data are excluded due to ongoing investigation into unusual fluctuations. See paragraph 36 of the Explanatory Notes.

IMPACT ON STANDARDISED DEATH RATES

12 The next graph presents standardised death rates (SDRs) using year of registration, year of occurrence and adjusted registration data for 2010. As with IMRs, SDRs are highest for year of registration data, lowest for year of occurrence data (due to registration lags) and SDRs based on adjusted registration data fall between those based on year of registration and those based on year of occurrence data. The difference in rates based on year of registration, year of occurrence or adjusted registration data are greater for the Aboriginal and Torres Strait Islander population than for the non-Indigenous or the total population. This is shown by the ratio of adjusted registration SDRs to year of registration SDRs for Aboriginal and Torres Strait Islander Australians of 0.68 compared with 1.00 for non-Indigenous Australians and 0.99 for the total population.

IMPACT ON STANDARDISED DEATH RATES *continued*

STANDARDISED DEATH RATES(a), Indigenous status—Queensland—2010



(a) Deaths per 1,000 standard population. Standardised death rates are calculated using the total persons in the Australian population at 30 June 2001 as the standard population.
(b) Includes deaths for which Indigenous status was not stated.

13 The following table presents SDRs for Queensland and aggregated New South Wales, Queensland, South Australia, Western Australia and the Northern Territory for 2010. In contrast to patterns for IMR, the SDR using adjusted registrations for the Aboriginal and Torres Strait Islander population is higher (11.3) for aggregated New South Wales, Queensland, South Australia, Western Australia and the Northern Territory than for Queensland (11.0). Whereas, in keeping with patterns for IMRs, the SDR for year of registration is lower (12.8) for aggregated New South Wales, Queensland, South Australia, Western Australia and the Northern Territory than for Queensland (16.0). In both geographic aggregates, SDRs for the non-Indigenous population are identical, and very similar for the total population.

STANDARDISED DEATH RATES(a), Indigenous status—2010

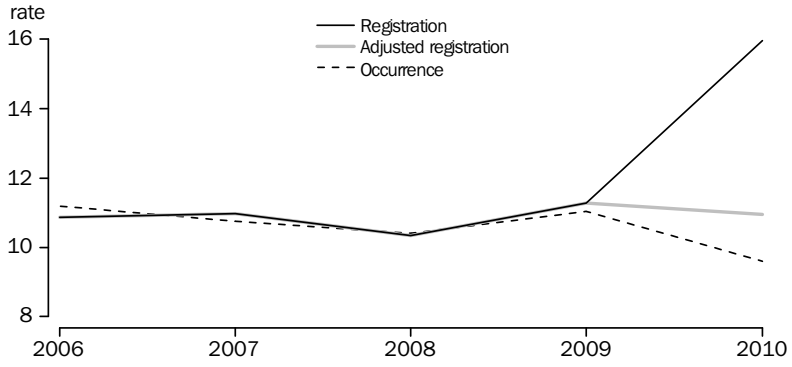
	Aboriginal and Torres Strait Islander	*Non-Indigenous*	*Total*(b)
	rate	rate	rate
QUEENSLAND			
Registration	16.0	5.8	6.1
Adjusted registration	11.0	5.8	6.0
Occurrence	9.6	5.5	5.7
TOTAL(c)			
Registration	12.8	5.8	6.0
Adjusted registration	11.3	5.8	6.0
Occurrence	10.0	5.5	5.7

(a) Deaths per 1,000 standard population. Standardised death rates are calculated using the total persons in the Australian population at 30 June 2001 as the standard population.
(b) Includes deaths for which Indigenous status was not stated.
(c) Data are for NSW, Qld, SA, WA, and NT combined, based on state or territory of usual residence. Victoria, Tasmania and the ACT are excluded due to small numbers of registered Aboriginal and Torres Strait Islander deaths.

IMPACT ON STANDARDISED DEATH RATES *continued*

14 The next graph shows the effects of the registration of outstanding deaths on standardised death rates (SDRs) for Aboriginal and Torres Strait Islander Australians in Queensland for the period 2006 to 2010. The inclusion of deaths from earlier years in the 2010 registrations produces an implausibly high SDR in 2010. Conversely, the 2010 year of occurrence based SDR is an underestimate due to a lag in registration of deaths in the year of occurrence (that is, deaths which occurred in 2010 but were not registered until 2011 or later years). Importantly, the adjusted registrations data for 2010 lead to an SDR for 2010 which is consistent with year of registration based SDRs for earlier years.

STANDARDISED DEATH RATES(a), Aboriginal and Torres Strait Islander Australians—Queensland—2006 to 2010



(a) Deaths per 1,000 standard population. Standardised death rates are calculated using the total persons in the Australian population at 30 June 2001 as the standard population.

CONCLUSION

15 More than three-quarters of deaths registered as part of the outstanding deaths initiative were deaths of Aboriginal and Torres Strait Islander Australians. This has impacted on mortality rates of Aboriginal and Torres Strait Islanders more than those of the non-Indigenous population. Using 2010 death registrations data for Queensland, and aggregates including Queensland, overstates mortality rates and prevents meaningful comparisons over time. Reporting using year of occurrence data is not an option since the latest year is understated due to registration lags (see paragraphs 26 and 27 of the Explanatory Notes for more information), and earlier years would be subject to annual and potentially ongoing revisions. Standardised death rates based on adjusted death registration data for Queensland for 2010 maintain a level trend with registrations data from earlier years. As a result, adjusted registration data for Queensland for 2010 are recommended for reporting mortality indicators over time.

16 In addition, the registration in 2011 or later years of any substantial number of additional outstanding deaths which occurred in earlier years may require further adjustments to compile mortality indicators for use in meaningful analysis of mortality trends over time.

GLOSSARY

Aboriginal and Torres Strait Islander death — The death of a person who is recorded as being an Aboriginal, Torres Strait Islander, or both on the Death Registration Form (DRF). From 2007, Indigenous status for deaths registered in South Australia, Western Australia, Tasmania, the Northern Territory and the Australian Capital Territory is also derived from the Medical Certificate of Cause of Death (MCCD).

Age-specific death rate — Age-specific death rates (ASDRs) are the number of deaths (occurred or registered) during the calendar year at a specified age per 1,000 of the estimated resident population of the same age at the mid-point of the year (30 June). Pro rata adjustment is made in respect of deaths for which the age of the deceased is not given.

Balance of state or territory — The aggregation of all Statistical Divisions (SD) within a state or territory other than its Capital City SD. See Major Statistical in *Australian Statistical Geographical Classification (ASGC)* (cat. no. 1216.0).

Country of birth — The classification of countries used is the Standard Australian Classification of Countries (SACC). For more detailed information refer to the *Standard Australian Classification of Countries (SACC)* (cat. no. 1269.0).

Crude death rate — The crude death rate (CDR) is the number of deaths registered during the calendar year per 1,000 estimated resident population at 30 June. For years prior to 1992, the crude death rate was based on the mean estimated resident population for the calendar year.

Death — Death is the permanent disappearance of all evidence of life after birth has taken place. The definition excludes all deaths prior to live birth. For the purposes of the ABS Death Registration collection, a death refers to any death which occurs in, or en route to Australia and is registered with a state or territory Registry of Births, Deaths and Marriages.

Estimated resident population (ERP) — The official measure of the population of Australia is based on the concept of residence. It refers to all people, regardless of nationality or citizenship, who usually live in Australia, with the exception of foreign diplomatic personnel and their families. It includes residents who are overseas for less than 12 months. It excludes overseas visitors who are in Australia for less than 12 months.

External territories — Australian external territories include Australian Antarctic Territory, Coral Sea Islands Territory, Norfolk Island, Territory of Ashmore and Cartier Islands, and Territory of Heard and McDonald Islands.

Indirect standardised death rate (ISDR) — See Standardised death rate (SDR).

Infant death — An infant death is the death of a live-born child who dies before reaching his/her first birthday.

Infant mortality rate (IMR) — The number of deaths of children under one year of age in a specified period per 1,000 live births in the same period.

Intercensal discrepancy — Intercensal discrepancy is the difference between two estimates at 30 June of a census year population, the first based on the latest census and the second arrived at by updating the 30 June estimate of the previous census year with intercensal components of population change which take account of information available from the latest census. It is caused by errors in the start and/or finish population estimates and/or in estimates of births, deaths or migration in the intervening period which cannot be attributed to a

Intercensal discrepancy *continued*

particular source. For further information see *Population Estimates: Concepts, Sources and Methods, 2009* (cat. no. 3228.0.55.001).

Life expectancy

Life expectancy refers to the average number of additional years a person of a given age and sex might expect to live if the age-specific death rates of the given period continued throughout his/her lifetime.

Life table

A life table is a tabular, numerical representation of mortality and survivorship of a cohort of births at each age of life. The conventional life table is based on the assumption that as the cohort passes through life it experiences mortality at each age in accordance with a predetermined pattern of mortality rates which do not change from year to year. The life table thus constitutes a hypothetical model of mortality, and even though it is usually based upon death rates from a real population during a particular period of time, it does not describe the real mortality which characterises a cohort as it ages.

Due to differences in mortality patterns between males and females at different ages, life tables are generally constructed separately for each sex.

Live birth

A live birth is the birth of a child who, after delivery, breathes or shows any other evidence of life such as a heartbeat.

Local Government Area (LGA)

LGA is a spatial unit which represents the whole geographical area of responsibility of an incorporated Local Government Council, an Aboriginal or Island Council in Queensland, or a Community Government Council (CGC) in the Northern Territory. An LGA consists of one or more SLAs. LGAs aggregate directly to form the incorporated areas of states/territories. The creation and delimitation of LGAs is the responsibility of the state and territory Governments. The number of LGAs, their names and their boundaries vary over time. Further information concerning LGAs is contained in *Australian Standard Geographical Classification (ASGC)* (cat. no. 1216.0).

Marital status

Two separate concepts are measured by the ABS. These are registered marital status and social marital status.

Registered marital status refers to formally registered marriages and divorces. Registered marital status is a person's relationship status in terms of whether he or she has, or has had, a registered marriage with another person. Accordingly, people are classified as either 'never married', 'married', 'widowed', or 'divorced'.

Social marital status is the relationship status of an individual with reference to another people who is usually resident in the household. A marriage exists when two people live together as husband and wife, or partners, regardless of whether the marriage is formalised through registration. Individuals are, therefore, regarded as married if they are in a de facto marriage, or if they are living with the person to whom they are registered as married. Under social marital status, a person is classified as either 'married' or 'not married' with further disaggregation of 'married' to distinguish 'registered married' from 'de facto married'.

Median value

For any distribution the median value (age, duration, interval) is that value which divides the relevant population into two equal parts, half falling below the value, and half exceeding it. Where the value for a particular record has not been stated, that record is excluded from the calculation.

Mortality

Death.

Natural increase

Excess of births over deaths.

Net overseas migration (NOM)

Net overseas migration is the net gain or loss of population through immigration to Australia and emigration from Australia. It is:

- based on an international traveller's duration of stay being in or out of Australia for 12 months or more;
- the difference between;

Net overseas migration (NOM) *continued*

- the number of incoming international travellers who stay in Australia for 12 months or more, who *are not* currently counted within the population, and are then added to the population (NOM arrivals); and
- the number of outgoing international travellers (Australian residents and long-term visitors to Australia) who leave Australia for 12 months or more, who *are* currently counted within the population, and are then subtracted from the population (NOM departures).

Under the current method for estimating final net overseas migration this term is based on a traveller's actual duration of stay or absence using the '12/16 month rule'. Preliminary NOM estimates are modelled on patterns of traveller behaviours observed in final NOM estimates for the same period one year earlier.

Other Territories

Following the 1992 amendments to the *Acts Interpretation Act* to include the Indian Ocean Territories of Christmas Island and the Cocos (Keeling) Islands as part of geographic Australia, another category at the state and territory level has been created, known as Other Territories. Other Territories include Jervis Bay Territory, previously included with the Australian Capital Territory, as well as Christmas Island and the Cocos (Keeling) Islands.

Population growth

For Australia, population growth is the sum of natural increase and net overseas migration. For states and territories, population growth also includes net interstate migration. After the census, intercensal population growth also includes an allowance for intercensal discrepancy.

Remoteness Area

Within the Australian Standard Geographical Classification (ASGC), the Remoteness classification comprises five categories, each of which identifies a (non-contiguous) region in Australia being a grouping of Collection Districts (CDs) sharing a particular degree of remoteness. The degrees of remoteness range from 'highly accessible' (i.e. major cities) to 'very remote'.

The degree of remoteness of each CD was determined using the Accessibility/Remoteness Index of Australia (ARIA). CDs have then been grouped into the appropriate category of Remoteness to form non-contiguous areas within each state.

For more information, refer to *Statistical Geography Volume 1: Australian Standard Geographical Classification (ASGC) 2006* (cat. no. 1216.0) and *Information Paper: ABS Views on Remoteness, 2001* (cat. no. 1244.0).

Sex ratio

The sex ratio relates to the number of males per 100 females.

Standardised death rate (SDR)

Standardised death rates (SDRs) enable the comparison of death rates between populations with different age structures by relating them to a standard population. The ABS standard populations relate to the years ending in 1 (e.g. 2001). The current standard population is all persons in the Australian population at 30 June 2001. SDRs are expressed per 1,000 or 100,000 persons. There are two methods of calculating standardised death rates:

- The direct method—this is used when the populations under study are large and the age-specific death rates are reliable. It is the overall death rate that would have prevailed in the standard population if it had experienced at each age the death rates of the population under study.
- The indirect method—this is used when the populations under study are small and the age-specific death rates are unreliable or not known. It is an adjustment to the crude death rate of the standard population to account for the variation between the actual number of deaths in the population under study and the number of deaths which would have occurred if the population under study had experienced the age-specific death rates of the standard population.

Wherever used, the definition adopted is indicated.

Standardised mortality ratio The ratio of the actual number of deaths in the population under study and the number of deaths which would have occurred if the population under study had experienced the age-specific death rates of the standard population (see also Standardised death rate, the indirect method).

State or territory of registration State or territory of registration refers to the state or territory in which the event was registered.

State or territory of usual residence State or territory of usual residence refers to the state or territory of usual residence of:
- the population (estimated resident population);
- the mother (birth collection);
- the deceased (death collection).

Statistical Division (SD) Statistical Divisions (SDs) consist of one or more Statistical Subdivisions (SSD). The divisions are designed to be relatively homogeneous regions characterised by identifiable social and economic units within the region, under the unifying influence of one or more major towns or cities. Further information concerning SDs is contained in *Australian Standard Geographic Classification (ASGC)* (cat. no. 1216.0).

Statistical Local Area (SLA) Statistical Local Areas (SLAs) are, in most cases, identical with, or have been formed from a division of, whole Local Government Areas (LGAs). In other cases, they represent unincorporated areas. In aggregate, SLAs cover the whole of a state or territory without gaps or overlaps. In some cases, legal LGAs overlap statistical subdivision boundaries and therefore comprise two or three SLAs (Part A, Part B and, if necessary, Part C). Further information concerning SDs is contained in *Australian Standard Geographic Classification (ASGC)* (cat. no. 1216.0).

Statistical Subdivision (SSD) In aggregate, Statistical Subdivisions (SSD) cover the whole of Australia without gaps or overlaps. They are defined as socially and economically homogeneous regions characterised by identifiable links between the inhabitants. In the non-urban areas an SSD is characterised by identifiable links between the economic units within the region, under the unifying influence of one or more major towns or cities. Further information concerning SSDs is contained in *Australian Standard Geographical Classification (ASGC)* (cat. no. 1216.0).

Usual residence Usual residence within Australia refers to that address at which the person has lived or intends to live for a total of six months or more in a given reference year.

Year of occurrence Data presented on year of occurrence basis relate to the date the death occurred.

Year of registration Data presented on year of registration basis relate to the date the death was registered.

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