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# Introduction

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*Australian Social Trends* draws on a wide range of data, sourced both from ABS and other agencies, to present a picture of Australian society. This publication aims to inform decision-making, research and discussion on social conditions in Australia. It covers social issues of current and ongoing concern, population groups of interest, and changes in these over time.

The selection of articles aims to address current and perennial social concerns and to provide answers to key social questions. Some topics are revisited as new data become available. The aim of this approach is for each report to remain responsive to contemporary concerns, while accumulating a more comprehensive picture of Australian social conditions over time. For this reason, articles often include cross references to other relevant articles in the current issue, and in previous issues. All articles published since 1994 are available from the Australian Social Trends page of the ABS web site: [www.abs.gov.au/socialtrends](http://www.abs.gov.au/socialtrends).

*Australian Social Trends* is structured according to the ABS Wellbeing Framework which identifies areas of social concern, population groups and transactions among people and entities within their social environments (see ABS [Measuring Wellbeing: Frameworks for Australian Social Statistics, 2001](#) – cat. no. 4160.0). The broad areas of social concern are:

- population
- family and community
- health
- education and training
- work
- economic resources
- housing
- crime and justice
- culture and leisure
- other areas - including environment, religion, and transport and communication.

*Australian Social Trends* is now issued on a quarterly basis, and in the course of a year the articles will cover a wide range of the areas of social concern.

The articles focus strongly on people and social concerns. Each article aims to tell a story, providing a sense of the social and historical context in which a particular topic is embedded, moving from the general to the specific, and using statistics to bring light to the issue. Articles aim to balance 'what' analysis (relating the relevant statistical facts surrounding the issue, e.g. number, characteristics, change over time, sex, age and other differences), with 'why' analysis (providing context and explanation by highlighting relevant social changes and events and the chronologies of these). For example, an article on work may examine current labour force participation, how the labour market has changed over time, how different groups of people are affected by social and economic conditions, and how these factors may be linked to observed employment trends.





# Life expectancy trends — Australia

Life expectancy at birth is one of the most widely used and internationally recognised indicators of population health. High life expectancy at birth indicates low levels of infant mortality, a safe environment in which to live, a good health care system, sufficient food, and the adoption of preventative health measures.

How long people live is of considerable social policy interest in light of the implications for population growth, projected Australian government spending on health, age-related pensions and aged care, and the workforce's ability to maintain current levels of economic growth.<sup>1</sup> This article examines the substantial increase in life expectancy in Australia over the past 125 years, some of the reasons for the increase, and some of the challenges posed by living longer.

## Life expectancy at birth

Since the late 1800s, life expectancy for Australian boys and girls has increased by over 30 years. During 1881–1890, the average life expectancy of a newborn boy was 47.2 years and that of a newborn girl 50.8 years. By 2007–2009, average life expectancy had risen to 79.3 years for newborn boys and 83.9 years for newborn girls.

Over the past 125 years there have been changes in what Australians have died of, and the age at which they have died. Up until 1932, infectious and parasitic diseases caused at least 10% of all deaths each year, with death rates from these diseases highest among the very young and very old.<sup>2</sup> Improvements in living conditions in the early 20th century, such as better water supplies, sewerage systems, food

## Data sources and definitions

Estimates of life expectancy presented in this article are from life tables produced by the ABS (and previously by the Australian Government Actuary). Life tables are created using ABS estimated resident population data and death registrations provided to the ABS by state and territory Registrars of Births, Deaths and Marriages. Other data have been sourced from the AIHW (Australian Institute of Health and Welfare) GRIM (General Record of Incidence of Mortality) books, the ABS Causes of Death collection, ABS health surveys, and United Nations' mortality projections.

*Life expectancy* is the average number of additional years of life a person of a particular age and sex could expect to live if the age-specific death rates of the reference year(s) prevailed throughout his or her lifetime.

The *infant mortality rate* is the number of deaths of children under one year of age in a specified period of time per 1,000 live births during the same period of time.

*Age-standardised death rates* enable the comparison of death rates between populations with differing age structures by relating them to a standard population. Death rates presented in this article are per 100,000 population standardised to the age structure of the Australian population in 2001.

quality and health education, led to overall lower death rates and longer life expectancy at all ages.<sup>3</sup>

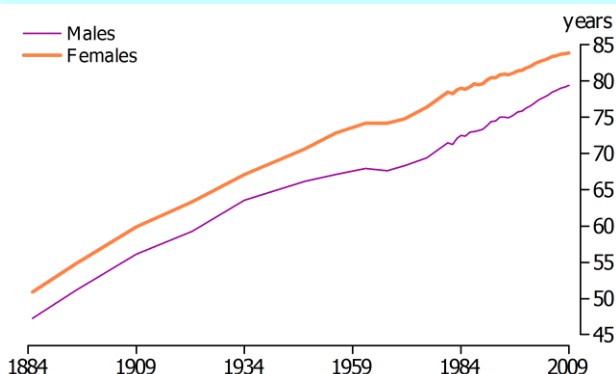
During the 20th century, degenerative diseases such as heart disease, stroke and cancer replaced infectious and parasitic diseases as the main cause of death of older people.<sup>4</sup> Not only had infection control measures improved in medical facilities, but public awareness of the value of preventative actions such as hand washing had grown. Increases in life expectancy at all ages in the second half of the 20th century have been attributed to improving social conditions and advances in medical technology such as mass immunisation and antibiotics.<sup>3</sup>

The past two decades have seen further increases in life expectancy. These increases have been partly due to lower infant mortality, fewer young people dying in motor vehicle accidents, and fewer older men dying from heart disease. The reduction in deaths from heart disease has been linked to medical advances and behavioural changes such as improvements in diet and less smoking.<sup>5</sup>

## ...gender differences

In Australia, as in most other countries, life expectancy at birth has generally been greater for girls than boys. Since the late 1800s,

## Life expectancy at birth

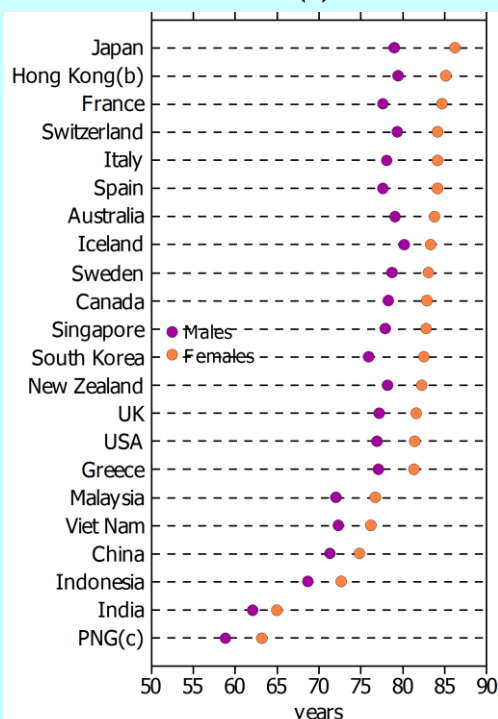


Source: ABS [Australian Historical Population Statistics 2008](#) (cat. no. 3105.0.65.001); ABS [Deaths, Australia, 2009](#) (cat. no. 3302.0)

## International comparisons

According to United Nations' estimates for 2005–10, Australian life expectancy is ranked among the highest in the world. Life expectancy at birth for Australian boys is exceeded only by boys in Iceland, Hong Kong (SAR of China) and Switzerland.<sup>6</sup> Life expectancy at birth for Australian girls is exceeded by girls in Japan, Hong Kong (SAR of China), France, Italy, Switzerland and Spain.

### Life expectancy at birth in selected countries – 2005-2010(a)



(a) Medium variant projection assuming normal mortality. Mortality is projected on the basis of models of change of life expectancy produced by the United Nations Population Division.

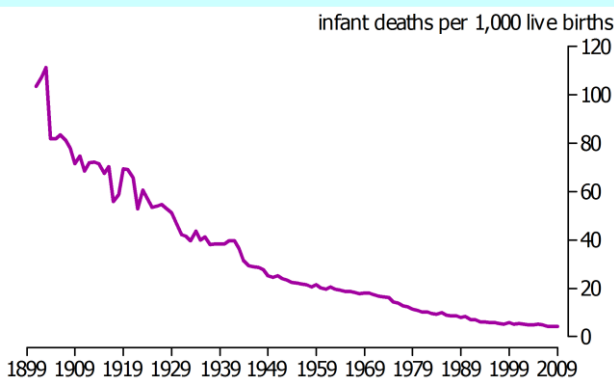
(b) Special Administrative Region of China.

(c) Papua New Guinea.

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat [World Population Prospects: The 2008 Revision Population Database <www.un.org>](http://www.un.org)

Australia's life expectancy gender gap has been widest (at about seven years) in the 1970s and early 1980s. The widening gap was largely due to a significant decline in heart disease, stroke and respiratory disease deaths among women,<sup>5</sup> combined with rising male death rates from circulatory disease and chronic bronchitis, and a greater increase in the lung cancer death rate among males than among females between 1950 and 1986.<sup>7</sup> Since then, the gender gap in life expectancy at birth has narrowed to around five years.<sup>5</sup> This narrowing has been attributed to a decline in motor vehicle accident deaths among young men, a decline in ischaemic heart disease among older men, and an increase in lung cancer among older women.<sup>7</sup>

## Infant mortality rate



Source: ABS [Australian Historical Population Statistics 2008](http://www.abs.gov.au) (cat. no. 3105.0.65.001); ABS [Deaths, Australia, 2009](http://www.abs.gov.au) (cat. no. 3302.0)

### ...infant mortality rate

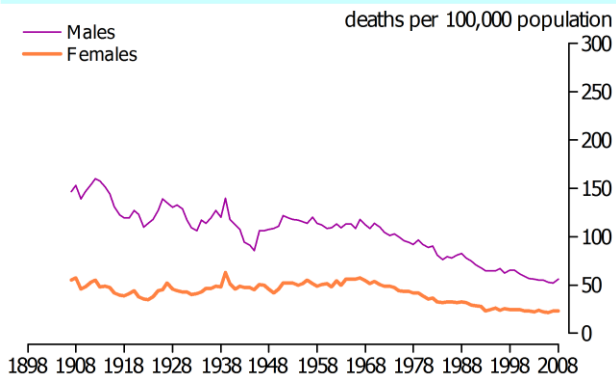
Life expectancy at birth is partly influenced by the proportion of babies who do not survive their first year of life. In the first few years of the 20th century (i.e. 1901 to 1903), over 10% of Australian babies died before their first birthday (equivalent to over 100 deaths per 1,000 live births). The infant mortality rate fell substantially during the first half of the 20th century, dropping below 25 deaths per 1,000 live births for the first time in 1950. The infant mortality rate has since continued to fall, albeit at a slower rate, to around 4 deaths per 1,000 live births in recent years. While Australia's infant mortality rate is not the lowest in the world, it is lower than many other OECD countries, including the United Kingdom, New Zealand, and the United States of America.<sup>8</sup>

### Life expectancy (additional years of life) for people at selected years of age

	Males				Females			
	at 0	at 25	at 45	at 65	at 0	at 25	at 45	at 65
1881-1890	47.2	37.1	23.0	11.1	50.8	39.7	25.6	12.3
1891-1900	51.1	38.9	24.0	11.3	54.8	41.7	26.7	12.8
1901-1910	55.2	40.6	24.8	11.3	58.8	43.4	27.6	12.9
1920-1922	59.2	42.7	26.0	12.0	63.3	45.7	29.0	13.6
1932-1934	63.5	44.4	26.9	12.4	67.1	47.2	29.7	14.2
1946-1948	66.1	45.0	26.8	12.3	70.6	48.7	30.5	14.4
1953-1955	67.1	45.5	27.2	12.3	72.8	50.2	31.4	15.0
1965-1967	67.6	45.4	27.0	12.2	74.2	51.2	32.3	15.7
1975-1977	69.6	46.9	28.3	13.1	76.6	53.1	34.0	17.1
1985-1987	72.7	49.5	30.8	14.6	79.2	55.4	36.1	18.6
1995-1997	75.6	51.8	33.1	16.1	81.3	57.1	37.7	19.8
2004-2006	78.7	54.7	35.7	18.3	83.5	59.2	39.7	21.5
2007-2009	79.3	55.2	36.3	18.7	83.9	59.5	40.1	21.8

Source: ABS [Australian Historical Population Statistics 2008](http://www.abs.gov.au) (cat. no. 3105.0.65.001); ABS [Deaths, Australia, 2009](http://www.abs.gov.au) (cat. no. 3302.0)

### Age-standardised death rate from all external causes of injury and poisoning(a)(b)(c)



- (a) Mainly accidents, intentional self-harm and assault.
- (b) Due to processing and classification changes, 1979-1996 rates have been upwardly adjusted by 6% to be comparable with 1997-2008 rates.
- (c) 2008 data are preliminary and subject to revision.

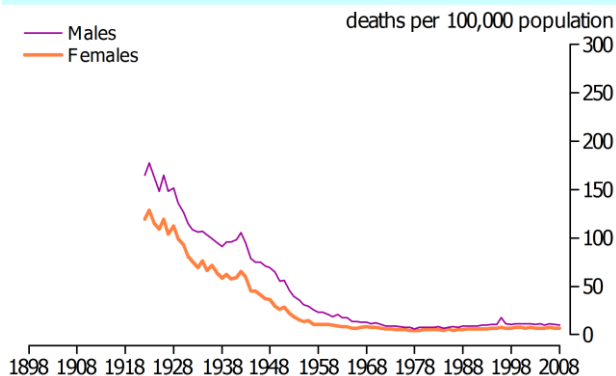
Source: AIHW [GRIM \(General Record of Incidence of Mortality\) Books](#); ABS [Causes of Death, Australia, 2008](#) (cat. no. 3303.0)

### Life expectancy at other ages

Increases in life expectancy at birth over the past 125 years are not due solely to declines in the infant mortality rate, as there have been increases in the average number of additional years of life that people at all ages could expect to live. While increases over time have been greater for younger people, there have still been substantial increases in life expectancy at older ages.

Early baby boomer generation boys and girls born between 1946 and 1948 could have expected to live for 66.1 and 70.6 years respectively. However, those who lived until their 24th birthday had a life expectancy of 70.6 and 76.5 years. Those who were still alive at 44 had a life expectancy of 76.9 and 82.0 years, while those who survived to turn 61 during 2007-2009 had a life expectancy of 83.0 and 86.3 years at that time.

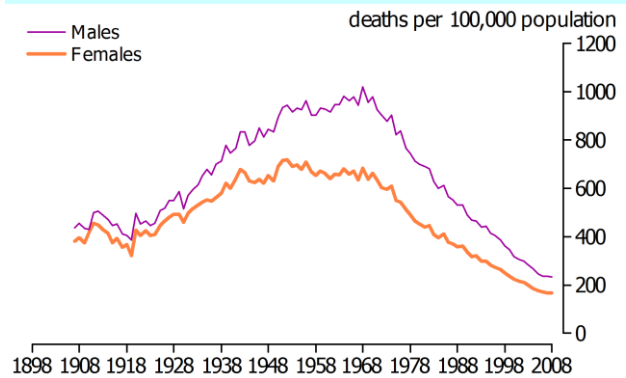
### Age-standardised death rate from all certain infectious and parasitic diseases(a)(b)



- (a) Due to processing and classification changes, 1979-1996 rates have been upwardly adjusted by 6% to be comparable with 1997-2008 rates.
- (b) 2008 data are preliminary and subject to revision.

Source: AIHW [GRIM \(General Record of Incidence of Mortality\) Books](#); ABS [Causes of Death, Australia, 2008](#) (cat. no. 3303.0)

### Age-standardised death rate from all diseases of the circulatory system(a)(b)



- (a) Comprises all diseases and conditions involving the heart and blood vessels including ischaemic heart disease, cerebrovascular disease (stroke), peripheral vascular disease and heart failure. In Australia, these diseases mostly result from impeded or diminished supply of blood to the heart, brain or leg muscles.<sup>9</sup>
- (b) 2008 data are preliminary and subject to revision.

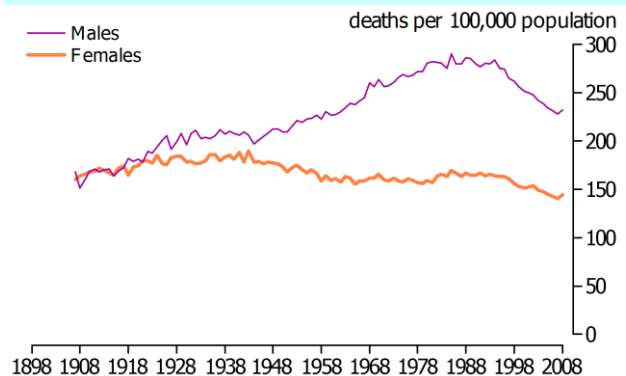
Source: AIHW [GRIM \(General Record of Incidence of Mortality\) Books](#); ABS [Causes of Death, Australia, 2008](#) (cat. no. 3303.0)

### ...causes of death

A major reason for increased life expectancy in the first half of the 20th century was the falling death rate from infectious and parasitic diseases. Between 1922 and 1924, infectious and parasitic diseases caused 15% of all deaths in Australia. By 1966, they caused less than 1% of all deaths. This reduction is generally believed to be the result of medical advances, and an overall rise in living standards including improved nutrition levels, better sanitary, water and sewerage control, and better control of infection in hospitals.<sup>10</sup>

Increased life expectancy at all ages since the latter half of the 20th century is largely due to a large decline in the age-standardised death rate from circulatory disease. For males, the age-standardised death rate from all diseases of the circulatory system decreased from 1,020

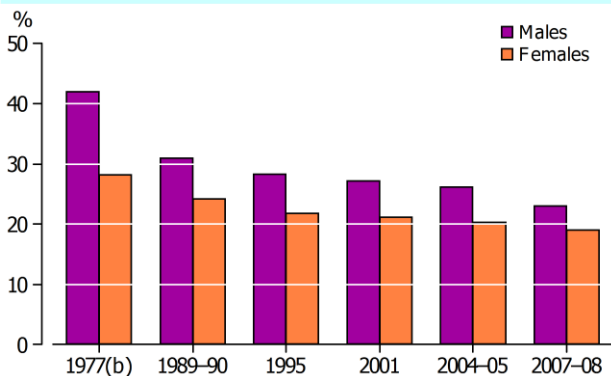
### Age-standardised death rate from cancer(a)(b)



- (a) Cancer deaths are deaths where the underlying cause of death, based on information on the death certificate, is cancer.
- (b) 2008 data are preliminary and subject to revision.

Source: AIHW [GRIM \(General Record of Incidence of Mortality\) Books](#); ABS [Causes of Death, Australia, 2008](#) (cat. no. 3303.0)

### Age-standardised(a) proportions of adults who were current smokers



(a) To the age structure of Australia's estimated resident population on 30 June 2001.

(b) Excludes those who smoked only pipes and/or cigars.

Source: ABS *Alcohol and Tobacco Consumption Patterns, February 1977* (cat. no. 4312.0); ABS 1989-90, 1995, 2001, 2004-05 and 2007-08 National Health Surveys; ABS *Australian Demographic Statistics, June 2010* (cat. no. 3101.0)

deaths per 100,000 in 1968 to 234 deaths per 100,000 in 2008. For females, it decreased from 718 deaths per 100,000 in 1952 to 167 deaths per 100,000 in 2008.

Another leading cause of death is cancer. For males, the age-standardised death rate from cancer rose throughout most of the 20th century before declining from 290 deaths per 100,000 in 1985 to 232 deaths per 100,000 in 2008. For females, the rate increased during the first half of the 20th century but then slowly decreased from 190 deaths per 100,000 during the Second World War to 144 deaths per 100,000 in 2008. Improved chemotherapy, radiotherapy and surgical techniques, together with screening programs introduced in the 1990s, have contributed to improved cancer survival rates over recent years.

### ...risk factors

Smoking is one preventable activity that increases the likelihood of dying from either circulatory disease or cancer. Worldwide, tobacco use is the leading cause of preventable death, and is estimated to cause more than 5 million deaths each year.<sup>11</sup>

In Australia there has been behavioural change away from smoking over the past few decades. After standardising to remove the effect of different age structures, 23% of men and 19% of women were smoking in 2007-08, down significantly from 1977 when at least 42% of men and 28% of women were smoking.

Other risk factors associated with premature death include not being immunised against disease, excessive consumption of alcohol and saturated fat, low usual intake of fruit and vegetables, and insufficient exercise. It has been estimated that tobacco was responsible for 7.8% of all 'healthy' years of life lost in Australia in

### Aboriginal and Torres Strait Islander life expectancy

While Australians can generally expect to live a relatively long life, there are differences between population groups within Australian society. In particular, life expectancy at birth for Aboriginal and Torres Strait Islander (Indigenous) Australians is considerably lower than it is for other Australians. Estimates of life expectancy at birth for Indigenous Australians are commonly used as a measure for assessing Indigenous population health and disadvantage.

Based on age-specific death rates prevailing during 2005-07, life expectancy at birth for Indigenous males is estimated to be 67.2 years, which is 11.5 years less than life expectancy at birth for non-Indigenous males (78.7 years). Life expectancy at birth for Indigenous females is estimated to be 72.9 years, which is 9.7 years less than life expectancy at birth for non-Indigenous females (82.6 years). The gap between Indigenous and non-Indigenous life expectancy for males is wider in the Northern Territory (14.2 years) and Western Australia (14.0 years). It is also wider between Indigenous and non-Indigenous females in these two jurisdictions (12.5 years in Western Australia and 11.9 years in the Northern Territory).

Life expectancy at birth for Indigenous males is estimated to be higher in New South Wales (69.9 years) than it is in the Northern Territory (61.5 years). Similarly, life expectancy at birth for Indigenous females is also estimated to be higher in New South Wales (75.0 years) than in the Northern Territory (69.2 years).

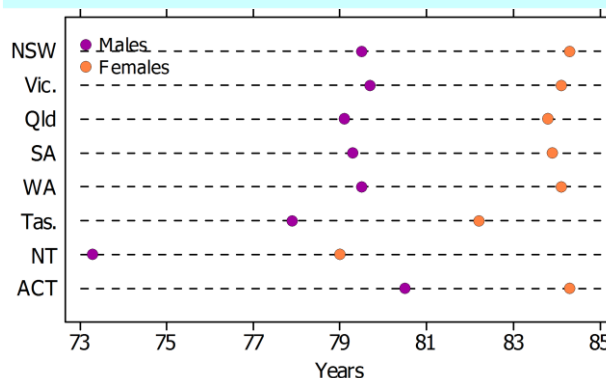
Source: ABS *Experimental Life Tables for Aboriginal and Torres Strait Islander Australians, 2005-2007* (cat. no. 3302.0.55.003)

2003 because of disability or premature death. Physical inactivity was estimated to be responsible for 6.6%, alcohol for 2.3%, and low fruit and vegetable consumption for 2.1%.<sup>12</sup>

### State and territory differences

Life expectancy at birth differs between the states and territories. For 2007-2009, girls born in New South Wales and the Australian Capital Territory had the highest life expectancy (both

### Life expectancy at birth, state and territory – 2007-2009



Source: ABS *Deaths, Australia, 2009* (cat. no. 3302.0)



84.3 years), followed by Victoria and Western Australia (both 84.1 years). Life expectancy at birth for females was lowest in Tasmania (82.2 years) and the Northern Territory (79.0 years).

There were similar differences for boys born during 2007–2009, with those born in the Australian Capital Territory having the highest life expectancy at birth (80.5 years). Life expectancy at birth for males was also lowest in the Northern Territory (73.3 years), in part reflecting the Northern Territory's relatively high proportion of Aboriginal and Torres Strait Islander peoples who have substantially lower life expectancy.

### Implications of living longer

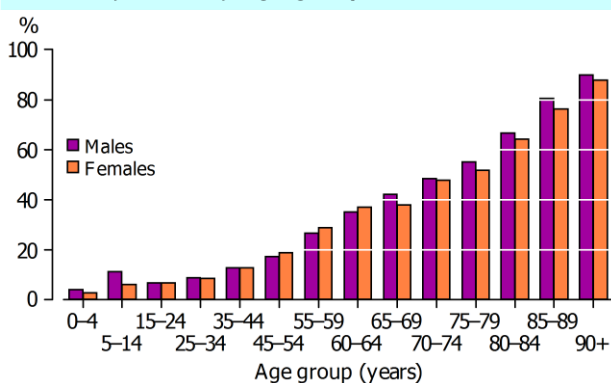
Increasing life expectancy has partly driven the ageing of the Australian population. In 1901, only 4% of Australians were aged 65 years or older. By June 2010, this proportion had risen to 13.5%, and is projected to increase to between 21% and 23% by 2041.

### ...rising Age Pension eligibility age

Increasing years of life between traditional retirement age and death have seen retirement income policies come into sharper focus over recent decades. Successive Australian governments have legislated compulsory superannuation contributions by employers, and provided incentives for Australians to save for retirement over their whole working life.

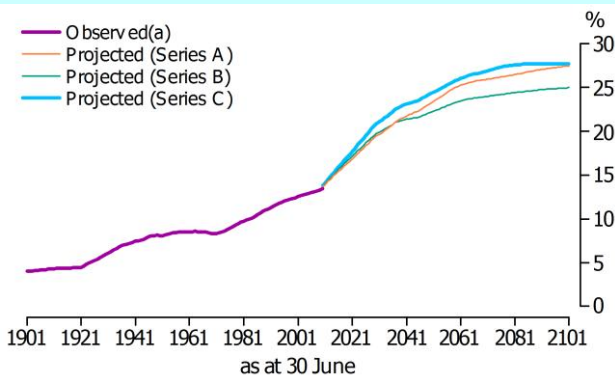
Since 1995, the Age Pension qualifying age for women has been gradually rising from 60 years and will reach 65 years in 2013. Between 2017 and 2023, the Age Pension qualifying age is scheduled to slowly increase from 65 years to 67 years for both men and women.<sup>13</sup> This may extend the number of years some people spend in the workforce, as reaching eligibility age for an age (or service) pension is the main factor influencing some workers' retirement date.<sup>14</sup> Despite the higher Age Pension qualifying age, Australian government spending on

### Disability rates by age group and sex – 2009



Source: ABS *Disability, Ageing and Carers, Australia: Summary of Findings, 2009* (cat. no. 4430.0)

### Proportion of the Australian population aged 65 years or older



(a) 1902-10 and 1912-1920 data points have been interpolated. 2009 and 2010 data points were calculated using preliminary population estimates.

Series A assumes high levels of fertility, life expectancy, and overseas migration. Series B assumes medium levels of fertility, life expectancy and overseas migration. Series C assumes medium levels of life expectancy and low levels of fertility and overseas migration.

Source: ABS *Australian Historical Population Statistics 2008* (cat. no. 3105.0.65.001); ABS *Australian Demographic Statistics June 2010* (cat. no. 3101.0); ABS *Population Projections Australia 2006 to 2101* (cat. no. 3222.0)

age-related pensions is projected to rise from 2.7% of gross domestic product (GDP) in 2009–10 to 3.9% in 2049–50.<sup>1</sup>

### ...more people with a disability

There's a strong correlation between age and disability. In 2009, 40% of 65–69 year old Australians had a disability. The probability of having a disability increases with age, peaking at 88% for Australians in the 90 years or older age group.

If the age-specific rates of disability that prevailed in 2009 continue into the future, then the number of Australians with a disability appears likely to increase considerably during the 21st century. By 2101, there is projected to be between 9.3 and 17.1 million Australians aged 65 years or older,<sup>15</sup> well up on the preliminary estimate of 3.0 million people aged 65 years or older living in Australia on 30 June 2010.<sup>16</sup>

### ...greater demand for health services

The ageing population is expected to contribute to significantly increased spending on health care over the next 40 years. Australian government spending on health is projected to rise from 4.0% of GDP in 2009–10 to 7.1% in 2049–50.<sup>1</sup>

Not all of this projected increase in health spending is attributable to population ageing. Expected technological advancements in health, and demand for higher quality health services by people of all ages, are also expected to contribute to greater spending on health.<sup>1</sup>

## ...growing demand for aged care

Australian government spending on aged care is also projected to rise between 2009–10 and 2049–50 (from 0.8% to 1.8% of GDP). Growth in spending on residential aged care (e.g. nursing homes and hostels) is the main contributor to the increase, reflecting the expectation that the number of Australians aged 85 years or older will more than quadruple over the next 40 years. However, spending on community aged care (i.e. care provided to people in their own homes) is also projected to rise significantly. Population ageing is the primary driver of increased aged care spending to 2049–50, accounting for around two-thirds of the projected increase in real spending on aged care per person.<sup>1</sup>

## Looking ahead

In 2008, the Council of Australian Governments (COAG) agreed to specific timeframes for overcoming Indigenous disadvantage by achieving six Closing the Gap targets. Two of these targets were halving the gap in 0–4 year old mortality rates within a decade, and closing the life expectancy gap within a generation.<sup>17</sup> Closing the life expectancy gap within a generation means increasing the life expectancy of Indigenous men by over 20 years and Indigenous women by over 16 years by 2031.<sup>18</sup> This entails raising Indigenous life expectancy by more than the gap estimated to exist in 2005–07, in order to also match gains in non-Indigenous life expectancy between 2005–07 and 2031.

The recent trend in obesity and excess body weight among Australian children has caused some concern that life expectancy at age 20 could fall by 1.7 years for males (back to 2001 levels) and 2.2 years for females (back to 1997 levels).<sup>19</sup> It is possible that continuous research and development of medical equipment, treatment procedures and pharmaceuticals will continue to increase life expectancy at all ages, regardless of greater risk posed by factors such as obesity.

Policies and programs aimed at keeping all Australians healthier while they are living continue to grow. For example, the campaign to further reduce smoking rates has recently been strengthened by the inclusion of prescription nicotine patches on the Pharmaceutical Benefits Scheme. Other current programs and campaigns include eliminating passive smoking, minimising the harmful effects of alcohol, preventing eating disorders, injury and suicide, increasing immunisation rates, encouraging greater participation in sport and other physical activity, and promoting daily consumption of fruit and vegetables.<sup>20</sup>

## Endnotes

1. Australian Government, 2010, [Australia to 2050: future challenges \(Intergenerational Report 2010\)](#), viewed 1 February 2011, <[www.treasury.gov.au](http://www.treasury.gov.au)>.
2. Australian Institute of Health and Welfare, 2008, [GRIM Books Version 9: All certain infectious & parasitic diseases \(ICD10 A00-B99\)](#), viewed 8 March 2011, <[www.aihw.gov.au](http://www.aihw.gov.au)>.
3. Jain SK, 1994, [Trends in Mortality](#), National Centre for Epidemiology and Population Health and ABS, (ABS cat. no. 3313.0), <[www.abs.gov.au](http://www.abs.gov.au)>.
4. Olshansky S Jay and Ault A Brian, 1986, [The fourth stage of the epidemiologic transition: the age of delayed degenerative diseases](#) in *The Milbank Quarterly*, Vol. 64, No. 3, 1986 (pp. 355–391), <[www.jstor.org](http://www.jstor.org)>.
5. Australian Bureau of Statistics, 2010, [Year Book Australia 2009–10](#), cat. no. 1301.0, <[www.abs.gov.au](http://www.abs.gov.au)>.
6. Australian Bureau of Statistics, 2010, [Deaths Australia 2009](#), cat. no. 3302.0, <[www.abs.gov.au](http://www.abs.gov.au)>.
7. Australian Institute of Health, 1989, [Australia's Health](#), Australian Government Publishing Service, Canberra.
8. Australian Bureau of Statistics, 2010, [Measures of Australia's Progress 2010](#), cat. no. 1370.0, <[www.abs.gov.au](http://www.abs.gov.au)>.
9. d'Espaignet ET, 1993, [Trends in Australian Mortality – Diseases of the Circulatory System: 1950–1991](#), Australian Government Publishing Service, Canberra.
10. Australian Institute of Health and Welfare, 2000, [Australia's Health 2000](#), AIHW cat. no. 19, viewed 24 February 2011, <[www.aihw.gov.au](http://www.aihw.gov.au)>.
11. World Health Organization, 2009, [WHO report on the global tobacco epidemic, 2009: implementing smoke-free environments](#), viewed 22 February 2011, <[www.who.int](http://www.who.int)>.
12. Begg S, Vos T, Barker B, Stevenson C, Stanley L, Lopez AD, 2007, [The burden of disease and injury in Australia 2003](#), AIHW cat. no. PHE 82, <[www.aihw.gov.au](http://www.aihw.gov.au)>.
13. Centrelink, 2009, [Increase in age pension age](#), viewed 1 February 2011, <[www.centrelink.gov.au](http://www.centrelink.gov.au)>.
14. Australian Bureau of Statistics, 2009, [Retirement and Retirement Intentions, Australia, July 2008 to June 2009](#), cat. no. 6238.0, <[www.abs.gov.au](http://www.abs.gov.au)>.
15. Australian Bureau of Statistics, 2008, [Population Projections, Australia, 2006 to 2101](#), cat. no. 3222.0 viewed 23 February 2011, <[www.abs.gov.au](http://www.abs.gov.au)>.
16. Australian Bureau of Statistics, 2010, [Australian Demographic Statistics June Quarter 2010](#), cat. no. 3101.0 viewed 23 February 2011, <[www.abs.gov.au](http://www.abs.gov.au)>.
17. Australian Government Department of Families, Housing, Community Services and Indigenous Affairs, [Closing the Gap: The Indigenous Reform Agenda](#), viewed 17 February 2011, <[www.fahcsia.gov.au](http://www.fahcsia.gov.au)>.
18. Gillard J, 2011, [This work will go on, Speech to the House of Representatives](#), viewed 22 February 2011, <[www.pm.gov.au](http://www.pm.gov.au)>.
19. Holman CDJ and Smith F, 2008, [Implications of the Obesity Epidemic for the Life Expectancy of Australians: Report to the Western Australian Institute for Public Health Advocacy](#), <[www.phaiwa.org.au](http://www.phaiwa.org.au)>.
20. Australian Government Department of Health and Ageing, [Programs & Campaigns](#), viewed 1 February 2011, <[www.health.gov.au](http://www.health.gov.au)>.

# Health services: Use and patient experience

Within Australia, all levels of government provide a range of health services which aim to meet a variety of purposes. Some health services may seek to reduce the onset of disease, while others are concerned with managing ill health.

The majority of Australians utilise health services. Despite the billions of dollars that are spent on health services each year by all levels of government and non-government sources, many people report that they are unable to access the care they require. Improving these health services is one of the objectives of the National Healthcare Agreement.<sup>1</sup> Central to achieving this objective is improving primary and community health services by ensuring timely and quality care is available.

This article will consider people's reported use of selected services, including general practitioners, pathology testing, imaging and medication use, and whether people were able to access appropriate services when they were required.

## Funding of health services

Health services provided by all levels of government strive to promote, restore and maintain health.<sup>2</sup> Such services involve the detection and treatment of illness and injury, as well as health promotion initiatives that aim to raise awareness of health issues and reduce the onset of disease. In 2008–09, the Commonwealth, state, territory and local governments spent \$78.6 billion on health goods and services, amounting to 70% of the \$112.8 billion spent on health goods and services from all sources.<sup>3</sup>

The Commonwealth Government accounts for the largest proportion of expenditure on health goods and services, having funded 43% in 2008–09.<sup>3</sup> The largest components funded by the Commonwealth Government were its own programs, including the Medicare Benefits Schedule (MBS) and the Pharmaceutical Benefits Scheme (PBS), which totalled \$29.4 billion of the \$48.7 billion spent by the Commonwealth Government.<sup>3</sup>

State, territory and local governments contribute funding for, and deliver, a range of health care and services including: public hospital services, public health initiatives, community health services, public dental services, mental health programs, aged care, and health policy research and development.<sup>2</sup> In 2008–09, state, territory and local government funding of health goods and services cost \$29.9 billion, or 27% of total health expenditure.<sup>3</sup>

## Data sources and definitions

This article is mainly based on data from the ABS 2009 Patient Experience Survey, the main findings of which can be found in [Health Services: Patient Experiences in Australia, 2009](#) (cat. no. 4839.0.55.001), and the ABS 2007–08 National Health Survey, the main findings being available in [National Health Survey: Summary of Results, 2007–08 \(Reissue\)](#) (cat. no. 4364.0). The scope of both surveys was for people living in private dwellings. People living in health establishments such as hospitals or nursing homes, or in other non-private dwellings, were not included. People living in very remote areas were also not included.

*After hours care* is care that is received after the standard business hours of the health service on a public holiday; or a Sunday; or before 8am or after 1pm on a Saturday; or before 8am or after 8pm on any other day.

*A hospital admission* is the formal acceptance by a hospital or other inpatient health care facility where the patients generally reside at least overnight.

Non-government sources for funding health goods and services totalled \$34.2 billion (30% of total health expenditure) in 2008–09. These sources included costs incurred by individuals (\$18.9 billion), private health insurance funds (\$8.8 billion) and other non-government sources such as injury compensation insurers.<sup>3</sup>

## Funding of health expenditure – 2008-09

Source of funds	Expenditure	
	(\$ billion)	(%)
Commonwealth Government	48.7	43.2
<i>Department of Veterans Affairs</i>	3.5	3.1
<i>Private health insurance rebates</i>	3.6	3.2
<i>Own programs (a)</i>	29.4	26.1
<i>Grants to states</i>	11.7	10.4
<i>Medical expenses rebate</i>	0.5	0.4
State, territory and local governments	29.9	26.5
Non-government sources (b)	34.2	30.3
<b>Total health goods and services</b>	<b>112.8</b>	<b>100.0</b>

(a) These include the MBS, PBS, public health, research, the Aboriginal community-controlled health and substance use services, and health-related capital consumption and capital expenditure.

(b) Mostly out-of-pocket payments by individuals, but also includes funding by private health and injury compensation insurers and other private funding.

Source: AIHW, [Health Expenditure Australia 2008-09](#), viewed 28 February 2011 <[www.aihw.gov.au](http://www.aihw.gov.au)>

## Disadvantage and Remoteness

*Areas of disadvantage* are analysed in this article using one of the Socio-Economic Indexes for Areas (SEIFA) based upon the 2006 Census of Population and Housing. The SEIFA Index of Disadvantage combines a number of variables (such as income, education and unemployment) of people, families and dwellings within an area, and uses this information to rank areas on a scale of relative disadvantage. The first quintile represents the areas of most disadvantage and the fifth quintile represents the areas of least relative disadvantage.

*Remoteness Area* is a structure of the Australian Standard Geographical Classification (ASGC). It classifies areas sharing common characteristics of remoteness into broad geographical regions (Remoteness Areas). In most instances in this article Remoteness Areas are collapsed into three levels:

- Major Cities;
- Inner Regional Areas; and
- Outer Regional/Remote/Very Remote Areas (where available).

For further information about Remoteness Areas see Chapter 8 of ABS [Australian Standard Geographical Classification \(ASGC\), July 2010](#) (cat. no. 1216.0).

## Use of health services

### ...general practitioners (GPs)

Primary and community health services are usually a patient's first contact with the health care system. These service providers, particularly GPs, play an important role in monitoring an individual's health and managing their health conditions. Advice from doctors has been shown to be most effective in changing unhealthy behaviour,<sup>4</sup> and access to primary health care services is a prerequisite for improved management of chronic disease.

According to the ABS 2009 Patient Experience Survey, four out of five people (81%) aged 15 years and over had seen a GP in the 12 months prior to the survey. Women were more likely

than men to have seen a GP in the last 12 months (87% and 75% respectively). This gap was most evident during women's childbearing years, as women may have sought care more frequently for reproductive medical services, and as such, have had a higher number of visits to GPs.<sup>5</sup>

Of people who had seen a GP, around one in ten (11%) made 12 or more visits in the year prior to the survey. Those aged 65 to 74 years and those aged 75 years and over were the age groups most likely to visit a GP 12 or more times (23% and 24% respectively). In addition, those living in areas of most disadvantage were more likely than those in areas of least disadvantage to visit a GP 12 or more times (17% compared with 5.9%).

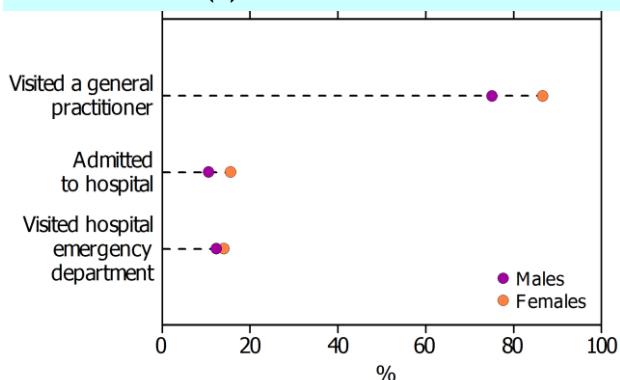
While the proportion of people who visited a GP in the last 12 months did not vary greatly across Remoteness Areas (82% in Major Cities, 80% in Inner Regional Areas and 78% in Outer Regional/Remote Areas), there was a difference in the proportion of people who had seen a GP after hours between Major Cities and Outer Regional/Remote Areas (8.6% and 5.8% respectively).

Of those in Major Cities who had seen a GP after hours, 38% did so at a regular practice, 19% did so at an after hours clinic at a hospital and 43% did so at either a late night clinic, other clinic/practice or via a home visit. Of people in Outer Regional/Remote Areas who had seen a GP after hours, almost half (46%) did so at an after hours clinic at a hospital, while 34% did so at a regular general practice.

### ...hospital admissions

The hospital sector consists of more than 1,300 public and private hospitals, of which people have the ability to move between for different public or private treatment services. The majority of hospital resources are used to provide care to admitted patients.<sup>6</sup> In 2009, just over 13% of the population aged 15 years and

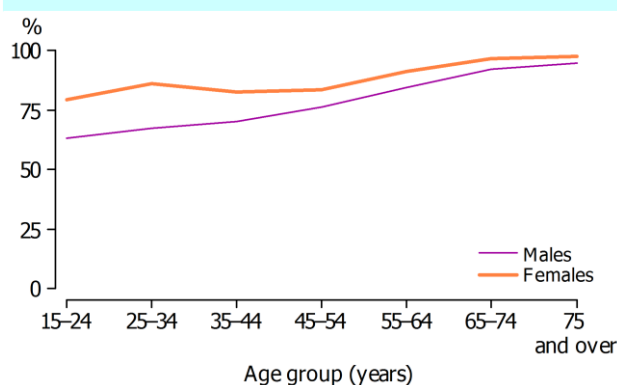
### Selected health service use in the last 12 months – 2009(a)



(a) Aged 15 years and over.

Source: ABS [Health Services: Patient Experience in Australia, 2009](#) (cat. no. 4839.0.55.001)

### Proportion of men and women who had seen a GP in the last 12 months – 2009



Source: ABS [Health Services: Patient Experience in Australia, 2009](#) (cat. no. 4839.0.55.001)

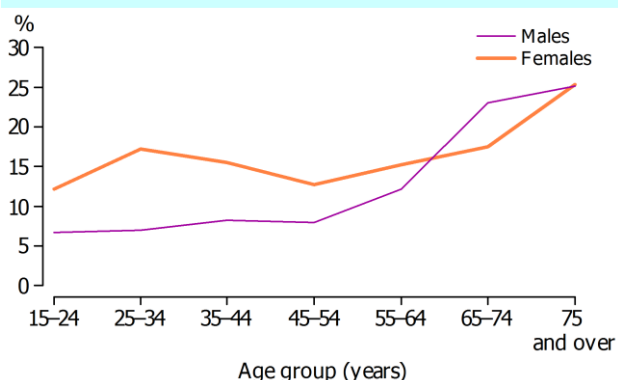


over were admitted to hospital. Those aged 75 years and over were the most likely to be admitted in this period (25%). Under the age of 55 years, women were more likely than men to have been admitted to hospital. This is particularly true for those aged 15–24 years (6.7% for men and 12% for women), 25–34 years (7.0% for men and 17% for women) and 35–44 years (8.3% for men and 16% for women). Some of these differences may be explained by women in their child bearing years utilising hospital services such as gynaecological and obstetric services more frequently than their male counterparts — in 2008–09, 6.6% of all hospital separations had a principal diagnosis of pregnancy or childbirth, or conditions originating in the perinatal period.<sup>6</sup>

There was a difference in the proportion of public and private patient hospital admissions across areas. Almost half (49%) of those living in Major Cities were treated as private patients, compared with 34% of those living in Outer Regional/Remote Areas. Almost three-quarters (71%) of those in the least disadvantaged areas were admitted to hospital as private patients, compared with 24% of those in the most disadvantaged areas.

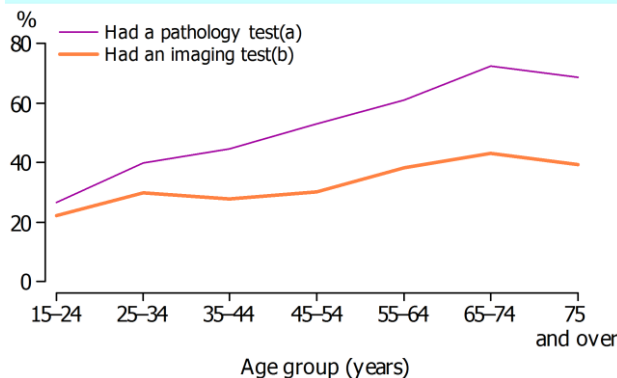
Across different geographical areas, the number of available hospital beds per 1,000 population varied to some extent. In 2008–09, the average number of beds available was less in Major Cities and regional areas (Inner and Outer Regional Areas combined) than it was in remote areas (Remote and Very Remote Areas combined). The average number of available beds per 1,000 population resident in an area was 2.5 in Major Cities and 2.9 in regional areas, compared with 4.3 in remote areas.<sup>6</sup> The additional beds in remote areas may in part be explained by some hospitals in these areas having the added responsibility of providing primary health and aged care services, whereas in Major Cities these are separate facilities.<sup>7</sup>

### Proportion of men and women who have been admitted to hospital – 2009



Source: ABS [Health Services: Patient Experience in Australia, 2009](#) (cat. no. 4839.0.55.001)

### Proportion of people who had a pathology or imaging test – 2009



(a) Tests for which respondent was referred by a health professional, excluding tests had in hospital.

(b) Excluding tests had in hospital and dental work.

Source: ABS [Health Services: Patient Experience in Australia, 2009](#) (cat. no. 4839.0.55.001)

### ...emergency departments

Hospitals also provide an abundance of outpatient services, including those provided by emergency departments. Approximately 2.3 million people (13%) aged 15 years and over reported going to a hospital emergency department in the 12 months prior to the ABS 2009 Patient Experience Survey. The main reason that people went to an emergency department was because their condition was serious or life threatening (47%). Almost a quarter (23%) did so because of the time of day/day of week, suggesting health care was required outside of normal business hours when regular general practices may have been closed.

People from areas of most disadvantage were more likely to visit a hospital emergency department more than once a year. In areas of most disadvantage, 32% of people who had visited a hospital emergency department in the last 12 months had two or more visits, compared with 20% of those in areas of least disadvantage.

Visits to hospital emergency departments were similar across different geographical areas. Approximately 13% of those living in Major Cities went to a hospital emergency department in 2009, compared with 14% of those in Inner Regional Areas and 15% of those in Outer Regional/Remote Areas.

### ...other health services

Almost half of the population (49%) aged 15 years and over had a pathology test in 2009. People aged 65–74 years (73%), and 75 years and over (69%), were most likely to have had such a test, and women were more likely than men (55% and 42% respectively).

Women were also more likely to have had an imaging test (37% compared with 25% of men), received a prescription for medication (84% compared with 78% of men) or have asked a pharmacist for advice (28% compared with 17% of men).

## Patient experience

Accountability is an important component of the healthcare system. Information on patient perceptions of their health care experiences is important in determining deficiencies in services and improving accountability. The main barriers to accessing services identified in the ABS 2009 Patient Experience Survey were cost, unacceptable waiting times and lack of available services.

### ...cost

According to the ABS 2009 Patient Experience Survey, approximately 1.1 million Australians aged 15 years and over (6.3%) reported that they had delayed seeing or did not see a GP in the previous year because of the cost. There was no significant difference in the proportions of those who didn't see a GP because of cost between the most disadvantaged areas and the least disadvantaged areas. This may be due to people living in the most disadvantaged areas having access to government health concession cards and veteran concession cards<sup>8</sup> or their ability to access community health facilities or Aboriginal Medical Services. In such circumstances, cost may be less of a consideration.

Similar proportions of people living in Major Cities, Inner Regional and Outer Regional/Remote Areas had seen a GP (82%, 80% and 78% respectively). There was little difference in the proportion who had delayed seeing a GP because of the cost (6.1% living in Major Cities, 6.8% living in Inner Regional Areas and 6.6% living in Outer Regional/Remote Areas).

Almost one in ten delayed getting or did not get prescribed medication because of the cost (9.0% or about 1 million people). Additionally, more than twice the proportion of people in the most disadvantaged areas found cost a barrier to receiving prescribed medication compared with those in the least disadvantaged areas (12% and 5.4% respectively).

### ...unable to access appropriate health services

In 2009, 5.4% of the population (937,800 people) aged 15 years and over reported there had been times that they had been unable to access health services. For 82% of these people, it had not been possible to visit a GP when one was required, while 9.5% of those who were unable to access health services could not see a medical specialist.

## Health insurance

With the advent of Medicare, private health insurance became less essential for many people. In an attempt to improve private health insurance coverage, the Commonwealth Government introduced several policies to encourage its uptake.<sup>9</sup> These policies take some of the demand from the public health system by encouraging those who can afford it to use the private hospital system.

Figures from the ABS 2007–08 National Health Survey indicate that over half (53%) of the population aged 15 years and over have private health insurance. Those in the age groups 15–24 years, 25–34 years and 75 years and over had the lowest rates of private health insurance (46%, 45% and 45% respectively).

After accounting for the effects of age in comparisons between people living in Major Cities and outside Major Cities, people who lived in Major Cities in 2007–08 were 27% more likely than those living outside Major Cities to have private health insurance. Conversely, those living in Major Cities were 23% less likely than those living outside Major Cities to have a government health-related concession card (such as a Health Care Card).

In 2007–08, those living in Major Cities were 26% less likely than those living outside Major Cities to have a Health Care Card (including the Low Income Health Care Card).

A quarter (25%) of those living outside Major Cities did not have either private health insurance or a government health related concession card, compared with 22% of those living in Major Cities.

The most common reason for those who did not have private health insurance in both Major Cities and outside Major Cities was that they could not afford private health insurance or thought that it was too expensive (59% and 58% respectively).

The main reasons reported for not being able to access health services were that waiting times were too long or no appointment was available (47%), or there had been no service available in the area at the time it was needed (34%).

Almost a quarter (23%) of people living in Outer Regional/Remote Areas felt they waited longer than was acceptable for an appointment with a GP, compared with 16% of those living in Major Cities. People living in Outer Regional/Remote Areas were also four and a half times as likely as those living in Major Cities to travel more than one hour to see a GP (8.2% compared with 1.8%).

A shortage of GPs may result in hospitals being the first place of call when medical treatment is required. Indeed, a quarter of those who visited an emergency department (556,400) thought at the time of the visit that the care could have been provided by a GP. The proportion of people who thought this was not significantly different between Major Cities, Inner Regional and Outer Regional/Remote Areas. Around one in ten (12%) of those in Outer Regional/Remote

Australia went to an emergency department because the waiting time for an appointment with a GP was too long, compared with 2.0% of people living in Major Cities.

Those living in Outer Regional/Remote Areas also experienced problems when trying to secure an appointment with a specialist. Just over a quarter (27%) felt they waited longer than was acceptable, compared with 20% of those living in Major Cities.

### Looking ahead

The majority of Australians interact with health services each year. However for some, cost and accessibility provide barriers to accessing care when it is required. The National Healthcare Agreement has identified health service accessibility as a priority. It states that providing all Australians with timely access to quality health services when required should not be based on their ability to pay or where they live in the country.

### Endnotes

1. Steering Committee for the Review of Government Service Provision (SCRGSP), 2009, *National Agreement performance information 2008–09: National Healthcare Agreements*, Productivity Commission, Canberra.
2. Steering Committee for the Review of Government Service Provision (SCRGSP), 2010, *Report on Government Services 2010*, Productivity Commission, Canberra.
3. Australian Institute of Health and Welfare 2010, *Health expenditure Australia 2008–09*. Health and welfare expenditure series no. 42. cat. no. Canberra: AIHW, p. 22, <[www.aihw.gov.au](http://www.aihw.gov.au)>.
4. Jepson RG, Harris FM, Platt S and Tannahill C, *The effectiveness of interventions to change six health behaviours: a review of reviews*; BMC Public Health 2010, 10:538, <[www.biomedcentral.com](http://www.biomedcentral.com)>.
5. Uncommon Insights, 2007, *Literature Review on Effective Sex and Gender-Based Systems/Models of care*, U.S. Department of Health and Human Services, p. 2, <[www.womenshealth.gov](http://www.womenshealth.gov)>.
6. Australian Institute of Health and Welfare 2010, *Australian hospital statistics 2008–09*, Health services series no. 34. cat. no. HSE 84. Canberra: AIHW, <[www.aihw.gov.au](http://www.aihw.gov.au)>.
7. Productivity Commission, 2009, *Public and Private Hospitals*, Research Report, Canberra, <[www.pc.gov.au](http://www.pc.gov.au)>.
8. Australian Bureau of Statistics, 2010, *'Health and socioeconomic disadvantage'*, Australian Social Trends, March 2010, cat. no. 4102.0, ABS, Canberra, <[www.abs.gov.au](http://www.abs.gov.au)>.
9. These policies are:
  - i. The Medicare Levy Surcharge. Introduced on 1 July 1997, the surcharge is applied to people who do not have private hospital cover and earn above a specified amount (\$77,000 for individuals and \$154,000 for families in 2010–11).
  - ii. The Private Health Insurance Rebate. Introduced on 1 January 1999, this incentive provides a rebate on every dollar an individual contributes to their private health insurance premium, irrespective of income. The Rebate increases depending on age:
    - 30% for people aged under 65,
    - 35% for people aged 65–69, and
    - 40% for people aged 70 and over.
  - iii. The Lifetime Health Cover scheme. Introduced on 15 July 2000, this scheme provides incentives to people who purchase hospital cover. People who purchase cover before the 1<sup>st</sup> July following their 31<sup>st</sup> birthday, and who maintain their membership, pay lower premiums throughout their lifetime relative to people who delay joining.

Australian Bureau of Statistics 2003, *Private Health Insurance 2001*, cat. no. 4815.0.55.001, <[www.abs.gov.au](http://www.abs.gov.au)>.

Private Health Insurance Ombudsman, *Government surcharges and incentives*, viewed 2 March 2011, <[www.privatehealth.gov.au](http://www.privatehealth.gov.au)>.

# Health outside major cities

The health that people enjoy impacts on many aspects of their lives, including the ability to socialise with family and friends, participate in the community, educate themselves or earn a living.

Health may be measured by the absence of disease or, alternatively, by the number and type of chronic conditions a person may have. The impact of risky behaviour they undertake is also an important consideration.

This article compares the health of people living outside Major Cities with that of those living in Major Cities. 'Outside Major Cities' is a geographical combination that encompasses regional and remote areas, and health may vary across these. A number of health programs administered by the Department of Health and Ageing, such as the Rural Primary Health Services Program, target the health outcomes of people living outside Major Cities.

For information regarding health service use and the experience of patients with some of these services, refer to the article '[Health services: Use and patient experience](#)', *Australian Social Trends March 2011* (cat. no. 4102.0).

## Who lives outside Major Cities?

People may live outside Major Cities for a variety of reasons, such as commercial opportunities,<sup>1</sup> a preference for living in smaller communities,<sup>2</sup> and the different lifestyle which may be found there.<sup>3</sup>

It is estimated that at 30 June 2009, nearly one third (31% or 6,886,600 people) of the

## Data sources and definitions

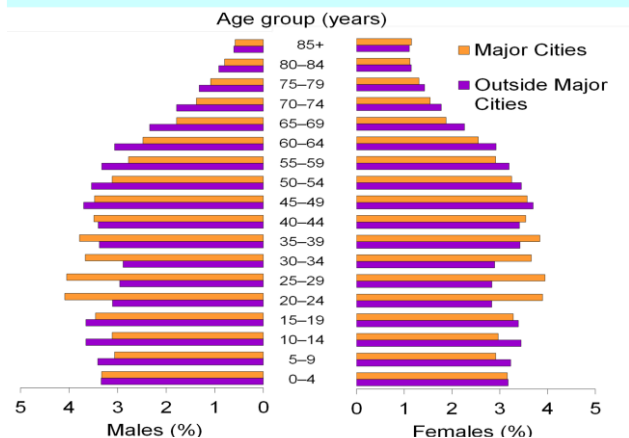
This article draws on a range of ABS sources including the 2007–08 National Health Survey (NHS), the 2007 Survey of Mental Health and Wellbeing (SMHWB), the 2006 Census of Population and Housing and the 2008 Causes of Death collection.

**Outside Major Cities.** In this article Outside Major Cities has been defined according to Remoteness Areas (a structure of the Australian Standard Geographical Classification (ASGC)), as all areas other than those classified as Major Cities. Therefore the Remoteness Areas of Inner Regional Australia, Outer Regional Australia, Remote Australia and Very Remote Australia (the latter not in scope for the NHS or SMHWB) are combined. The Remoteness Areas classification is derived using areas sharing common characteristics of remoteness. The remoteness of a point is measured by its physical distance by road to the nearest urban centre. For further information about Remoteness Areas see Chapter 8 of ABS [Australian Standard Geographical Classification \(ASGC\), July 2006](#) (cat. no. 1216.0).

**Major Cities** are Sydney, Newcastle, Wollongong, Tweed Heads and the Tweed Coast, Melbourne and Geelong, Brisbane, most of the Gold Coast and much of the Sunshine Coast, Adelaide, Perth, and Canberra and Queanbeyan. Hobart and Darwin are not included in the Major Cities group.

**Age standardised rates** are used in this article to remove the effect of age in comparisons between groups which have different age structures (e.g. between people who lived in Major Cities and those who did not). The use of age standardised rates means that any differences between the two areas is not due to different age structures. Direct age standardisation to the 2001 estimated resident population has been used in this article.

## Age distribution outside and in Major Cities – 30 June 2009



Source: ABS preliminary 2009 estimated resident population

Australian population resided outside Major Cities. The population in these areas grew by 11% (705,300 people) between 2001 and 2009 while the population of Major Cities areas grew by 14% (1,836,700 people).<sup>4</sup>

It is estimated that in 2009, 5.4% of those who lived outside Major Cities were Indigenous, as were 1.2% of the population who lived in Major Cities.<sup>4,5</sup> For information on the health of the Indigenous population see '[The city and the bush: Indigenous wellbeing across remoteness areas](#)', *Australian Social Trends September 2010* (cat. no. 4102.0).

The age structure of those living outside and in Major Cities is different. A higher fertility rate outside Major Cities leads to a higher proportion of children living in areas outside Major Cities.<sup>6</sup> However, after the completion of school, many young adults move to the city for further education and work opportunities.



## Self-assessed health

Self-assessed health is a good indicator of the overall health of a population, providing some insight into how people perceive their own health at a given point in time. Research has shown that self-assessed health can be a strong predictor of mortality and morbidity for some population groups.<sup>7</sup>

According to the ABS 2007–08 National Health Survey, people aged 15 years and over who lived outside Major Cities were less likely to think their health was excellent or very good than people who lived in Major Cities (4% less likely), and more likely to think that their health was fair or poor (15% more likely).

## Diseases or conditions

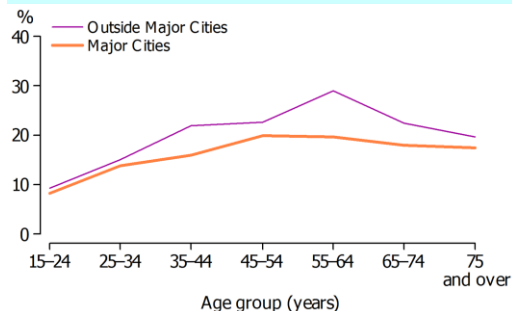
Across Australia, as the number of people with chronic disease increases, more pressure is put on health services as people seek to manage and treat their conditions. Increasingly, emphasis is being placed on disease prevention programs.

### ...prevalence

Although there were many long-term health conditions which were more common outside Major Cities than in Major Cities, there were several where there was a marked difference between the two areas. People who lived outside Major Cities in 2007–08 were 23% more likely to have had back pain, 20% more likely to have had asthma, and 27% more likely to have been deaf than people who lived in Major Cities. People who lived outside Major Cities were also 16% more likely to report that they had a mental or behavioural problem.

However, there was no significant difference in the prevalence of some other conditions e.g. diabetes, high cholesterol, and hayfever and allergic rhinitis. There was also no significant difference in the prevalence of cancer or ischaemic heart disease between the two areas,

### Prevalence of back pain(a) – 2007-08



(a) Back pain/problems not elsewhere classified/disc disorders.

Source: ABS 2007-08 National Health Survey

### Prevalence of selected long-term health conditions(a) outside Major Cities – 2007-08

	Prevalence %	Ratio to Major Cities (b)
Arthritis	17.7	1.13
Asthma	11.1	1.20
Back pain(c)	16.0	1.23
Deafness	12.6	1.27
High blood pressure	11.3	1.15
Mental and behavioural problems	12.2	1.16
Short sightedness	20.4	0.83

Selected conditions where the difference between the two areas is not significant		
Cancer(d)	1.9	1.19
Diabetes mellitis	4.7	1.14
Hayfever and allergic rhinitis	14.4	0.96
High cholesterol	6.3	1.00
Ischaemic heart disease	4.0	1.19
Osteoporosis	3.4	0.90

(a) Conditions which have lasted, or are expected to last, six months or more.

(b) Based on age standardised rates. This ratio shows how many times more likely it was to have a condition when living outside Major Cities compared with in Major Cities e.g. 1.13 times (13%) more likely, or 0.83 times (17% less likely).

(c) Back pain or problems not elsewhere classified and disc disorders.

(d) Malignant neoplasms.

Source: ABS 2007-08 National Health Survey

but as the two leading causes of the burden of disease and injury in Australia in 2003<sup>7</sup>, their treatment and prevention is a priority throughout Australia.

People who lived outside Major Cities were 17% less likely to report that they were short sighted than those who lived in Major Cities.

### ...conditions caused by injury

People who lived outside Major Cities in 2007–08 were 30% more likely to have had a long-term health condition which occurred as a result of an injury than those who lived in Major Cities. This may be due to the physically demanding occupations more commonly found outside Major Cities, such as agriculture, forestry and mining.

### Health risk factors

Health affecting behaviours such as smoking, risky alcohol consumption and obesity have each been identified as key risk factors in developing chronic disease. Developing healthy exercise and eating habits can lead to positive health outcomes.

## People outside Major Cities undertaking health risk behaviours(a) – 2007-08

	Proportion of people %	Ratio to Major Cities (b)
Current daily smoker	21.1	1.30
Risky drinker – long-term risk(c)	15.2	1.32
Risky drinker – short-term risk(c)	40.8	1.24
Overweight/obese(d)	65.7	1.13
Sedentary/low exercise level(e)	73.4	1.03
Met guidelines for fruit and vegetable consumption(f)	8.5	1.55

(a) People aged 15 years and over.

(b) Based on age standardised rates. This ratio shows how many times more likely it was to have this behaviour when living outside Major Cities compared with in Major Cities e.g. 1.30 times (30%) more likely.

(c) See the box 'Alcohol guidelines' for more information.

(d) Based on measured Body Mass Index. Excludes those for whom height or weight were not measured.

(e) Exercise undertaken for fitness, recreation or sport in the two weeks prior to interview.

(f) See the box 'Nutrition guidelines' for more information.

Source: ABS 2007-08 National Health Survey

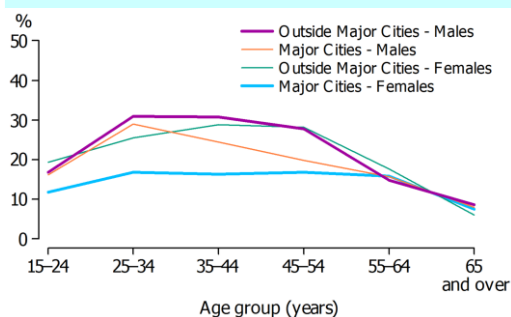
According to the ABS 2007-08 National Health Survey, rates of risky behaviour were generally higher outside Major Cities in comparison with Major Cities. In many cases, although the rates were higher outside Major Cities, the pattern of risky behaviour in the different age groups was often similar.

Contributing to good health, more fruit and vegetables were consumed by people aged 15 years and over who lived outside Major Cities compared with those who lived in Major Cities.

### ...daily smoking

People aged 15 years and over who lived outside Major Cities in 2007-08 were 30% more likely to be a daily smoker than those in Major Cities. The difference in daily smoking rates for women was greater than for men. Women outside Major Cities were 50% more likely to

### Current daily smokers(a) – 2007-08



a) People aged 15 years and over.

Source: ABS 2007-08 National Health Survey

## Alcohol guidelines

In 2001, the [National Health and Medical Research Council](#) (NHMRC) provided guidelines for drinking alcohol. The main guidelines for reducing health risks in the longer term limit consumption to four standard drinks a day for men and two standard drinks a day for women. To minimise risks in the short term, consumption is limited to no more than six standard drinks a day for men and four standard drinks a day for women. Short-term risky drinking is commonly referred to as 'binge' drinking. Although these guidelines were revised in mid-2009, the 2001 guidelines have been used here as these were the guidelines in place when the data were collected in the 2007-08 National Health Survey.

smoke on a daily basis, while men were 15% more likely. The daily smoking rate for women who lived in Major Cities plateaued around 16% between the 25-34 and 55-64 years age groups.

Men and women living outside Major Cities had higher rates of smoking in most age groups. However, from 55 years of age the rates of smoking converged for those in and outside Major Cities.

### ...risky drinking

People living outside Major Cities are more likely to experience alcohol-related harm through violence, acute and chronic health problems, and drink driving.<sup>8</sup> It has been suggested that the ongoing high levels of risky drinking outside Major Cities may be due to community acceptance of drinking as 'usual' behaviour and limited leisure and social venues.<sup>9</sup>

In 2007-08, people aged 15 years and over who lived outside Major Cities were 32% more likely than those in Major Cities to drink in the week prior to interview at levels which were risky for their health in the long term (see the box 'Alcohol guidelines' for more information).

Men living outside Major Cities were more likely to drink excessively than those in Major Cities (42% more likely), and this was also the case for women who were 20% more likely. One in four men aged 25-34 years (25%) who lived outside Major Cities drank at risky levels in the long term, while nearly one in six men of this age (15%) who lived in Major Cities drank at these levels.

In addition to the risk of long term harm from alcohol consumption, excessive drinking can also put the person at risk in the short term (also known as binge drinking — see the box 'Alcohol guidelines' for more information). In 2007-08, people aged 15 years and over who lived outside Major Cities were 24% more likely than those who lived in Major Cities to binge drink at some time in the previous 12 months.

Men who lived outside Major Cities were 27% more likely than those in Major Cities to have drunk more than six standard drinks in a day within the previous 12 months, the amount considered to be 'binge' drinking for men. The 25–34 year age group had the highest proportion of binge drinkers – seven in ten men (72%) in this age group who lived outside Major Cities drank at risky levels at some time in the previous 12 months, compared with six in ten (61%) in Major Cities.

The quality of data on alcohol consumption via recall methodology is known to have limitations, with people underestimating their consumption. This may particularly affect data related to the 15–24 years age group, where under-age drinking may have occurred.

### ...being overweight or obese

Excess body weight contributes to the risk of developing conditions such as diabetes, cardiovascular disease, osteoarthritis and some cancers.<sup>10</sup>

In 2007–08, people aged 15 years and over who lived outside Major Cities were 13% more likely to be overweight or obese than those in Major Cities. The difference in rates for women living outside Major Cities was more pronounced than for men – women were 19% more likely to be overweight or obese, while men were 8% more likely.

### ...inadequate exercise

Sporting clubs and facilities such as commercial gymnasiums are less available outside Major Cities, and there may be limited transport to those which are available. There can also be a belief that 'rural work' provides sufficient physical activity for a healthy life.<sup>11</sup>

In 2007–08, the likelihood of people aged 15 years and over who lived outside Major Cities being sedentary or having a low level of

### Nutrition guidelines

The [National Health and Medical Research Council](#) (NHMRC) has recommended a minimum of two serves of fruit and five serves of vegetables per day for adults. Children aged 15–17 years should consume three serves of fruit and four serves of vegetables.

exercise when measured by physical activity for fitness, recreation or sport was similar to those in Major Cities. However, occupations which involve physical activity are more common outside Major Cities so physical activity undertaken as part of their work duties may increase the difference in exercise level between the two areas. In 2007–08, 18% of employed people aged 15 years and over who lived outside Major Cities had employment which mainly involved heavy labour or physically demanding work compared with 11% in Major Cities.

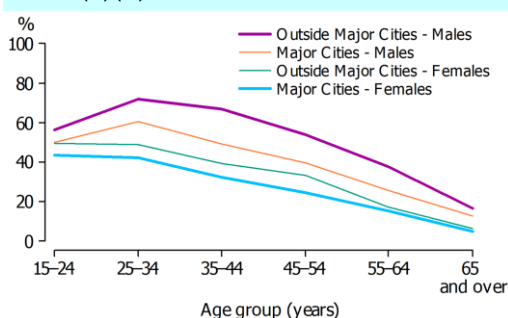
There was no significant difference for either men or women in the level of exercise for fitness, recreation or sport between those who lived outside Major Cities and in Major Cities. This was also the case for different age groups.

### ...fruit and vegetable consumption

Access to a wide range of fruit and vegetables, and the cost, may make consumption of fruit and vegetables difficult outside Major Cities, particularly as remoteness increases. However, there can also be more opportunities for people to access locally grown produce.

In 2007–08, the fruit and vegetable consumption of people aged 15 years and over who lived outside Major Cities was 55% more likely to meet the Nutrition guidelines than those in Major Cities (see the box 'Nutrition guidelines' for more information on guidelines).

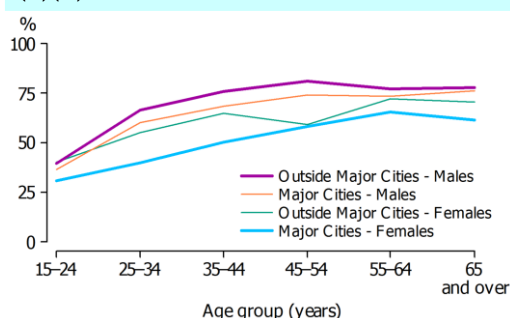
#### Alcohol drinkers at risk of short term harm(a)(b) – 2007-08



- (a) People aged 15 years and over.  
 (b) Risky or high risk drinking in the short term within the last 12 months, based on 2001 NHMRC guidelines.

Source: ABS 2007-08 National Health Survey

#### People who were overweight or obese (a)(b) – 2007-08



- (a) People aged 15 years and over.  
 (b) Based on measured Body Mass Index. Excludes those for whom height or weight were not measured.

Source: ABS 2007-08 National Health Survey

Men who lived outside Major Cities were 59% more likely to eat fruit and vegetables as advised in the guidelines than those in Major Cities. Similarly, women who lived outside Major Cities were more likely to meet the guidelines than those who lived in Major Cities (54% more).

## Mental wellbeing

Mental wellbeing may be measured by the level of psychological distress a person may suffer. The ABS 2007 Survey of Mental Health and Wellbeing found that 8.3% of people aged 16–85 years who lived outside Major Cities had high or very high levels of psychological distress, not significantly different to those living in Major Cities. However, when very high levels of psychological distress are looked at separately, people who lived outside Major Cities were 34% less likely than those who lived in Major Cities to have this level of distress.

While there was no significant difference between men living outside Major Cities and in Major Cities for high or very high levels of psychological distress, men outside Major Cities were half as likely to have very high levels of psychological distress. Women had different results – women who lived outside Major Cities were 22% less likely than those in Major Cities to have high or very high levels of psychological distress, but as likely as women in Major Cities to have very high psychological distress.

### Measures of mental wellbeing outside Major Cities – 2007

	Proportion of people(a) %	Ratio to Major Cities (b)
High or very high psychological distress(c)(d)	8.3	0.84
Very high psychological distress(d)	2.0	0.66
Seriously thought about or planned suicide in lifetime(c)	14.2	1.10
Mental health disorder in lifetime	47.8	1.08
Symptom of mental health disorder in last 12 months(c)	18.6	0.93

(a) People aged 16-85 years.

(b) Based on age standardised rates. This ratio shows how many times more likely it was to have this measure when living outside Major Cities compared with in Major Cities e.g. 1.05 times (5% more likely), or 0.89 times (11% less likely).

(c) Difference in rates between outside Major Cities and in Major Cities is not statistically significant.

(d) Based on Kessler 10 score.

Source: ABS 2007 Survey of Mental Health and Wellbeing

## ...thoughts or plans of suicide

In 2007, 14% of 16–85 year olds who lived outside Major Cities had seriously thought about or planned suicide at some time in their life, and 2.0% had seriously thought about or planned it in the last 12 months. In both cases, this was not significantly different to people who lived in Major Cities. There was no significant difference in the rates for either men or women between the two areas for either time frame.

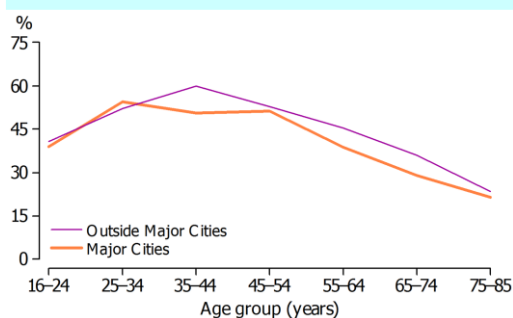
## ...mental disorders

Those aged 16–85 years who lived outside Major Cities in 2007 were no more likely to have had a symptom of a mental disorder in the last 12 months than those who lived in Major Cities. However, those who lived outside Major Cities were slightly (8.0%) more likely to have had a mental disorder at some point in their life.

There was no significant difference between the two areas in the proportion of men who had a mental disorder at some point in their life, or between the women in the two areas. The age group with the largest difference between the two areas was in the 35–44 years age group – six in every ten people (60%) in this age group who lived outside Major Cities had experienced a mental disorder compared with five in every ten people (51%) who lived in Major Cities.

In 2007, people aged 16–85 years who lived outside Major Cities were 25% more likely to have had a substance use disorder in their lifetime compared with people who lived in Major Cities. Men aged 16–85 years who lived outside Major Cities were 28% more likely to have had a substance use disorder, whereas there was no significant difference between areas for women. In both areas, the vast majority of men with a substance use disorder

### People who had a mental health disorder(a) at some point in their life – 2007



(a) Persons who met criteria for diagnosis of a lifetime mental disorder (with hierarchy).

Source: ABS 2007 Survey of Mental Health and Wellbeing



were diagnosed with an alcohol use disorder (96% of those who lived outside Major Cities with a substance use disorder and 92% of those who lived in Major Cities).

In contrast to the ABS 2007–08 National Health Survey, where respondents volunteered whether they currently had a mental or behavioural problem, the ABS 2007 Survey of Mental Health and Wellbeing used an internationally recognised questionnaire to determine whether a person had a mental disorder (of which the person may not have been aware). Consequently, data between the two surveys may not be comparable.

## Mortality

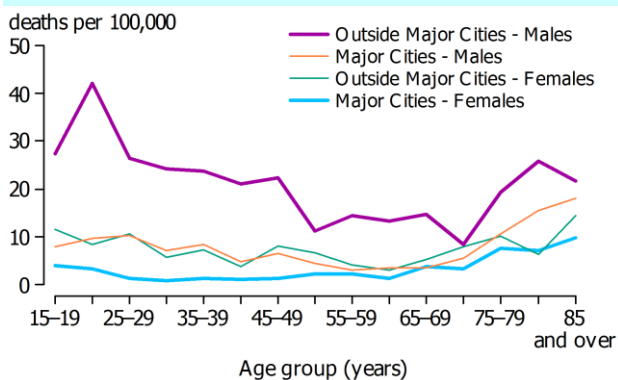
It has been estimated that life expectancy is up to four years lower outside Major Cities than it is in Major Cities.<sup>12</sup> In 2008 it was calculated that the number of deaths for every 100,000 people who usually resided outside Major Cities was 42% higher than those who lived in Major Cities.

### ...heart disease

For people who usually resided outside Major Cities, the cause of death with the highest death rate was ischaemic heart disease, with 144 deaths per 100,000 people. Although this was also the most common cause of death for people who resided in Major Cities, people outside Major Cities were 44% more likely to have died from this disease than those in Major Cities.

Dying from a stroke was the second most common cause of death in those who lived in either area, but was 31% more likely to be a cause of death outside Major Cities. Those who lived outside Major Cities were also nearly twice (1.90 times) as likely to die from hypertensive disease (high blood pressure) and 70% more likely to die from heart failure.

### Death rates(a) from transport accidents – 2008



(a) Causes of death data for 2008 are preliminary and subject to a revisions process. See ABS [Causes of Death, 2008: Technical Note 1](#) (cat. no. 3303.0).

Source: ABS 2008 Causes of Death collection

### Selected causes of death(a) outside Major Cities –2008(b)

Cause of death and ICD-10 Code	Death rate(c)	Ratio to Major Cities (d)
	Per 100,000	
Ischaemic heart diseases (I20-I25)	143.6	1.44
Strokes (I60-I69)	68.2	1.31
Trachea and lung cancer (C33-C34)	48.7	1.36
Dementia and Alzheimer disease (F01-F03)	43.6	1.20
Chronic lower respiratory diseases (J40-J47)	40.8	1.59
Diabetes mellitus (E10-E14)	27.5	1.61
Heart failure (I50-I51)	22.2	1.70
Suicide (X60-X84, Y87.0)	13.6	1.66
Hypertensive diseases(e) (I10-I15)	12.8	1.90
Transport accidents (V01-V99, Y85)	11.7	3.08
<b>Total deaths</b>	<b>870.5</b>	<b>1.42</b>

(a) Top six leading causes of death for those usually residing outside Major Cities, plus other causes which were also a leading cause at the Australian population level and had a high outside Major Cities/Major Cities ratio. 'Transport accidents' is not a leading cause of death at the Australian population level but has been included due to the high outside Major Cities/Major Cities ratio.

(b) Causes of death data for 2008 are preliminary and subject to a revisions process. See ABS [Causes of Death, 2008: Technical Note 1](#) (cat. no. 3303.0).

(c) Crude death rate.

(d) Based on age standardised death rates. This ratio shows how many times more likely it was to have had a particular cause of death when living outside Major Cities compared with in Major Cities e.g. 1.44 times (44%) more likely.

(e) High blood pressure.

Source: ABS 2008 Causes of Death collection

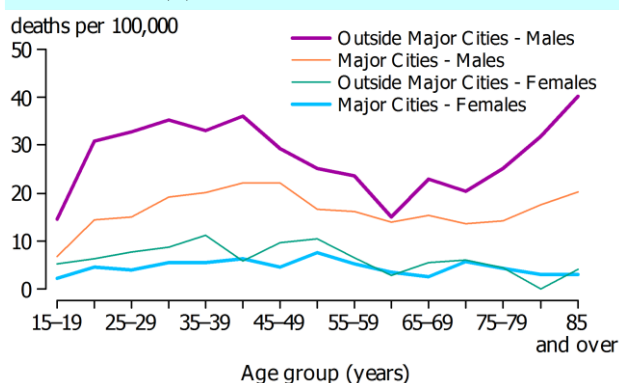
### ...transport accidents

People living outside Major Cities may need to travel long distances, at speeds which are often greater than those used in Major Cities. In addition, road conditions may be worse and, in the event of an accident, possibly have longer retrieval times. These factors expose people living outside Major Cities to greater risks when using transport.<sup>2</sup>

People living outside Major Cities in 2008 were three times (3.08 times) as likely to die because of a transport accident as those living in Major Cities. This was similar for men and women (3.05 times as likely and 3.02 times as likely, respectively).

The difference between the two areas is particularly evident in certain age groups. In 2008, men outside Major Cities aged 20–24 years had a death rate due to transport accidents that was four times as high as those in Major Cities (42 per 100,000 men and 10 per 100,000 men respectively).

## Death rates(a) from suicide – 2008



(a) Causes of death data for 2008 are preliminary and subject to a revisions process. See ABS [Causes of Death, 2008: Technical Note 1](#) (cat. no. 3303.0).

Source: ABS 2008 Causes of Death collection

## ...suicide

In 2008, suicide was ranked the 14<sup>th</sup> highest leading cause of death in Australia, with 78% (1,709) of these deaths related to men.<sup>13</sup>

People living outside Major Cities in 2008 were much more likely to die from suicide than those in Major Cities (66% more likely). Overall, death rates from suicide were higher for men than for women. Men who usually resided outside Major Cities were 68% more likely to have committed suicide than those who lived in Major Cities; the likelihood of women who lived outside Major Cities to have committed suicide in 2008 was 51% higher than for women who lived in Major Cities.

For men aged 15–29 years, the death rate from suicide for those who lived outside Major Cities was twice as high as that in Major Cities. Unemployment, greater availability of lethal means of self-harm, barriers to mental health care services and loneliness are seen as reasons for suicide in this age group.<sup>14</sup>

Men aged 85 years and over who lived outside Major Cities had the highest death rate from suicide (40 deaths per 100,000 men). Changes in economic circumstances leading to financial insecurity and vulnerability, which is known to be a reason for suicide in older age groups,<sup>14</sup> is also likely to affect this age group.

## Looking ahead

The National Healthcare Agreement has stated that all Australians should have timely access to quality health services based on their needs, not ability to pay, regardless of where they live in the country.<sup>15</sup> A variety of programs have been implemented under the National Rural and Remote Health Infrastructure Program with the aim of achieving this and consequently improving the health status of those living outside Major Cities. New developments in

technology will enable the extension of services such as telemedicine and e-Health which will greatly benefit those living outside Major Cities.

## Endnotes

- 1 National Rural Health Alliance Inc. [Fact Sheet 15: Rural Australia](#), May 2009. viewed 7 March 2011. <[nrha.ruralhealth.org.au](#)>.
- 2 Phillips A, 2009, 'Health status differentials across rural and remote Australia', *Aust. J. Rural Health* 17:2–9.
- 3 Australian Institute of Health and Welfare, 2010, [Australia's health 2010](#). Australia's health series no. 12. Cat. no. AUS 122. Canberra: AIHW. p 246. <[www.aihw.gov.au](#)>.
- 4 Australian Bureau of Statistics, 2010, [Regional Population Growth, Australia, 2008–09](#), cat. no. 3218.0 <[www.abs.gov.au](#)>
- 5 Australian Bureau of Statistics, 2009, [Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 1991–2021](#), cat. no. 3238.0 <[www.abs.gov.au](#)>.
- 6 Australian Bureau of Statistics, Dec qtr 2010, '[One for the country: recent trends in fertility](#)', Australian Social Trends, cat. no. 4102.0. <[www.abs.gov.au](#)>.
- 7 Australian Bureau of Statistics, 2007, '[Self-assessed health in Australia: A snapshot, 2004–05](#)', cat. no. 4828.0.55.001. <[www.abs.gov.au](#)>.
- 8 Miller PG, Coomber K, Staiger P, Zinkiewicz L and Toumbourou JW, 2010, '[Review of rural and regional alcohol research in Australia](#)'; *Aust. J. Rural Health*, 18: 110–117.
- 9 Bourke L, Humphreys and Lukaitis F, 2009, '[Health behaviours of young, rural residents: A case study](#)', *Aust. J. Rural Health*, 17: 86–89.
- 10 World Health Organisation, 2011, [Obesity and Overweight, Fact Sheet No. 311](#). Geneva:WHO viewed 7 March 2011. <[www.who.int](#)>.
- 11 National Rural Health Alliance Inc, January 2011, [Fact Sheet 26: Physical Activity in Rural Australia](#). viewed 7 March 2011. <[nrha.ruralhealth.org.au](#)>.
- 12 National Rural Health Alliance Inc, November 2010, [Fact Sheet 23: Measuring the metropolitan-rural inequity](#), viewed 8 March 2011. <[nrha.ruralhealth.org.au](#)>.
- 13 Australian Bureau of Statistics, 2010, [Causes of Death, Australia, 2008](#), cat. no. 3303.0. <[www.abs.gov.au](#)>.
- 14 National Rural Health Alliance Inc, May 2009, [Fact Sheet 14: Suicide in rural Australia](#), viewed 7 March 2011. <[nrha.ruralhealth.org.au](#)>.
- 15 Ministerial Council for Federal Financial Relations, [National Healthcare Agreement](#), viewed 16 March 2011. <[www.federalfinancialrelations.gov.au](#)>.

# Year 12 attainment

Within Australia, Year 12 attainment is regarded as a key factor in the formal development of an individual's skills and knowledge. Those with Year 12 have a greater likelihood of continuing with further study, particularly in higher education, as well as entering into the workforce. Year 12 attainment contributes to the development of a skilled workforce, and in turn, to ongoing economic development and improved living conditions. The Council of Australian Governments' *National Education Agreement (2009)* aims to lift the Year 12 or equivalent attainment rate for 20–24 year olds to 90% by 2015.<sup>1</sup>

The first half of this article looks at recent trends in Year 12 attainment for young adults (aged 20–24 years), while the second half examines the influence of Year 12 on further education, income and employment outcomes across the life course.

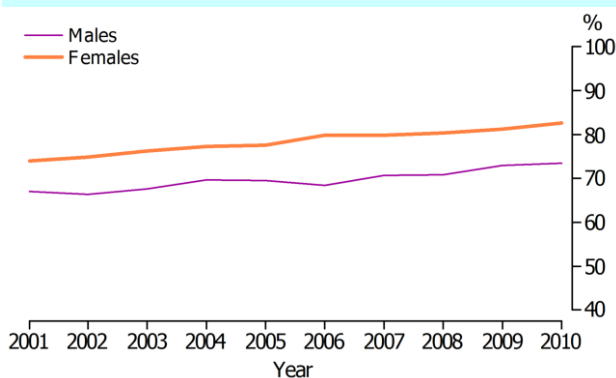
## Who attains Year 12?

In 2010, around 1.2 million young adults (aged 20–24 years) had attained Year 12. Over the past decade the proportion of 20–24 year olds with Year 12 has gradually increased, rising from 71% in 2001 to 78% in 2010.

### ...sex

Over the past decade young women (aged 20–24 years) have been consistently more likely than young men to have attained Year 12, although both have experienced increases at much the same rate. In 2001, around two-thirds of young men (67%) and three-quarters of young women (74%) had attained Year 12. By 2010, this had increased to 73% of young men

Proportion of 20–24 year olds with Year 12 – 2001–2010



Source: ABS 2001 Transition from Education to Work Survey; 2002–2010 Surveys of Education and Work

## Data sources and definitions

Data in this article come mainly from the ABS Surveys of Education and Work, the ABS 2009 Survey of Education and Training, and the ABS National Aboriginal and Torres Strait Islander Social Survey.

*Year 12* marks the completion of the Senior Secondary Certificate of Education. Entry to this level is usually the completion of Year 11 or equivalent and the duration is usually one year of full-time study.

*Non-school qualifications* refer to qualifications at the Postgraduate degree level, Master degree level, Graduate diploma and Graduate certificate level, Bachelor degree level, Advanced diploma and Diploma level and Certificates I, II, III, IV level and certificate not further defined.

and 83% of young women. The difference between the rates for young men and women may reflect the better opportunities that exist for young men to access full-time work.<sup>2</sup>

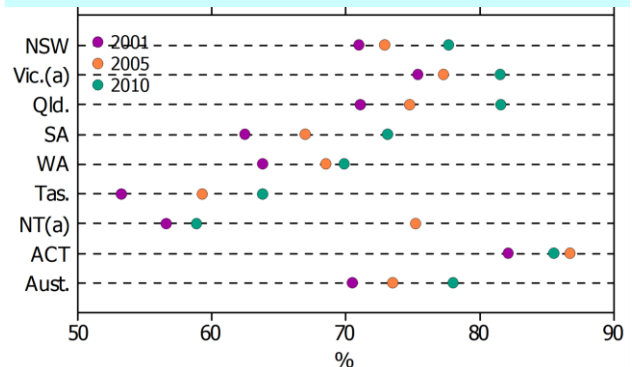
## ...where people live

In 2010, young adults (20–24 years) were more likely to have attained Year 12 if they lived in Major Cities (81%) compared with Inner or Outer Regional Areas (67%) and Remote or Very Remote Areas (64%).

Between 2001 and 2010, the proportion of 20–24 year olds with Year 12 increased in most states and territories. Queensland, South Australia and Tasmania had the largest increases (between 10 to 11 percentage points).

Over this period, there was also considerable variation between the proportions of 20–24 year olds with Year 12 across the states

Proportion of 20–24 year olds with Year 12 by states and territories – 2001, 2005 and 2010



(a) Difference between 2001 and 2010 is not statistically significant.

Source: ABS 2001 Transition from Education to Work Survey; 2005 and 2010 Surveys of Education and Work

## Indigenous Australians

Aboriginal and Torres Strait Islander Australians have far lower rates of Year 12 attainment than non-Indigenous Australians. COAG's [National Indigenous Reform Agreement](#) aims to halve the gap for Indigenous students in Year 12 and equivalent attainment by 2020.

In 2008, around one-third (31%) of young Indigenous people (20–24 years) had attained Year 12 compared with over three-quarters of non-Indigenous 20–24 year olds (76%). Between 2002 and 2008, there was a small, but not statistically significant, increase in the proportions of Indigenous people aged 20–24 years with Year 12 (from 28% to 31%).<sup>3</sup>

For more information on Indigenous people and education, see [Education and Indigenous Wellbeing](#) in Australian Social Trends March 2011 (cat. no. 4102.0) and ABS [National Aboriginal and Torres Strait Islander Social Survey, 2008](#) (cat. no. 4714.0).

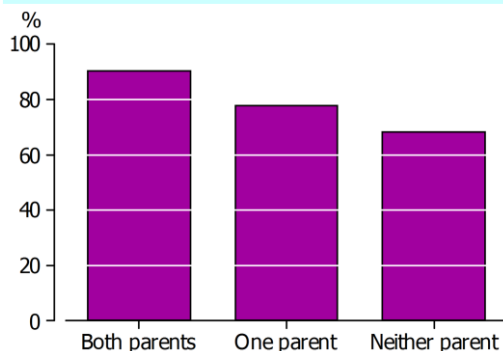
and territories. For example, in 2010 the proportion of people (20–24 years) with Year 12 ranged from 59% in the Northern Territory to 86% in the Australian Capital Territory.

However, state and regional differences are related to a number of factors. In particular, once young adults (20–24 years) have attained Year 12 they may move interstate or across urban, regional and remote areas to pursue employment opportunities or post school education.

## ...parental characteristics

Parental characteristics can be influential on the educational outcomes of their children. In 2009, data from the Survey of Education and Training showed that people aged 20–24 years (who knew what year of secondary school their mother and father had completed), were more likely to have attained Year 12 if both their parents/guardians had attained Year 12 (90%), compared with one or neither parent/guardian having attained Year 12 (78% and 68% respectively).

## Proportion of 20-24 year olds with Year 12 by whether parent(a) had Year 12 – 2009



(a) Parent also includes guardian.

Source: ABS 2009 Survey of Education and Training

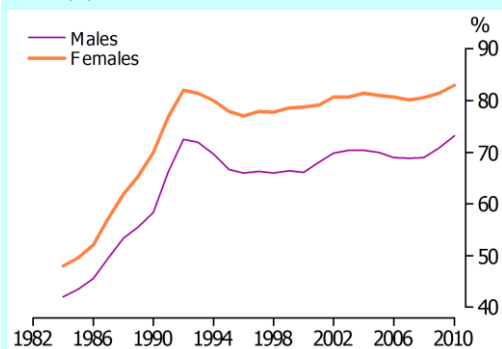
## Apparent retention rate

The apparent retention rate is an alternative way to measure the proportion of Australian students continuing their secondary school education. It is calculated by dividing the number of full-time students in Year 12 by the number of full-time students in the base year and converting the figure into a percentage. The base year is Year 7 in New South Wales, Victoria, Tasmania and the Australian Capital Territory and Year 8 in Queensland, South Australia, Western Australia and the Northern Territory.

Between 1984 and 1992, the proportion of students continuing through to Year 12 markedly increased (rising from 45% to a peak of 77%). This reflects the growing importance of educational qualifications for employment outcomes over this time. Since decreasing slightly in the early nineties, the apparent retention rate remained relatively stable (at around 75%) from 2002 to 2008, before rising to 78% in 2010.

Since 1984, female students have been more likely to continue through to Year 12 than male students. In 2010, the Year 12 apparent retention rate for female students was 83% compared with 73% for male students.

## Year 7/8 to Year 12 apparent retention rate(a) – 1984-2010



(a) Refers to full-time students only.

Source: ABS [Schools, Australia](#), 1984-2010 (cat. no. 4221.0)

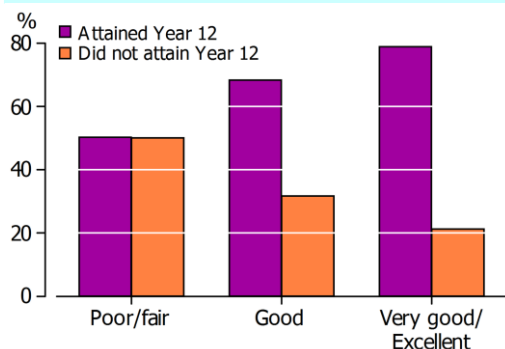
## ...disability

Health conditions and disability may impact on schooling and the attainment of Year 12. In 2009, around one-fifth (22%) of all 20–24 year olds had a disability or were restricted by a long term health condition (for example, asthma or a mental health condition). Of these, around three-fifths (62%) had attained Year 12 compared with almost four-fifths (78%) of those who did not have a disability or a restrictive long term health condition. Those who had a profound or severe disability were far less likely to have attained Year 12 (46%) than those who had a moderate or mild disability (73%).

Of the 305,900 young adults (20–24 years) who had a disability or a restrictive long term health condition, almost one-quarter (76,200 people) were categorised as having an education restriction (for example, needing time off from regular classes or requiring special tuition). Of this group only around a half (53%) had attained Year 12.



### Level of self-assessed health status by Year 12 attainment for 20-24 year olds – 2009



Source: ABS 2009 Survey of Education and Training

### ...health

Self-assessed health is a good indicator of the overall health of a population, providing some insight into how a person perceives their own health at a given point in time. Those with poor self-assessed health were less likely to have attained Year 12 than those with better self-assessed health.

In 2009, the proportion of 20–24 year olds with Year 12 increased as the level of self-assessed health improved. For example, only one-half (50%) of those who rated their health as poor or fair had attained Year 12, compared with almost four-fifths (79%) who rated their health as very good or excellent.

### Pathways after Year 12

Year 12 attainment is recognised as providing pathways into further education and into the workforce. The following analysis examines the influence of Year 12 on the enrolment in further study by young people, as well as outcomes in education, employment and income through the life course.

### ...non-school qualifications

In 2010, young adults who had attained Year 12 were both more likely to be studying for, and to have attained, a non-school qualification than those who had not.

Almost one-half (46%) of young adults (20–24 years) with Year 12 were enrolled in study for a non-school qualification at the time of the survey. This was over two and a half times the rate for those without Year 12 (17%).

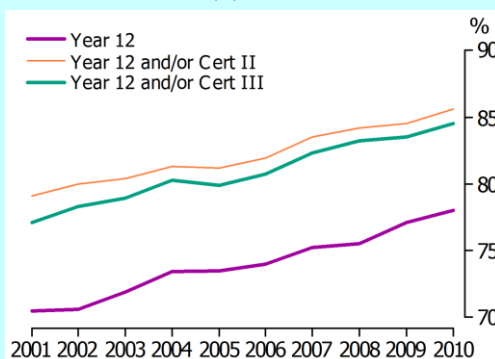
Across selected age groups between 20–64 years, people with Year 12 were more likely to have completed a non-school qualification than those without Year 12. The gap was narrowest for 20–24 year olds (46% compared with 38%) and greatest for 55–64 year olds (73% compared with 38%).

### Council of Australian Governments (COAG)

COAG's *National Education Agreement (2009)* places considerable importance on Year 12 education and aims to lift the proportion of 20–24 year olds with Year 12 or a Certificate II to 90% by 2015. The COAG attainment target for 2020 has since been amended to measure those with Year 12 or a Certificate III. Certificate III is recognised as the international standard of equivalence of upper secondary education.<sup>4</sup>

Between 2001 and 2010, the proportion of 20–24 year olds who had attained Year 12 or a Certificate II increased from 79% to 86%. Similarly, the proportion of 20–24 year olds who had attained Year 12 or a Certificate III increased from 77% to 85%.

### Proportion of 20-24 year olds who had attained Year 12 and/or a Certificate II or Certificate III(a) – 2001-2010

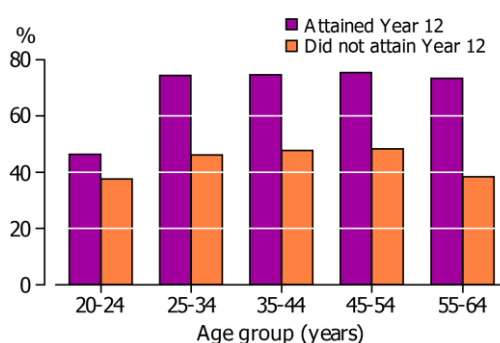


(a) And/or above.

Source: ABS 2001 Transition from Education to Work Survey; 2002-2010 Surveys of Education and Work; ABS *Education and Work, Australia, May 2010* (cat. no. 6227.0)

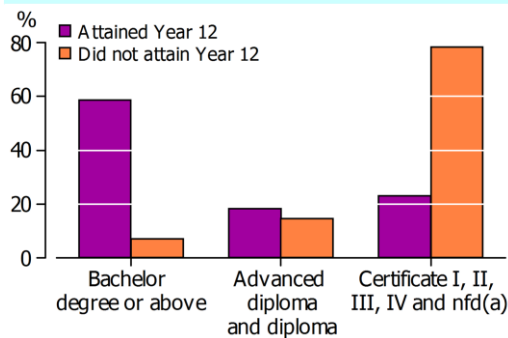
For all 20–64 year olds with a non-school qualification, the level of attainment was likely to be higher if they had completed Year 12 than if they had not. Of the 5.5 million 20–64 year olds with Year 12 and a non-school qualification, most (59%) had attained a Bachelor degree or above, followed by a Certificate I, II, III or IV (23%) and an Advanced

### Proportion of people in selected age groups with a non-school qualification by Year 12 attainment – 2010



Source: ABS 2010 Survey of Education and Work

### 20-64 year olds with a non-school qualification: level of highest non-school qualification by Year 12 attainment – 2010



(a) Certificate not further defined.

Source: ABS 2010 Survey of Education and Work

diploma or diploma (18%). For those who had not attained Year 12 and had attained a non-school qualification, over three-quarters (78%) had attained a Certificate I, II, III or IV.

### ...apprenticeships

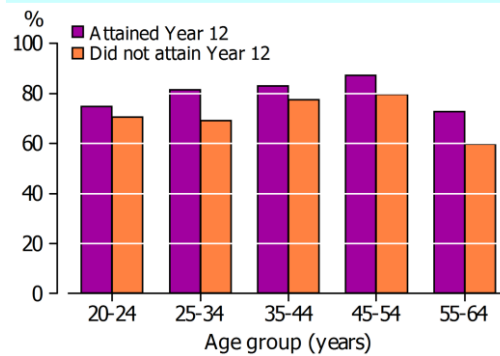
Traditionally, apprenticeships and traineeships have offered alternative training-employment pathways for students who have not attained Year 12, particularly for young men. However, most recently the majority of young people employed as apprentices have attained Year 12.

In 2010, there were around 72,000 employed 20–24 year olds who were trainees or apprentices, with males comprising the majority of this group (88%). Two-thirds (66%) of these trainees or apprentices had attained Year 12.

### ...employment

In 2010, people aged 20–64 years were more likely to be employed if they had attained Year 12 than

### Proportion of people who were employed by Year 12 attainment and age – 2010



Source: ABS 2010 Survey of Education and Work

those who had not (81% compared with 72%). The greater likelihood of those with Year 12 being employed was maintained throughout most of the life course. In particular, the gap widened for those aged 25–34 years (82% compared with 69%) and for those aged 55–64 years (73% compared with 60%).

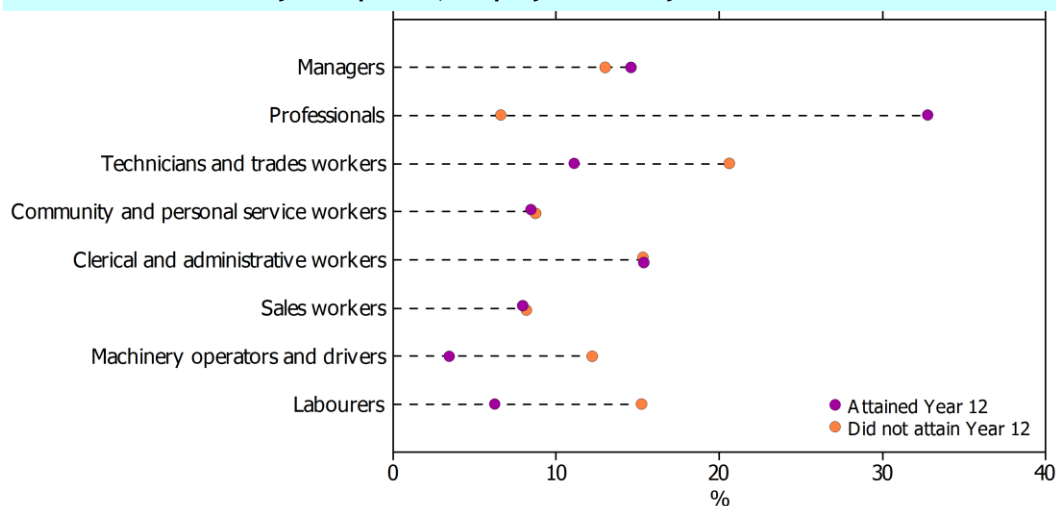
For more information on young people's engagement in education and work see [Are young people learning or earning?](#) in Australian Social Trends March 2010 (cat. no. 4102.0).

### ...occupation

People who had attained Year 12 were more likely to be working in traditional 'white collar' jobs than those who had not.

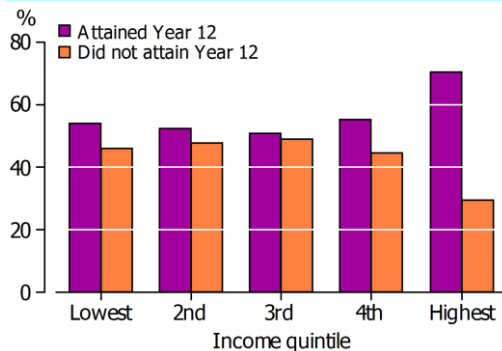
In 2010, the most common occupations amongst 20–64 year olds who were employed and had attained Year 12 were Professionals (33%), Clerical and administrative workers, and Managers (both 15%). In comparison, the most common occupations for those who were employed and had not attained Year 12 were

### Year 12 attainment by occupation, employed 20-64 year olds – 2010



Source: ABS 2010 Survey of Education and Work

## Personal gross weekly income from all sources for 20-64 year olds by Year 12 attainment(a)(b) – 2009



(a) Restricted to 20-64 year olds who are in the labour force.

(b) Due to a number of reasons (including the possession of assets or underreporting) people in the lowest income decile may not necessarily be experiencing economic hardship. Please see the Explanatory Notes in [Household Income and Income Distribution](#) (cat. no. 6523.0) for further information.

Source: ABS 2009 Survey of Education and Training

Technicians and trades workers (21%), Labourers, and Clerical and administrative workers (both 15%), while just 7% were Professionals.

### ...income

This analysis examines the distribution of personal gross weekly income (from all sources) between those with and without Year 12 across income quintiles and is restricted to those in the labour force. A quintile is derived by ranking all the population from lowest to highest income and then dividing that population into five equal groups. The lowest quintile is made up of the 20% of the population with the lowest income.

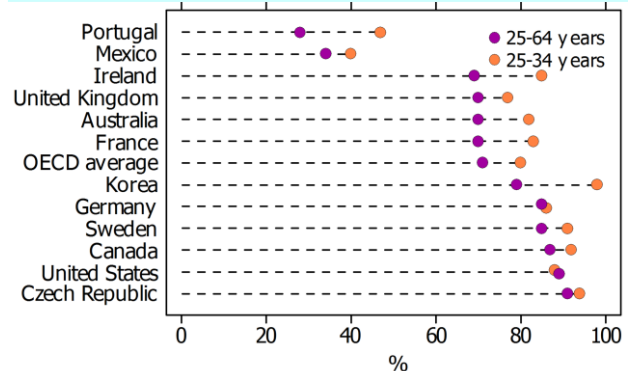
In 2009, people aged 20–64 years who had personal gross weekly income in the highest quintile were far more likely to have attained Year 12 (70%) than those who had not (30%). However, while people were still more likely to have Year 12 across the other four quintiles of the income distribution, the differences were far less pronounced.

### International comparisons

The world's education systems vary widely in terms of structure and curricular content. In this section, the analysis focuses on those with at least upper secondary education ([International Standard Classification of Education level 3](#)), which corresponds to the final stage of secondary education in most OECD countries.<sup>5</sup> In Australia, this equates to those with at least Year 12 and/or a Certificate III.

In 2008, the proportion of 25–64 year olds with at least upper secondary education varied greatly across OECD countries. The proportion ranged

## Proportion of people with at least upper secondary education(a) by country and age – 2008



(a) Upper secondary education refers to ISCED3 and corresponds to the final stage of secondary education in most OECD countries.

Source: OECD September 2010, [Education at a Glance 2010, OECD Indicators](#), <[www.oecd.com](http://www.oecd.com)>

from under three-tenths (28%) in Portugal to over nine-tenths (91%) in the Czech Republic. In Australia, 70% of 25–64 year olds had at least upper secondary education, similar to the OECD average (71%), France (70%), the United Kingdom (70%) and New Zealand (72%).

Most countries had a larger proportion of 25–34 year olds with at least upper secondary education compared with older age groups. For example, in 2008 the OECD average of people aged 25–34 years with at least upper secondary education was 80% compared with 58% of 55–64 year olds. In Australia, over four-fifths (82%) of 25–34 year olds had at least upper secondary education compared with 55% of 55–64 year olds. This may reflect an internationally growing priority being given to educational attainment for improved employment outcomes and further education opportunities, as well as people's growing aspirations for higher education for their children.

### Endnotes

- Under the original COAG agreement, the target was to be reached by 2020, this was later amended to 2015 in the [Compact with Young Australians](#). Australian Government, 30 April 2009, [Compact with Young Australians: Increasing educational attainment of young people aged 15-24](#), Commonwealth of Australia, Canberra, <[www.coag.gov.au](http://www.coag.gov.au)>.
- Foundation for Young Australians, 2009, [How Young People are Faring 2009](#), Foundation of Young Australians, Melbourne, p. 5, <[www.fya.org.au](http://www.fya.org.au)>.
- Data in this section is derived from the ABS 2008 National Aboriginal and Torres Strait Islander Social Survey for the Indigenous population and the ABS 2008 Survey of Education and Work for non-Indigenous people.
- COAG Reform Council, 2009, [National Education Agreement: Performance report for 2009](#), Chapter 8: COAG Targets, p.99–100, Commonwealth of Australia, <[www.coag.gov.au](http://www.coag.gov.au)>.
- Organisation for Economic Development and Cooperation (OECD), 2010, [Education at a Glance 2010: OECD Indicators, Glossary](#), OECD, France, <[www.oecd.org](http://www.oecd.org)>.

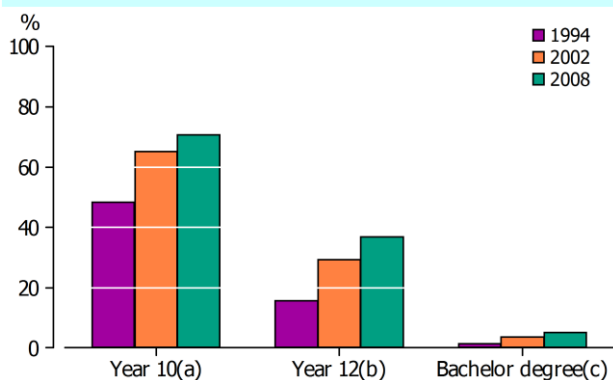
# Education and Indigenous wellbeing

Educational attainment has long been recognised as being correlated with a range of indicators of social wellbeing. As a result of this, education has been a major focus in the strategy to ‘close the gap’ between the Australian Aboriginal and Torres Strait Islander and non-Indigenous populations.

Improving educational attainment, particularly at Year 12 or equivalent level is a priority across both the Council of Australian Governments’ (COAG) *National Education Agreement* and *National Indigenous Reform Agreement*.<sup>1,2</sup> The *National Education Agreement* includes targets to increase to 90% the proportion of all young people with Year 12 or a Certificate level II by 2015, and by 2020, for 90% of young people to achieve Year 12 or a Certificate level III.<sup>2</sup> Both agreements include a performance target to halve the gap between Indigenous and non-Indigenous students in Year 12 or Certificate II level by 2020.<sup>1,2</sup> There is an expectation that this will in turn lead to better employment and health outcomes for the Aboriginal and Torres Strait Islander population.

This article explores the relationship between education and aspects of Aboriginal and Torres Strait Islander wellbeing. It examines how educational attainment is associated with health, employment, housing and crime and justice, and explores differences between outcomes for Indigenous and non-Indigenous Australians across different levels of attainment.

## Minimum educational attainment achieved, Indigenous persons 18 years and over – 1994, 2002 and 2008



(a) Includes Year 10/11 and basic vocational qualifications.

(b) Includes Year 12 and skilled vocational qualifications.

(c) 1994 estimate for Bachelor degree has a relative standard error of 25% to 50% and should be used with caution.

Sources: ABS 1994 National Aboriginal and Torres Strait Islander Survey and 2002 and 2008 National Aboriginal and Torres Strait Islander Social Surveys

## Data sources and education measures

Information in this article relates to persons 18 years and over and is from the ABS 2002 and 2008 National Aboriginal and Torres Strait Islander Social Surveys (NATSISS), the 1994 National Aboriginal and Torres Strait Islander Survey (NATSIS), the 2004–05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS), the 2004–05 and 2007–08 National Health Surveys (NHS), and the 2008 Survey of Education and Work (SEW).

*Educational attainment* data presented in this article includes both primary and secondary school, and non-school qualifications. Two measures are used: *Minimum educational attainment*, which is a measure of all people achieving given levels of attainment; and *Highest educational attainment*, which groups people according to their highest level of attainment.

*Minimum attainment* is used in trends analysis to examine education attainment over time and across Indigenous and non-Indigenous populations. This approach aligns with the COAG education targets which aim to increase minimum levels of skills required for a 21<sup>st</sup> century labour market.<sup>3</sup> *Highest attainment* is used to explore the association between different levels of attainment and aspects of wellbeing.

Both measures distinguish between the following groups:

- *Bachelor degree or above* includes bachelor degrees, graduate diplomas, graduate certificates, and postgraduate degrees.
- *Year 12 or skilled vocational qualifications* includes Year 12, certificate III and IV, diplomas and advanced diplomas.
- *Year 10/11 or basic vocational qualifications* includes Year 10 and 11, certificates I and II, and certificate level not further defined.
- *Below Year 10* includes Year 9 and below.

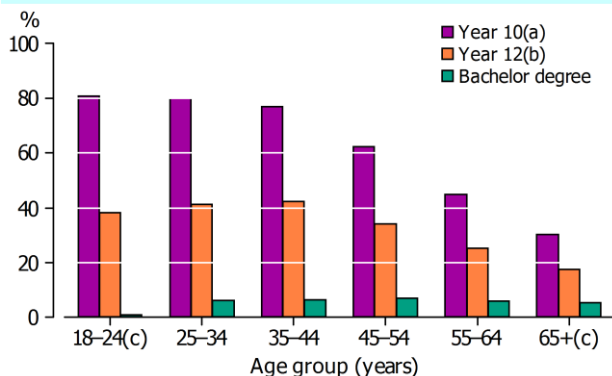
For further information see the [Australian Qualification Framework, 2010](#).<sup>4</sup>

## Trends in Indigenous educational attainment

Educational attainment for Aboriginal and Torres Strait Islander Australians has increased appreciably since the mid-1990s. In 2008, 37% of Aboriginal and Torres Strait Islander people aged 18 years and over (adults) had attained a minimum of Year 12 or a skilled vocational qualification, more than double the rate in 1994 (16%). Over the same time period, those completing a minimum of Year 10 or basic vocational qualifications increased from 48% to 71%. While relatively few Aboriginal and Torres Strait Islander adults continued on to complete



### Minimum educational attainment achieved, Indigenous persons by age – 2008



- (a) Includes Year 10/11 and basic vocational qualifications.
- (b) Includes Year 12 and skilled vocational qualifications.
- (c) Estimate for Bachelor degree has a relative standard error of 25% to 50% and should be used with caution.

Source: ABS 2008 National Aboriginal and Torres Strait Islander Social Survey

a Bachelor degree or above, the rate has increased to 5% in 2008.

In 2008, younger Aboriginal and Torres Strait Islander adults were more likely to have completed both Year 10 and Year 12 than older adults. However for higher levels of attainment there were similar rates across all age groups.

The proportion of adults completing at least Year 10 (or basic vocational qualifications) ranged from 81% for those aged 18–24 years, to 30% for those 65 years and over. Similarly, for those completing at least Year 12 (or skilled vocational qualifications), the rates ranged from around 40% for those aged 18–24 years, 25–34 years and 35–44 years to 17% for those 65 years and above.

While increases in educational attainment to at least Year 10 and Year 12 (and their vocational equivalent) appear to result from higher levels of participation in education among young people, attainment of Bachelor degrees and above is similar for all age groups except those aged 18–24 years. This may reflect a pattern to study and complete university qualifications at

### Highest educational attainment, by remoteness, Indigenous persons 18 years and over – 2008

	Major Cities (%)	Regional Areas (%)	Remote Areas (%)
Bachelor degree or above	8.7	4.0	2.7
Year 12 or skilled vocational	39.8	32.0	21.2
Year 10/11 or basic vocational	30.4	33.7	38.3
Below Year 10	17.8	27.6	35.3
Total	100.0	100.0	100.0

Source: ABS 2008 National Aboriginal and Torres Strait Islander Social Survey

### Remoteness Areas

**Remoteness Area (RA)** is a structure of the Australian Standard Geographic Classification (ASGC). It classifies areas sharing common characteristics of remoteness (including access to services) into six broad geographical regions (Remoteness Areas). The remoteness of a point is measured by its physical distance by road to the nearest urban centre. As remoteness is measured nationally, not all Remoteness Areas are represented in each state or territory. In this article the six Remoteness Areas have been collapsed into three levels:

- Major Cities (of Australia).
- Regional Areas (Inner Regional Australia plus Outer Regional Australia).
- Remote Areas (Remote Australia plus Very Remote Australia plus Migratory).

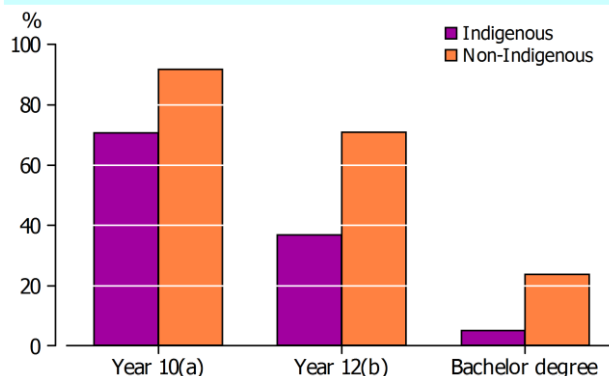
For further information about Remoteness Areas see Chapter 8 of ABS [Australian Standard Geographical Classification \(ASGS\), July 2010](#) (cat. no. 1216.0).

older ages, rather than immediately following completion of Year 12.<sup>5</sup>

Attainment of higher levels of education was more common among adults living in Major Cities than those living in Regional and Remote Areas. In 2008, for example, adults living in Major Cities were three times as likely to have attained a Bachelor degree or above (9%) as those living in Remote Areas (3%). This may be due to lack of access to higher education in Remote Areas, as well as movement away from Remote Areas for greater education and work opportunities.

Despite gains in Aboriginal and Torres Strait Islander education over recent years, a large gap remains between Indigenous and non-Indigenous outcomes, particularly at higher levels of attainment. In 2008, non-Indigenous adults were more likely to have attained at least

### Minimum educational attainment achieved, persons 18 years and over by Indigenous status – 2008

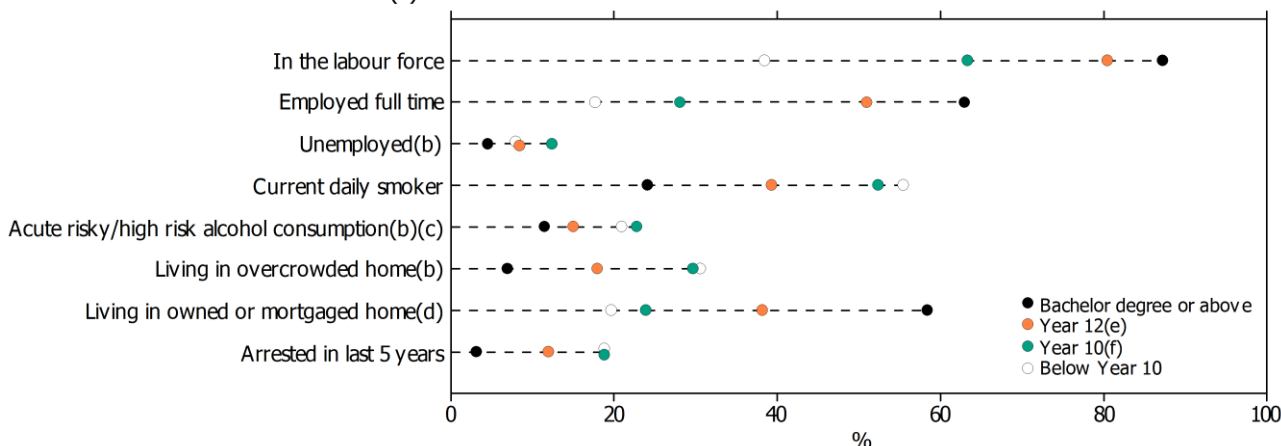


- (a) Includes Year 10/11 and basic vocational qualifications.
- (b) Includes Year 12 and skilled vocational qualifications.

Sources: ABS 2008 National Aboriginal and Torres Strait Islander Social Survey and 2008 Survey of Education and Work

## Highest educational attainment achieved, Indigenous persons 18 years and over – 2008

SELECTED INDICATORS OF WELLBEING(a)



(a) For definitions of 'In the labour force', 'Employed full time', 'Unemployed', 'Current daily smoker', 'Living in overcrowded home', 'Living in owned or mortgaged home', and 'Arrested in last 5 years' see ABS [National Aboriginal and Torres Strait Islander Social Survey: Users' Guide, 2008](#) (cat. no. 4720.0). For Acute risky/high risk alcohol consumption see ABS [National Aboriginal and Torres Strait Islander Health Survey: Users' Guide, 2004-05](#) (cat. no. 4715.0.55.004).

(b) Estimate for Bachelor degree has a relative standard error of 25% to 50% and should be used with caution.

(c) Acute risky/high risk alcohol consumption data is based on National Health and Medical Research Council guidelines for risk of harm in the short-term for 2004-05.

(d) Includes persons living in homes that are owned with or without a mortgage, or via a rent/buy scheme, by someone in the household.

(e) Includes Year 12 and skilled vocational qualifications.

(f) Includes Year 10/11 and basic vocational qualifications.

Sources: ABS 2008 National Aboriginal and Torres Strait Islander Social Survey and 2004-05 National Aboriginal and Torres Strait Islander Health Survey

Year 10 or basic vocational qualifications (92%) than Aboriginal and Torres Strait Islander adults (71%), and were over four times as likely to have attained a Bachelor degree or higher (24% compared with 5%).

### Why does education matter?

Education has been shown as being correlated with numerous measures of wellbeing including economic participation, income, health outcomes and determinants such as health risk behaviours and preventative service use, as well as other aspects of wellbeing including social participation and crime and justice.<sup>6-11</sup>

The following analysis examines the association between education and selected indicators of wellbeing. Areas of wellbeing examined include employment, health risk behaviours and housing.

Those with higher levels of educational attainment were more likely to be in the labour force and employed full time than those with lower levels of educational attainment. For example, full-time employment rates increased from 18% for Aboriginal and Torres Strait Islander adults with below Year 10 attainment, to 51% for those with Year 12 or a skilled vocational qualification, and 63% for those with a Bachelor degree or higher.

The likelihood of engaging in selected health risk behaviours, including smoking and acute risky/high risk alcohol consumption (binge

### Examining the links between education and wellbeing

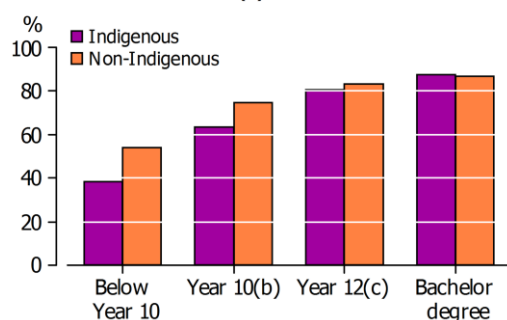
In examining the link between education and socio-economic and health outcomes, it is important to note that the relationships can be complex and it is difficult to infer causal associations from household surveys. For example, a correlation between higher levels of education and better health outcomes could point to any of the following:

- There may be an indirect causal relationship between the two factors, e.g. higher education may lead to improved employment and higher levels of income, which in turn leads to better access to health services.
- The causal relationship may run in both directions, e.g. higher education may lead to improved health outcomes as described above, but poor health may also contribute to poor educational outcomes, further reinforcing health risks.
- Both factors may be caused by a third factor, e.g. people may live in areas with limited access to both high quality educational and health facilities. Equally, age may be a confounding factor, with younger people more likely to have higher levels of educational attainment, and to be in good health.
- The relationship may be the result of a complex interaction of many factors such as housing, income and access to services, making it difficult to disentangle direct causal relationships.

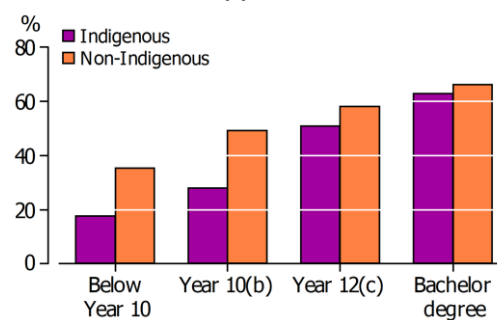
So while the analysis presented in this article can provide some insights into the associations between education and other aspects of wellbeing, it cannot determine the causal pathways between them.

## Selected employment outcomes by highest educational attainment, persons 18 years and over – 2008

IN THE LABOUR FORCE(a)



EMPLOYED FULL TIME(a)



(a) For definitions of 'In the labour force' and 'Employed full time' see ABS [National Aboriginal and Torres Strait Islander Social Survey: Users' Guide, 2008](#) (cat. no. 4720.0).

(b) Includes Year 10/11 and basic vocational qualifications.

(c) Includes Year 12 and skilled vocational qualifications.

Sources: ABS 2008 National Aboriginal and Torres Strait Islander Social Survey and 2008 Survey of Education and Work

drinking) decreased with higher levels of attainment. For example, those with Bachelor degrees or above were nearly half as likely to be current daily smokers (24%) as those with Year 9 or below (55%).

People with higher levels of education were less likely to live in overcrowded dwellings, and more likely to live in a dwelling owned (with or without a mortgage) by someone in the household, than those with lower levels of education.

Education is also associated with crime and justice outcomes. People with higher levels of educational attainment are less likely to have been arrested in the last five years than those with lower levels of educational attainment.

While the association between educational attainment and wellbeing was observed across Remoteness Areas for all indicators examined, there appeared to be a stronger association between educational attainment and wellbeing for people living in Major Cities and Regional Areas than for those living in Remote Areas. The observed differences between people living in Major Cities and those outside Major Cities may be influenced by factors associated with remoteness, such as service provision and access.

### Closing gaps through education?

Health, employment and housing outcomes are associated with educational outcomes for both Aboriginal and Torres Strait Islander and non-Indigenous populations. The following analysis explores the relative association between educational attainment and Indigenous and non-Indigenous outcomes across health, employment and housing, and examines how differences in outcomes might be associated with differences in education. While the analysis provides insight into these

associations, due to the complexity of the relationship between education and socioeconomic and health outcomes, it cannot determine causal pathways between them.

### ...in employment

The rate of full-time employment more than tripled for Indigenous adults, from 18% for those with below Year 10 attainment, to 63% for those with Bachelor degree or above.

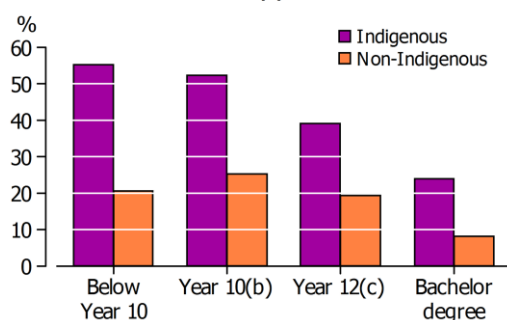
While a similar association was observed between educational attainment and full-time employment for the non-Indigenous population it was not as strong. For example, the full-time employment rate for non-Indigenous adults with a Bachelor degree or above (66%) was nearly twice as high as the rate for those with below Year 10 attainment (35%).

Reflecting these results, differences in labour market outcomes across the two populations reduce with higher levels of educational attainment. While nationally, Indigenous adults are around half as likely to be in full-time employment as non-Indigenous adults, as educational attainment increases, the difference between the employment outcomes reduces. Indigenous adults with a Bachelor degree or above are equally likely as non-Indigenous adults with the same attainment to be working full time and to be participating in the labour force.

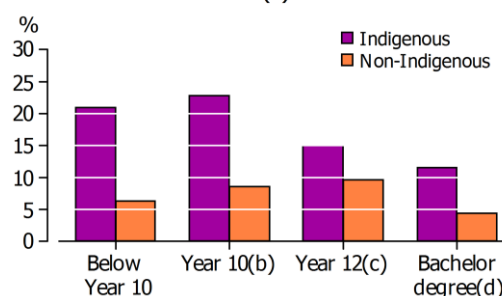
When outcomes for unemployment were examined, the relative improvement was not observed to the same extent across levels of educational attainment. Nationally, Indigenous adults experienced an unemployment rate (15.1%) that was four times as high as non-Indigenous adults (3.8%) in 2008. However, among adults with Year 12 or equivalent attainment, the unemployment rate for Indigenous adults (10.4%) was still more than

## Selected health risk behaviours by highest educational attainment, persons 18 years and over

CURRENT DAILY SMOKER(a)—2008



ACUTE RISKY/HIGH RISK ALCOHOL CONSUMPTION(a)—2004-05



(a) For the definitions of 'Current daily smoker' see ABS [National Aboriginal and Torres Strait Islander Social Survey: Users' Guide, 2008](#) (cat. no. 4720.0). For Acute risky/high risk alcohol consumption see ABS [National Aboriginal and Torres Strait Islander Health Survey: Users' Guide, 2004-05](#) (cat. no. 4715.0.55.004).

(b) Includes Year 10/11 and basic vocational qualifications.

(c) Includes Year 12 and skilled vocational qualifications.

(d) Estimate for Bachelor degree has a relative standard error of 25% to 50% and should be used with caution.

Sources: ABS 2004-05 National Aboriginal and Torres Strait Islander Health Survey, 2004-05 and 2007-08 National Health Survey, and 2008 National Aboriginal and Torres Strait Islander Social Survey

two and a half times that of non-Indigenous adults (3.6%).

These results indicate that while education may be associated with improved labour market outcomes, it does not entirely bridge gaps in labour market outcomes between Indigenous and non-Indigenous Australians. In addition to the influence of education, the availability of job and work opportunities by location is also likely to be influencing differences. In particular, there are fewer job opportunities in Remote Areas, where many Indigenous people live, compared with those available in Regional Areas and Major Cities.

### ...in health risk behaviours

While health risk behaviours are associated with educational outcomes for both the Aboriginal and Torres Strait Islander and non-Indigenous populations, differences in rates of smoking and binge drinking between the two populations do not vary greatly across educational attainment.

#### Health data definitions

**Acute risky/high risk alcohol consumption (binge drinking)** — based on the frequency of consuming five or more (for females) or seven or more (for males) standard drinks on any one occasion in the 12 months prior to interview. These risks were based on NHMRC guidelines for risk of harm in the short term that were in place at the time of the 2004-05 NATSIHS and NHS surveys. For more information see ABS [National Aboriginal and Torres Strait Islander Health Survey: Users' Guide, 2004-05](#) (cat. no. 4715.0.55.004).

**Current daily smokers** — people smoking one or more cigarettes (or cigars or pipes) per day, at the time of the interview.

For both Indigenous and non-Indigenous adults, lower rates of current daily smoking are associated with higher rates of educational attainment. However, the rates of smoking remain approximately twice as high among Indigenous adults as non-Indigenous adults across all levels of education.

For Indigenous adults, lower rates of acute risky/high risk alcohol consumption (binge drinking) are associated with higher rates of educational attainment. For non-Indigenous adults the pattern appears largely reversed with higher rates of binge drinking associated with higher levels of attainment through to Year 12, and then reduced rates associated with Bachelor degrees and above. Despite the different patterns of association between education and binge drinking across the two populations, the rates of binge drinking for Indigenous adults remain well above those for non-Indigenous adults across all levels of educational attainment.

These results indicate that while there is an association between education and health risk behaviours, higher rates of risky health behaviours among Indigenous adults may also be attributable to a range of other factors, rather than directly with education.

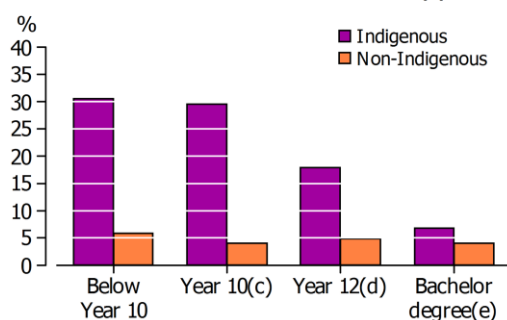
### ...in housing

Housing outcomes are also associated with education for both the Aboriginal and Torres Strait Islander and non-Indigenous populations. Higher levels of Indigenous household ownership and lower levels of overcrowding appear to be strongly associated with higher levels of education for the Indigenous population. However, this

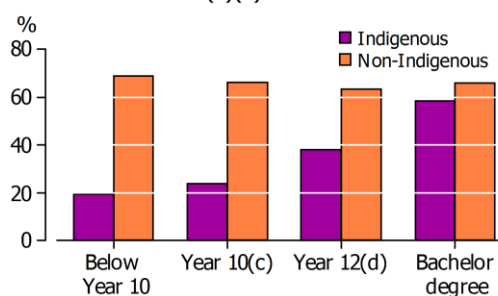


## Selected housing outcomes by highest educational attainment, persons 18 years and over – 2008

LIVING IN AN OVER-CROWDED DWELLING(a)



LIVING IN HOME OWNED BY SOMEONE IN THE HOUSEHOLD(a)(b)



- (a) For definitions of 'living in an overcrowded dwelling' and 'living in home owned by someone in the dwelling' see ABS *National Aboriginal and Torres Strait Islander Social Survey: Users' Guide, 2008* (cat. no. 4720.0).
- (b) Includes persons living in homes that are owned with or without a mortgage, or via a rent/buy scheme, by someone in the household.
- (c) Includes Year 10/11 and basic vocational qualifications.
- (d) Includes Year 12 and skilled vocational qualifications.
- (e) Estimate for Bachelor degree has a relative standard error of 25% to 50% and should be used with caution.

Sources: ABS 2008 National Aboriginal and Torres Strait Islander Social Survey and 2008 National Health Survey

association is not as strong for the non-Indigenous population, where rates improve only slightly with higher levels of education.

Reflecting this, the difference between Indigenous and non-Indigenous housing outcomes reduces considerably with higher levels of education. Nationally, Indigenous adults were over five times as likely to be living in an over-crowded dwelling as non-Indigenous adults, and less than half as likely to be living in an owned home (with or without a mortgage). At higher levels of attainment, these differences reduced. For example, Indigenous and non-Indigenous adults with a Bachelor degree were nearly equally as likely to be living in an owned home.

The association between education and housing outcomes for Indigenous people appears stronger in non-Remote Areas than in Remote, where rates of overcrowding and home ownership did not change as greatly across educational attainment. This result indicates that while education may be associated with better housing outcomes, housing markets and the availability of quality and appropriate housing by location are also likely to influence housing outcomes.

### Looking ahead

Improving outcomes in schooling and educational attainment have been incorporated as performance targets in the *National Indigenous Reform Agreement* and the *National Education Agreement*.<sup>1,2</sup> The performance targets set out in the agreements for Aboriginal and Torres Strait Australians are based on a 'Building Blocks' approach which recognises

that improving outcomes for Indigenous people requires a multi-faceted approach including several areas of social wellbeing, with improvements in one area also reliant on improvements in others.<sup>12</sup> In relation to education, improvements in schooling and attainment should underpin improvements in a range of other areas, such as economic participation, health and housing outcomes for Aboriginal and Torres Strait Islander Australians. However, improvements in education are also dependent on improvements across a range of other areas including early childhood, safe communities, and schooling.

### Endnotes

- 1 Council of Australian Governments' (COAG), 2009, *National Indigenous Reform Agreement*, COAG, Canberra, <[www.federalfinancialrelations.gov.au](http://www.federalfinancialrelations.gov.au)>.
- 2 Council of Australian Governments' (COAG), 2009 *National Education Agreement*, COAG, Canberra, <[www.federalfinancialrelations.gov.au](http://www.federalfinancialrelations.gov.au)>.
- 3 COAG Reform Council, 2010, *National Education Agreement: Performance report for 2009*, COAG Reform Council, Sydney, <[www.coagreformcouncil.gov.au](http://www.coagreformcouncil.gov.au)>.
- 4 The *Australian Qualification Framework*, 2010, <[www.aqf.edu.au](http://www.aqf.edu.au)>.
- 5 Biddle, N., 2010, *A Human Capital Approach to the Educational Marginalisation of Indigenous Australians*, Centre for Aboriginal Economic Policy Research, CAEPR Working Paper No. 67/2010, Canberra, <<http://caepr.anu.edu.au>>.
- 6 Boughton, B., 2000, *What is the connection between Aboriginal education and Aboriginal Health?*, Cooperative Research Centre for Aboriginal and Tropical Health, Occasional Papers Series No. 2, 2000, <[www.lowitja.org.au](http://www.lowitja.org.au)>.
- 7 Caldwell, J., and Caldwell, P., 'What have we learnt about the cultural, social and behavioural determinants of health?', *Health Transition Review*, Vol. 1, no. 1, p8, <<http://htc.anu.edu.au>>.

- 8 Ewald, D., and Boughton, B., 2001, *Maternal Education and child health: An exploratory investigation into a central Australian Aboriginal Community*, Cooperative Research Centre for Aboriginal and Tropical Health, occasional paper January 2001, Darwin, <[www.lowitja.org.au](http://www.lowitja.org.au)>.
- 9 Gray, A., and Boughton, B., 2001 *Education and health behaviours of Indigenous Australians: Evidence from the 1994 National Aboriginal and Torres Strait Islander Survey (NATSIS)* Cooperative Research Centre for Aboriginal and Tropical Health, occasional papers series, no. 3, 2000, Darwin, <[www.lowitja.org.au](http://www.lowitja.org.au)>.
- 10 Hunter, B., 1996 *The determinants of Indigenous employment outcomes: the importance of education and training*, Centre for Aboriginal Economic Policy Research, CAEPR Discussion Paper no. 115/1996, Canberra, <<http://caepr.anu.edu.au>>.
- 11 Junankar, P., 2003 'Estimating the social rate of return to education for Indigenous Australians', *Education Economics*, vol. 11, no. 2, pp. 169–192.
- 12 Council of Australian Governments' (COAG), 2009 *National Integrated Strategy for Closing the Gap in Indigenous Disadvantage*, COAG, Canberra, <[www.coag.gov.au](http://www.coag.gov.au)>.



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