



Bulletin 141 • September 2017

Trends in cardiovascular deaths

Summary

Death rates from cardiovascular disease have fallen considerably in Australia. These declines began in the late 1960s, and have continued to 2015, at varying rates, depending on diseases and age groups.



Since 1968, the cardiovascular disease death rate has fallen by 82%.

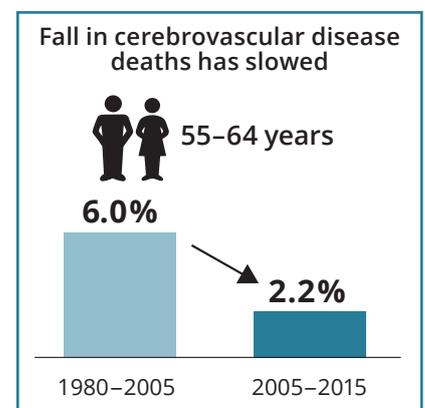
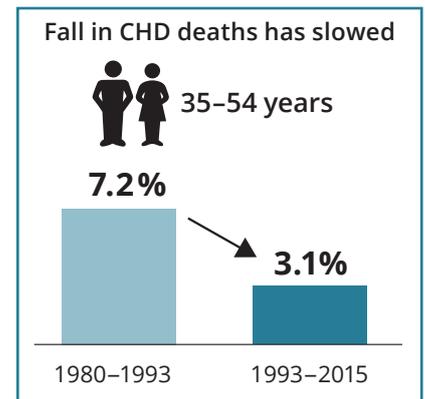
While cardiovascular disease death rates continue to fall across all age groups, the rate of decline in younger age groups has slowed in recent years.

For **coronary heart disease**, falls in death rates continue to improve among older age groups (those aged 75 and over), but have slowed among younger age groups.

For example, for those **aged 35–54**, the fall in coronary heart disease deaths has slowed from an average of 7.2% each year (1980–1993) to an average of 3.1% (1993–2015).

For **cerebrovascular disease** (including stroke), falls in death rates have remained steady for older age groups (those aged 75 and over), but have also slowed among most younger age groups.

For those **aged 55–64**, the fall in cerebrovascular disease deaths has slowed from an average of 6.0% each year (1980–2005) to an average of 2.2% (2005–2015).



These findings are consistent with previous reporting. Continued monitoring of changes in cardiovascular disease death rates provides the evidence that is needed to improve population-level prevention strategies for cardiovascular disease.

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Introduction

Cardiovascular disease—including coronary heart disease and cerebrovascular disease—is a leading and serious disease in Australia.

In 2014–15, an estimated 643,000 adults had coronary heart disease, including angina and previous heart attack, and 308,000 were living with the effects of stroke or other cerebrovascular diseases (ABS 2015; AIHW 2016a). In 2011, cardiovascular disease was the second most burdensome disease group in Australia, behind cancers, causing 15% of the total 4.5 million disability-adjusted life years lost (AIHW 2016b).

Cardiovascular disease is largely preventable, and many of its risk factors can be modified, including tobacco smoking, high blood pressure and cholesterol, physical inactivity, poor nutrition, and obesity (AIHW 2015).

Controlling risk factors for cardiovascular disease can result in large health gains in the population. It reduces the risk of onset of disease, the progression of disease, and the development of complications in those people with established disease.

Despite the magnitude of the current cardiovascular disease burden, deaths from both coronary heart disease and stroke have declined substantially in Australia over the past 50 years. Levels peaked in the late 1960s and early 1970s, with cardiovascular disease responsible for 55% of all deaths each year (about 60,000 deaths). In 2015, cardiovascular disease was responsible for 29% of all deaths.

These falls are the result of a combination of improvements in preventing and detecting the disease, as well as clinical management of people who have it.

While the falls in death rates for cardiovascular disease in Australia have been widely reported, trends in specific age groups have received less attention. There is evidence that falls in the death rate from some forms of cardiovascular disease have accelerated in some older age groups, but have slowed in younger age groups in the recent past (AIHW 2010, 2014; O’Flaherty et al. 2012).

The slowing of falls in cardiovascular disease death rates are concerning, given the high disease burden, and the potential social and economic impacts. They highlight the need for effective and targeted prevention strategies (Sidney et al. 2016).

This bulletin helps readers to understand recent trends in cardiovascular disease mortality in Australia, and how these trends have differed across age groups (see Box 1).

It considers cardiovascular disease in total, followed by sections on coronary heart disease, heart attack (acute myocardial infarction), and cerebrovascular disease. This report focuses on the total population, and does not include trends by sex and population groups. These have been described in greater detail in previous reports, where similar patterns were found in age-specific coronary heart disease mortality trends for men and women (AIHW 2014).

Box 1: Trends in cardiovascular disease mortality rates

This bulletin provides details of recent trends in cardiovascular disease death rates by age groups, including from coronary heart disease, heart attack (acute myocardial infarction), and cerebrovascular disease.

Data from the AIHW National Mortality Database were used to calculate age-specific death rates between 1980 and 2015. Joinpoint regression analysis show points in time at which significant changes in the direction of the trend occurred, and the annual percentage change (APC) over these periods.

For further details, see the Appendix.

Long-term trends in cardiovascular mortality

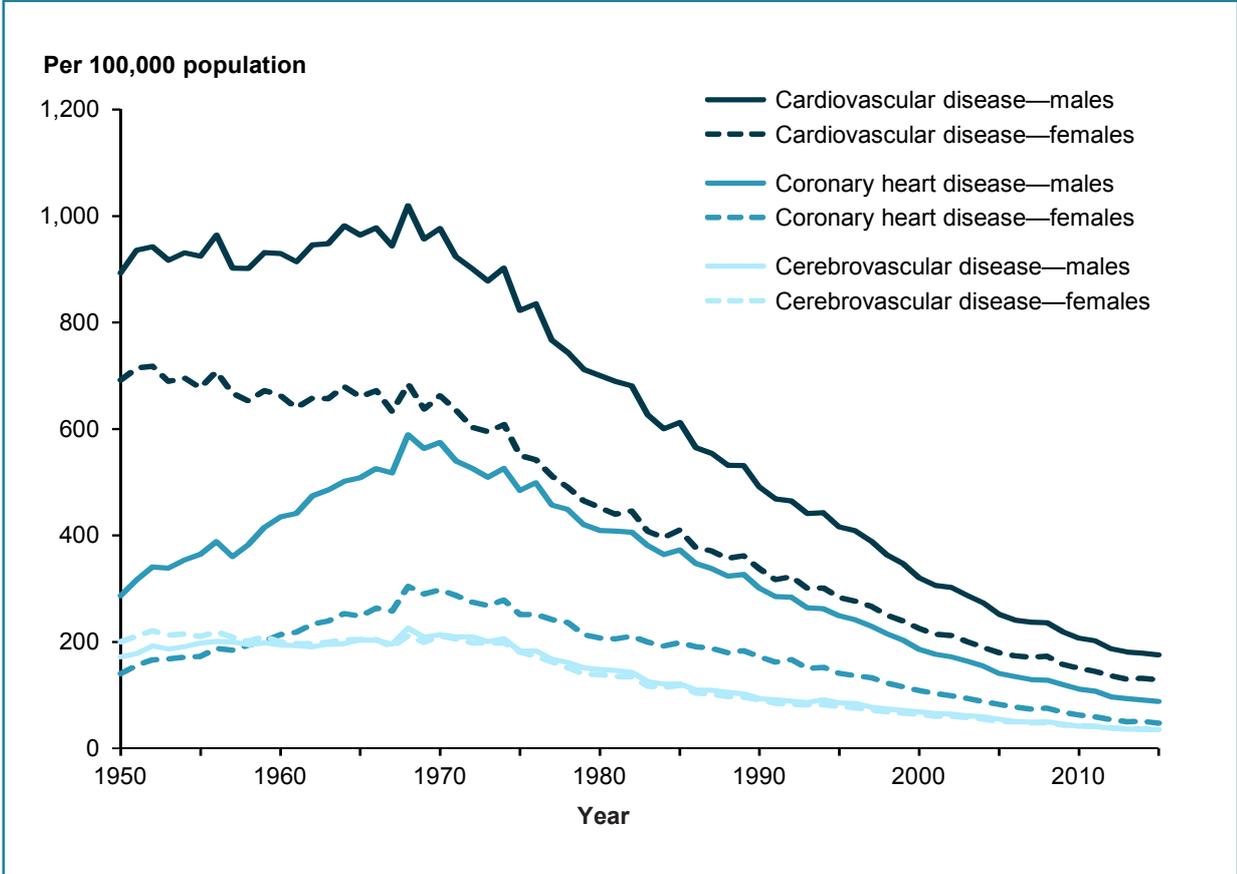
Since the late 1960s and early 1970s, deaths from cardiovascular disease, coronary heart disease, and cerebrovascular disease have fallen markedly (Figure 1).

The age-standardised death rate for cardiovascular disease rose steadily over the first half of the 20th century. Between the early 1950s and the late 1960s it levelled, reaching a peak in 1968 of 830 deaths per 100,000 population. From 1968, the age-standardised rate fell by 82% to 151 per 100,000 population in 2015.

The large fall in the cardiovascular disease death rate since 1968 represents a substantial public health gain in terms of deaths delayed and years of life extended (AIHW 2009). If the cardiovascular disease death rate had remained at its 1968 peak, there would have been close to 200,000 deaths from cardiovascular disease alone in 2015—more than the total number of deaths from all causes that year.

The main driver of this decline was an 85% fall in coronary heart disease deaths between 1968 and 2015, from 428 to 66 deaths per 100,000 population.

The fall in the cerebrovascular disease death rate also made a large contribution, falling by 82%, from 202 deaths per 100,000 population in 1974 to 36 deaths per 100,000 in 2015.



Note: Rates have been standardised to the Australian population as at 30 June 2001.
Source: AIHW National Mortality Database.

Figure 1: Death rates for cardiovascular disease, coronary heart disease, and cerebrovascular disease, 1950–2015

As the death rate from cardiovascular disease fell, rates from other diseases, such as dementia rose. Dementia might soon overtake coronary heart disease as the single leading cause of death in Australia (ABS 2016). There are close associations between dementia and cardiovascular disease—cardiovascular disease itself is a major cause of dementia, and it is often listed as an associated cause when dementia is the underlying cause of death.

Cardiovascular disease mortality

The term 'cardiovascular disease' is used to describe many different conditions affecting the heart and blood vessels. The most common and serious forms of cardiovascular disease in Australia are coronary heart disease, stroke, and heart failure.

When considered as a broad group of diseases, cardiovascular disease has been a major cause of death in Australia for many decades. In 2015, it was the second leading cause of death (almost 45,400 deaths, or 29% of total deaths), closely following all types of cancer. More than three quarters (78%) of these cardiovascular disease deaths were of people aged 75 and over, and slightly more than half (52%) were women.

Over the 35 years from 1980 to 2015, the steady decline in cardiovascular disease death rates that began in the late 1960s has continued (Figure 1). The age-standardised death rate for cardiovascular disease fell by 73%, from 560 to 151 deaths per 100,000 population, or 3.9% per year.

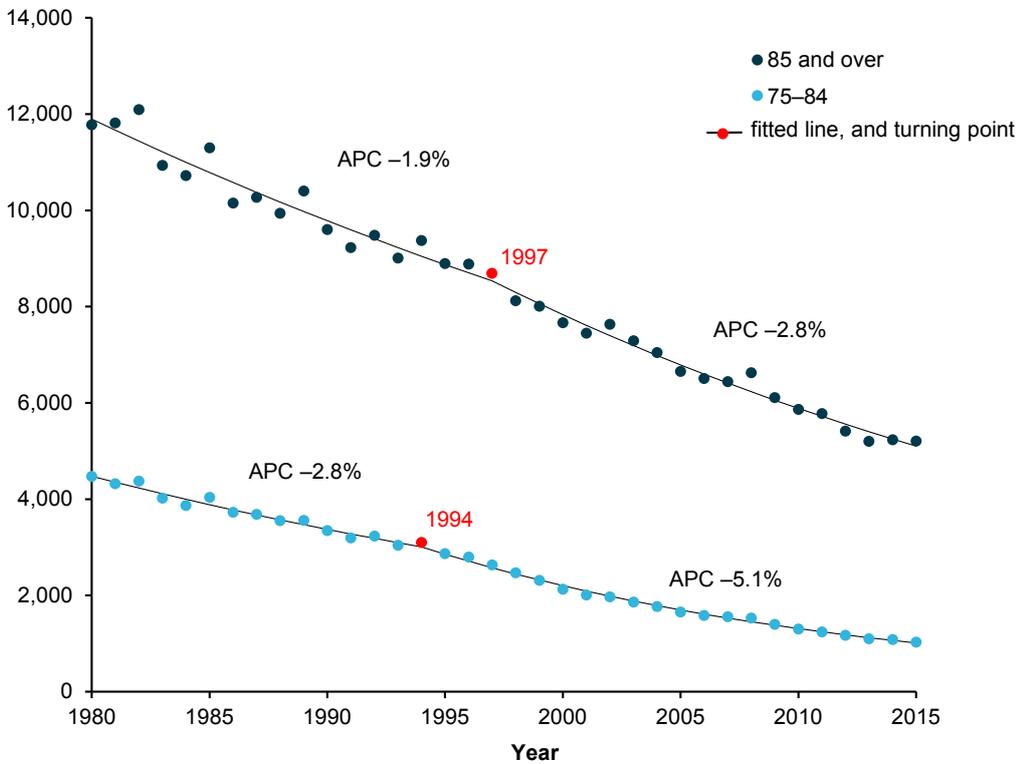
Age-specific trends

While cardiovascular disease death rates fell substantially in each age group between 1980 and 2015, the rate of decline has varied across age groups (Figure 2).

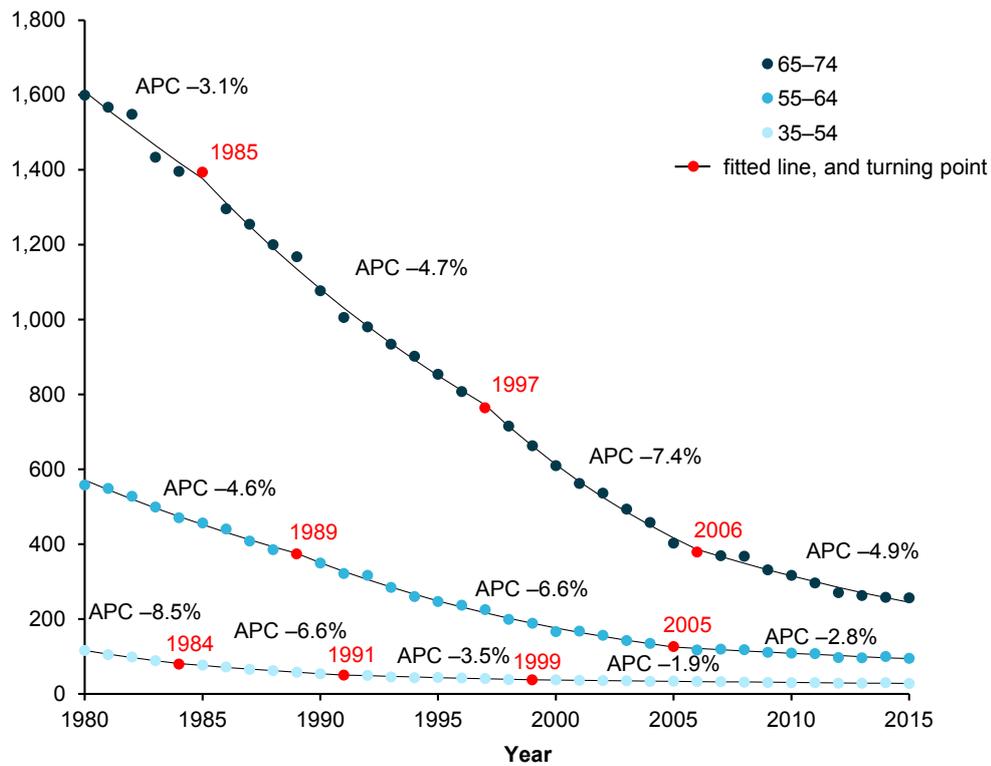
- For older age groups, rates of decline have improved from an APC of 1.9% to 2.8% for those aged 85 and over, and from an APC of 2.8% to 5.1% for those aged 75–84.
- In other age groups, rates of decline have been slowing from an APC of 7.4% to 4.9% for those aged 65–74, from 6.6% to 2.8% for those aged 55–64, and from 3.5% to 1.9% for those aged 35–54.



Per 100,000 population



Per 100,000 population



Note: APC refers to annual percentage change, based on joinpoint regression analysis.

Source: AIHW National Mortality Database.

Figure 2: Age-specific death rates for cardiovascular disease, 1980–2015

Coronary heart disease mortality

Coronary heart disease (or ischaemic heart disease) is the most common form of cardiovascular disease. There are 2 major clinical manifestations—heart attack (often known as acute myocardial infarction) and angina.

For many decades, coronary heart disease has been the single leading cause of death in Australia. In 2015, it was the underlying cause of death for almost 19,800 Australians, or 12% of total deaths. Three-quarters (74%) of these coronary heart disease deaths were of people aged 75 and over, and less than half (44%) were women.

Among deaths attributed to coronary heart disease in 2015, heart attack was the underlying cause of more than 8,400 deaths, while chronic coronary heart disease was the underlying cause of more than 10,900 deaths.

Over the 35 years from 1980 to 2015, the steady decline in coronary heart disease death rates that began in the late 1960s has continued (Figure 1). The age-standardised death rate for coronary heart disease fell by more than three-quarters (78%), from 297 to 66 deaths per 100,000 population, or 4.5% per year.

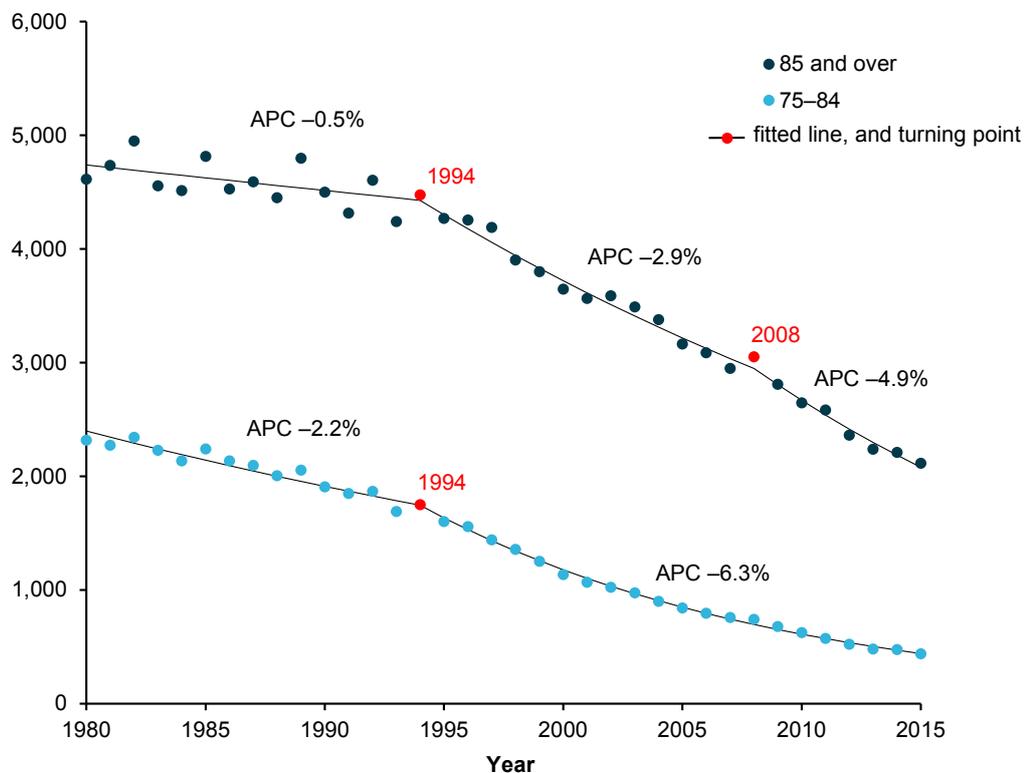
Age-specific trends

As for cardiovascular disease, coronary heart disease death rates fell substantially in each age group, with the rate of decline improving for older age groups (those aged 75 and over), but slowing among younger age groups.

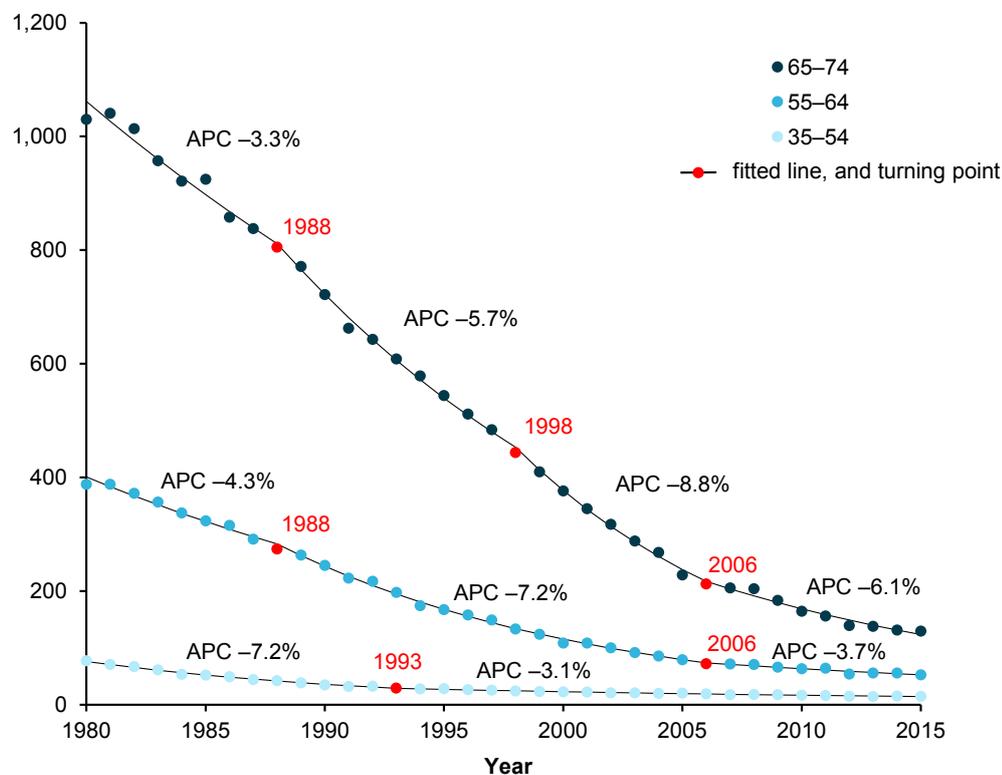
- For older age groups, rates of decline have improved from an APC of 0.5% to 4.9% for those aged 85 and over, and from an APC of 2.2% to 6.3% for those aged 75–84.
- The rate of decline has slowed from an APC of 7.2% to 3.7% for those aged 55–64, and from 7.2% to 3.1% for those aged 35–54 (Figure 3).



Per 100,000 population



Per 100,000 population



Note: APC refers to annual percentage change, based on joinpoint regression analysis.

Source: AIHW National Mortality Database.

Figure 3: Age-specific death rates for coronary heart disease, 1980-2015

Heart attack mortality

Heart attack (or acute myocardial infarction) is the major clinical form of coronary heart disease.

In 2014–15, an estimated 428,000 adults had previously had a heart attack (ABS 2015). In 2013, an estimated 65,300 people aged 25 and over had an acute coronary event in the form of a heart attack or unstable angina—or about 200 events every day (AIHW 2016a).

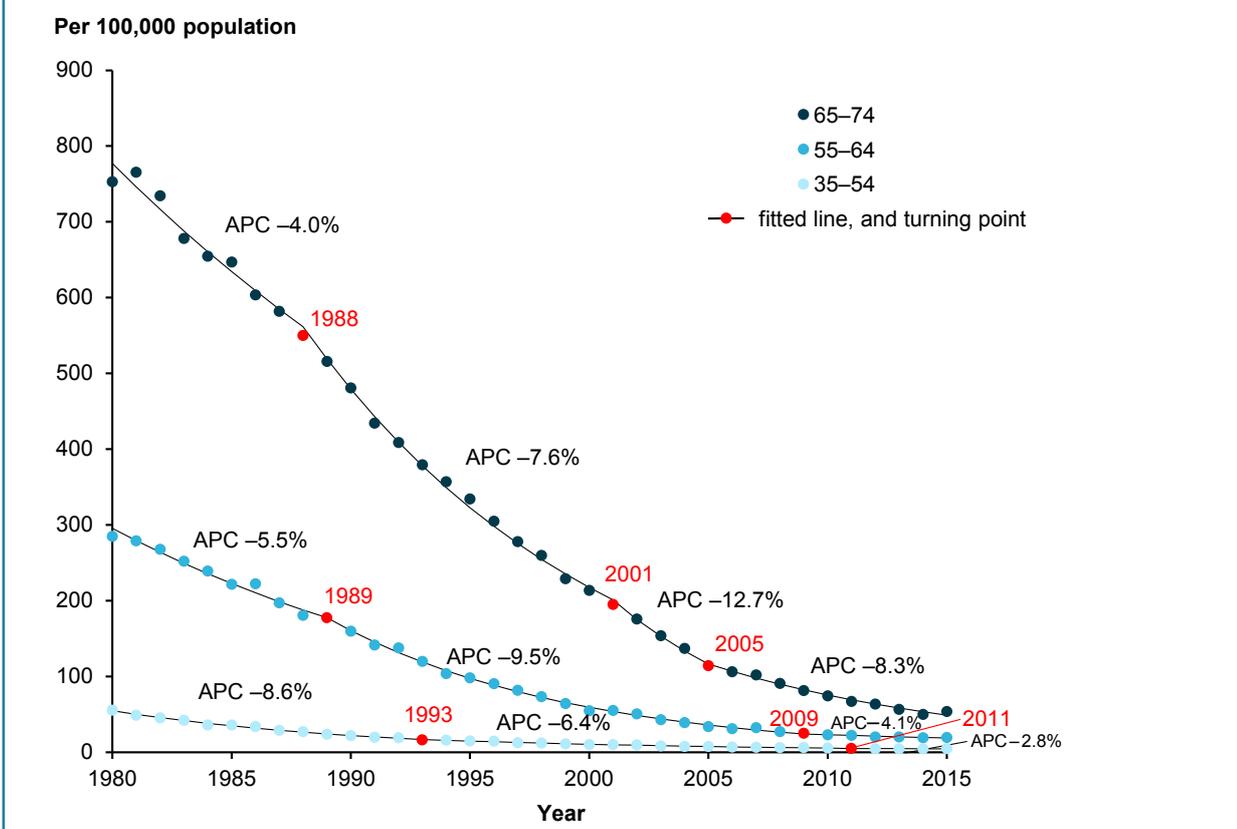
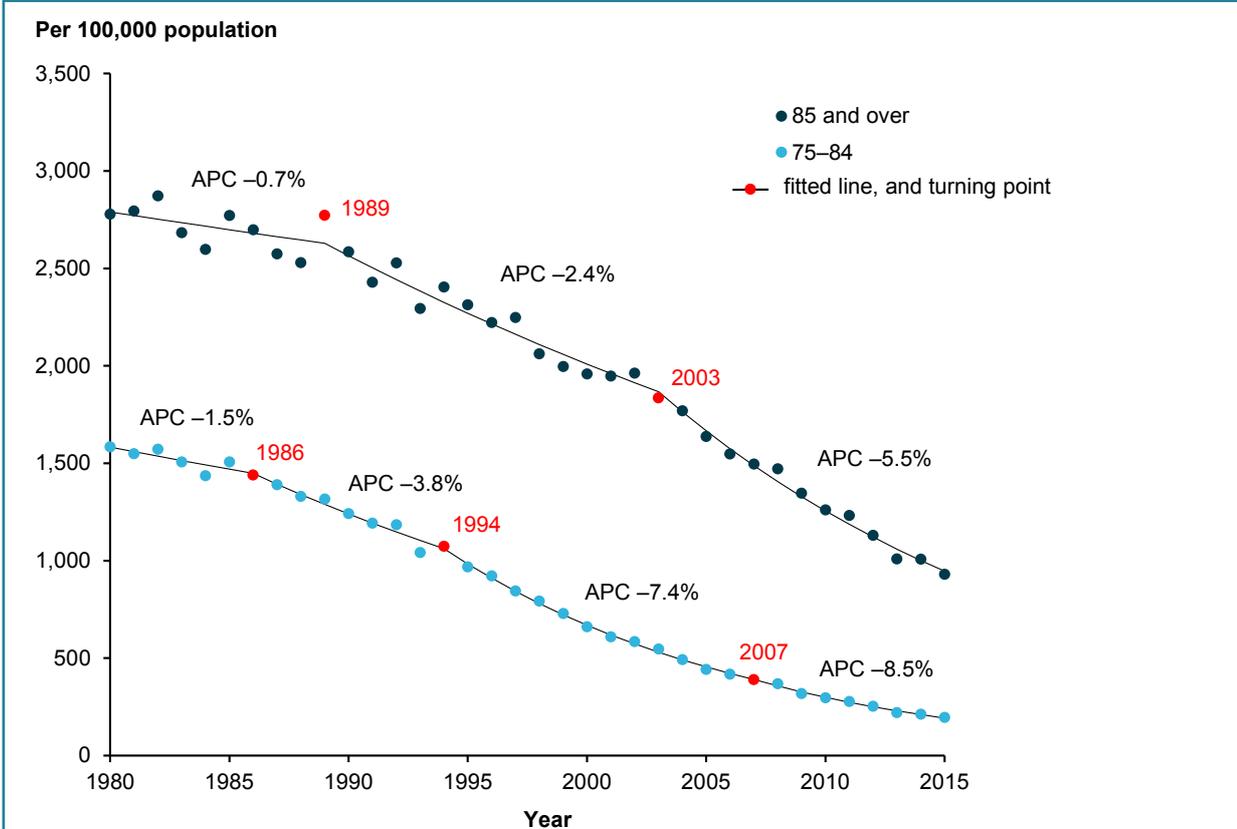
In 2015, heart attack was the underlying cause of death for 8,440 Australians, or 5% of total deaths.

Over the 35 years from 1980 to 2015, the age-standardised death rate for heart attack fell by 86%, from 204 to 28 deaths per 100,000 population, or 5.8% per year.

Age-specific trends

Heart attack death rates fell substantially in each age group (Figure 4). But, as for coronary heart disease, while rates of decline have continued to improve for older age groups (those aged 75 and over), they have slowed among other age groups.

- For those aged 65–74, the rate of decline improved from an APC of 4.0% to 12.7% between 1980 and 2005, but slowed to its current APC of 8.3%. Similarly, for those aged 55–64, the rate of decline has slowed from 9.5% to 4.1%.
- For those aged 35–54, the rate of decline continued to slow from an APC of 8.6% to 2.8%, but there are fewer deaths in this age group, so the slowing in the rate of decline should be interpreted with caution (Table A4).



Note: APC refers to annual percentage change, based on joinpoint regression analysis.
 Source: AIHW National Mortality Database.

Figure 4: Age-specific death rates for heart attack, 1980–2015

Cerebrovascular disease mortality

Cerebrovascular disease is a broad category of diseases that includes stroke and other disorders of the blood vessels supplying the brain or its covering membranes. Stroke is the most common form of cerebrovascular disease, accounting for 75% of cerebrovascular disease deaths.

Cerebrovascular disease is often fatal. In 2015, cerebrovascular disease claimed almost 10,900 lives, or 7% of all deaths in Australia. Of these cerebrovascular disease deaths 84% were people aged 75 and over, and 60% were women. Cerebrovascular diseases (including strokes) were the third leading cause of death in 2015, exceeded only by coronary heart disease and dementia, including Alzheimer's disease (ABS 2016).

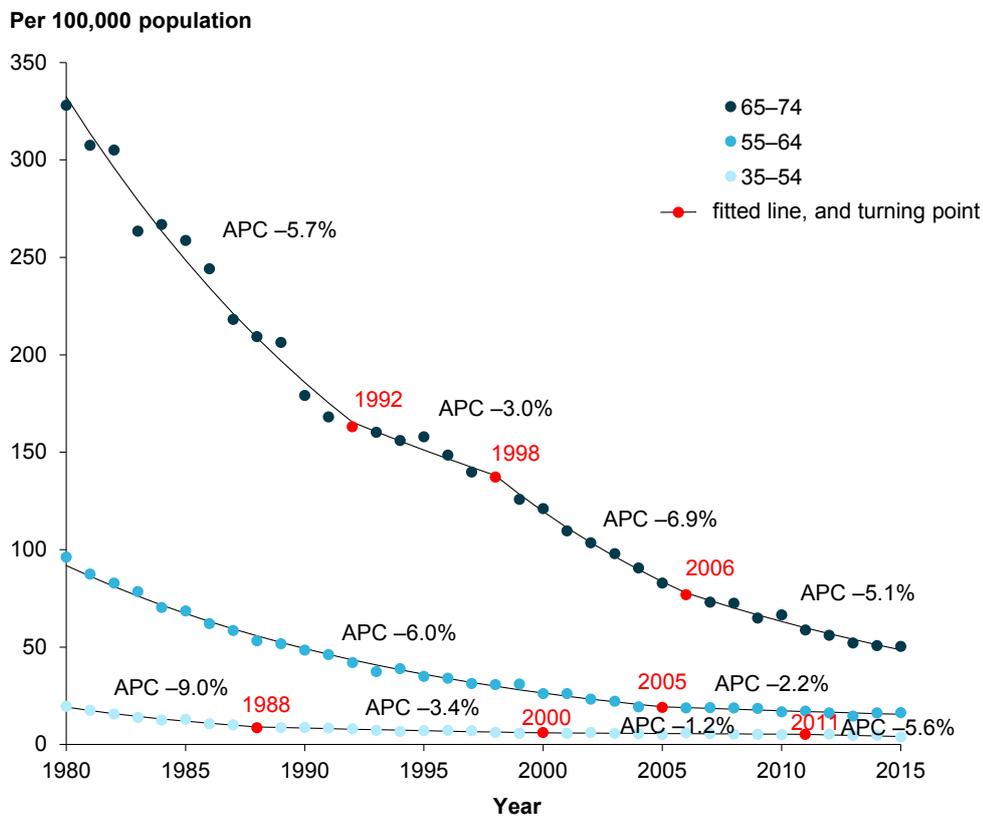
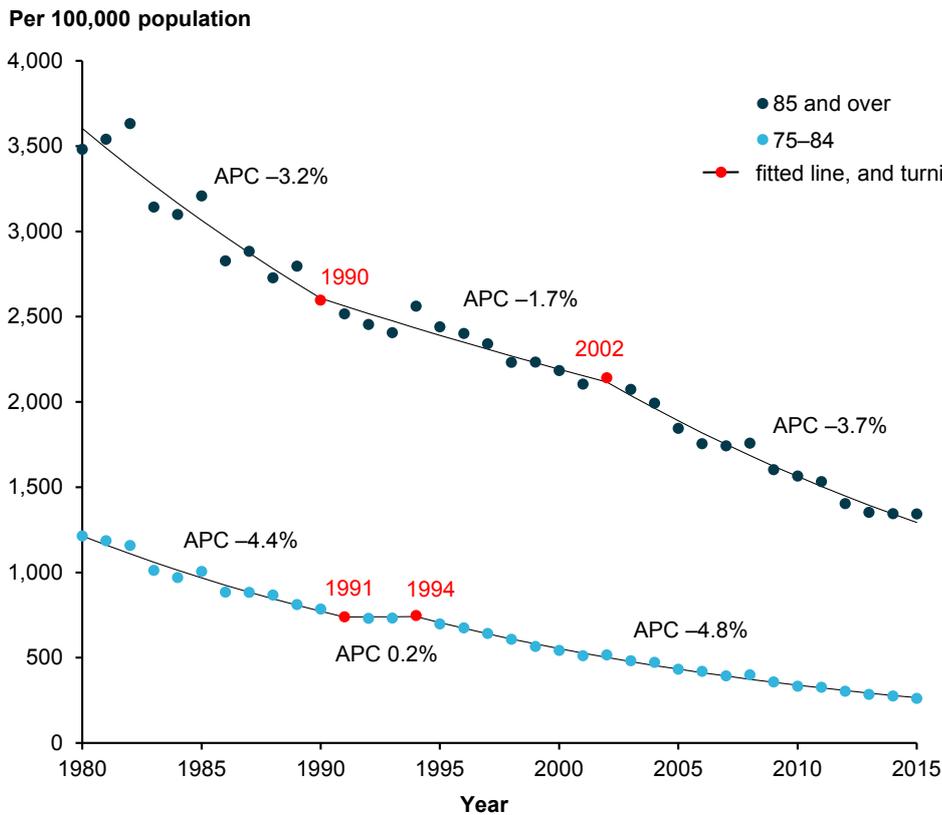
Among deaths attributed to cerebrovascular disease in 2015, haemorrhagic stroke was the underlying cause of 2,400 deaths, and ischaemic stroke the underlying cause of 1,200 deaths. Additionally, 4,700 deaths had stroke not specified as haemorrhagic or ischaemic as the underlying cause, another 2,000 deaths were due to the sequelae (or late effects) of cerebrovascular disease, and 510 deaths were due to other cerebrovascular disease.

Over the 35 years from 1980 to 2015, the age-standardised death rate for cerebrovascular disease fell by three-quarters (74%), from 140 to 36 deaths per 100,000 population, or 3.8% per year.

Age-specific trends

Cerebrovascular disease death rates fell substantially in each age group, with the rates of decline varying across age groups (Figure 5).

- In older age groups, the fall in cerebrovascular disease death rates has remained steady since 1980. For example, for those aged 75–84, the APC in cerebrovascular disease death rates changed little from 4.4% to 4.8%. This differs from coronary heart disease, where death rates among older age groups continue to improve.
- In younger age groups, rates of decline of cerebrovascular disease deaths have slowed, from an APC of 6.0% to 2.2% in those aged 55–64, and from 9.0% to 5.6% in those aged 35–54. But the number of deaths in the 35–54 age group are small, so changes in the rate should be interpreted with caution (Table A4).



Note: APC refers to annual percentage change, based on joinpoint regression analysis.

Source: AIHW National Mortality Database.

Figure 5: Age-specific death rates for cerebrovascular disease, 1980-2015

Prevention, treatment, and mortality rates

The large fall in cardiovascular disease deaths in Australia over the past 50 years represents a public health success. It can be attributed to both prevention and treatment—a combination of reductions in risk factor levels, clinical research, improvements in detection and secondary prevention, and major advances in treatment and care (Ford & Capewell 2011).

Treatment and medical care

Advances in diagnosis and treatment of cardiovascular disease include the development of effective medications for treatment and control of high blood pressure, widespread use of statins to lower cholesterol levels, greater numbers of specialists and other health-care providers focusing on cardiovascular disease, better emergency medical services for heart attack and stroke, and an increase in specialised coronary care and stroke units. Each have contributed to lower case fatality rates and lengthened survival times (Briffa 2009, Ford & Capewell 2011).

Risk factors

Although cardiovascular disease death rates continue to decline overall in Australia, the rate of decline in younger age groups has slowed. In Australia and in other countries, this has been associated with a growing incidence of disease, and adverse changes in major risk factors at earlier ages (Mensah et al. 2017; O’Flaherty et al. 2012; Wilmot et al. 2015). In addition, diabetes presents risks for cardiovascular disease, and its increased prevalence in younger people in recent decades is also thought to have contributed to the slowdown (O’Flaherty et al. 2012).

The risk factors that are most closely associated with the cardiovascular disease burden in Australia include poor nutrition, high levels of blood pressure and cholesterol, physical inactivity, overweight and obesity, and tobacco use (AIHW 2016c, 2017).

While there have been improvements in some of these risk factors, the vast majority (about 95%) of Australian adults still have at least 1 modifiable risk factor, and two-thirds (66%) have 3 or more risk factors at the same time (AIHW 2015; Taylor et al. 2006).

In 2014–15 (ABS 2013, 2015), an estimated:

- 34% of adults had high blood pressure, a slight rise from 32% in 2011–12 (including those with uncontrolled high blood pressure, and whose blood pressure was controlled by medication)
- 63% of adults were overweight or obese, a rise from 56% in 1995
- 15% of adults still smoked daily, although prevalence has declined
- 45% of those aged 18–64 did not participate in sufficient physical activity in the previous week
- 1.2 million people (5.1% of the total population) had diabetes.



Absolute risk

The potential to reduce cardiovascular disease events is closely related to a person's absolute risk—the probability that they will have a cardiovascular event such as a heart attack or stroke in a given time period.

Based on an assessment of multiple risk factors, in 2011–12 about 1 in 5 Australians aged 45–74 (or 1.4 million people) were estimated to have a high absolute risk of a future cardiovascular event (Banks et al. 2016). The proportions at risk rise with age, from 4% of those aged 45–54 with no prior cardiovascular disease, to 25% of those aged 65–74. Most people aged 45–74 at high absolute risk (67% or 970,000) were not receiving recommended therapies to control their levels of blood pressure and cholesterol.

Many Australians remain at risk of cardiovascular disease. These elevated levels of risk factors suggest that there is potential for further declines in cardiovascular disease death rates in the future. Reducing these levels in young and middle-aged adults also has the potential of halting the slowing of the decline in cardiovascular disease death rates.

Mortality rate declines in other countries

The slowing of the rate of decline in cardiovascular disease deaths among young adults in recent decades have occurred not only in Australia, but in other countries including the United States and the United Kingdom.

In the United States, young men and women aged less than 55 showed a clear decline in coronary heart disease deaths between 1979 and 1989, but there was little improvement during the 2 subsequent decades (Wilmot et al. 2015). A slowing of the decline of all cardiovascular disease, coronary heart disease, and stroke death rates might impede progress towards reducing the burden of cardiovascular disease in the United States (Mensah et al. 2017; Sidney et al. 2016).

In the United Kingdom, the decline in death rates from coronary heart disease in those aged 45–54 slowed between 1984 and 2004, and death rates in men aged 35–44 rose in 2002 for the first time in 2 decades (O'Flaherty et al. 2008). But falls in cardiovascular disease death rates improved in women aged 35–54 between 2003 and 2013 (Wilson et al. 2017).

The decline in death rates in other countries has not slowed. In the Netherlands, the decline in deaths from both coronary heart disease and cerebrovascular disease continued for all ages and sex in 2009, speeding up in the late 1990s and early 2000s (Peeters et al. 2011).

Appendix

AIHW National Mortality Database

Data are sourced from the AIHW National Mortality Database.

Cause of Death Unit Record File data are provided to the AIHW by the registries of births, deaths and marriages and the National Coronial Information System (managed by the Victorian Department of Justice), and include the cause of death coded by the Australian Bureau of Statistics (ABS).

'Year' refers to year of registration of death. Deaths registered in 2012 and earlier are based on the final version of cause of death data; deaths registered in 2013 are based on the revised version; and deaths registered in 2014 and 2015 are based on preliminary versions, and are subject to further revision by the ABS.

Cause of death information is sourced from death certificates, which are certified by either a doctor or a coroner. Causes of death are classified according to the International Classification of Diseases and Related Health Problems (ICD), which is revised periodically. Deaths registered in 1997 onwards are classified according to the 10th revision (ICD-10).

Cause of death coding produces an underlying cause—that is, the disease or injury that initiated the train of events leading directly to death, or the circumstances of the accident or violence that produced the fatal injury. This bulletin includes deaths with an underlying cause of cardiovascular disease. Cause of death information on death certificates is influenced by various factors, including accuracy in diagnosis, changing perceptions of the causal role of diseases, changes in certification practices and coding processes, and variation in interpreting causal sequences leading to death. These are issues that can be problematic for reporting cause of death in people with multiple chronic conditions (AIHW 2012).

The data quality statements underpinning the AIHW National Mortality Database can be found in the:

- ABS quality declaration summary for *Deaths, Australia* (ABS cat. no. 3302.0), at: www.abs.gov.au/ausstats/abs%40.nsf/mf/3302.0
- ABS quality declaration summary for *Causes of death, Australia* (ABS cat. no. 3303.0), at: www.abs.gov.au/ausstats/abs%40.nsf/mf/3303.0.

For more information on the AIHW National Mortality Database see *Deaths data at AIHW*, at: www.aihw.gov.au/deaths/aihw-deaths-data.

Disease classifications

Causes of death presented in this bulletin have been classified according to rules in versions of the ICD, published by the World Health Organization. The codes used to classify cardiovascular disease are presented in Table A1.

Table A1: ICD codes for cardiovascular disease

Disease	ICD-9 codes	ICD-10 codes
Cardiovascular disease	390–459	I00–I99
Coronary heart disease	410–414	I20–I25
Angina	413	I20
Acute myocardial infarction	410	I21
Chronic coronary heart disease	414	I25
Cerebrovascular disease	430–438	I60–I69
Haemorrhagic stroke	430–432	I60–I62
Ischaemic stroke	433–434	I63

Comparability factors

In processing deaths registered from 1 January 1997, Australia adopted the use of the automated coding system, and introduced ICD-10 codes. As a result, there is a break in the underlying cause of death series between 1996 and 1997. Comparability factors have been calculated that can be applied to death counts before 1997 to make them comparable with data from 1997 onwards. Comparability factors close to 1.0 indicate there were no significant coding differences between automated ICD-10 and manual ICD-9 coding.

These comparability factors were calculated at the population level, not at the age group level. That is, the same comparability factor was applied to the number of deaths for each age group.

Table A2: Comparability factors for the ICD-9 to ICD-10 transition for various cardiovascular diseases

Condition	Comparability factor
Cardiovascular disease	1.00
Coronary heart disease	1.01
Acute myocardial infarction	0.96
Cerebrovascular disease	0.97

Defining periods of change

A joinpoint regression provided the estimated annual percentage change in death rates and detected points in time at which significant changes in the trend occurred (Table A3).

APC is the percentage change over a defined period, averaged over the number of years in the period. It is derived from the slope of the trend line, based on a regression of the age-specific death rates and the year of death.

The software used was the Joinpoint Regression Program, Version 4.4.0.0 (January 2017), developed by the Statistical Methodology and Applications Branch, U.S. National Cancer Institute.

Trend data in the form of age-standardised death rates are fitted to the simplest joinpoint model possible. A maximum of 3 joinpoints was allowed for estimations. The models assume constant variance, with a minimum of 5 observations from a joinpoint to either end of the data. For each annual percentage change estimate, the corresponding 95% confidence interval was also calculated.

Statistical tables

Table A3: Annual rate of change of cardiovascular disease deaths between 1980 and 2015

Age group (years)	Period I		Period II		Period III		Period IV	
	Years	Rate change (%)	Years	Rate change (%)	Years	Rate change (%)	Years	Rate change (%)
Cardiovascular disease								
35-54	1980-1984	-8.5 (-10.1, -6.9)	1984-1991	-6.6 (-7.4, -5.7)	1991-1999	-3.5 (-4.2, -2.8)	1999-2015	-1.9 (-2.1, -1.7)
55-64	1980-1989	-4.6 (-5.2, -3.9)	1989-2005	-6.6 (-6.9, -6.3)	2005-2015	-2.8 (-3.4, -2.3)		
65-74	1980-1985	-3.1 (-4.6, -1.6)	1985-1997	-4.7 (-5.1, -4.3)	1997-2006	-7.4 (-8.1, -6.7)	2006-2015	-4.9 (-5.5, -4.3)
75-84	1980-1994	-2.8 (-3.1, -2.5)	1994-2015	-5.1 (-5.2, -4.9)				
85+	1980-1997	-1.9 (-2.2, -1.7)	1997-2015	-2.8 (-3.1, -2.6)				
Coronary heart disease								
35-54	1980-1993	-7.2 (-7.6, -6.7)	1993-2015	-3.1 (-3.3, -2.9)				
55-64	1980-1988	-4.3 (-5.1, -3.4)	1988-2006	-7.2 (-7.5, -6.9)	2006-2015	-3.7 (-4.4, -3.0)		
65-74	1980-1988	-3.3 (-4.1, -2.5)	1988-1998	-5.7 (-6.3, -5.0)	1998-2006	-8.8 (-9.7, -7.8)	2006-2015	-6.1 (-6.7, -5.4)
75-84	1980-1994	-2.2 (-2.6, -1.9)	1994-2015	-6.3 (-6.5, -6.1)				
85+	1980-1994	-0.5 (-0.9, -0.1)	1994-2008	-2.9 (-3.3, -2.5)	2008-2015	-4.9 (-5.9, -3.8)		
Heart attack								
35-54	1980-1993	-8.6 (-9.1, -8.2)	1993-2011	-6.4 (-6.7, -6.1)	2011-2015	-2.8 (-5.8, 0.2)		
55-64	1980-1989	-5.5 (-6.5, -4.5)	1989-2009	-9.5 (-9.8, -9.2)	2009-2015	-4.1 (-5.9, -2.3)		
65-74	1980-1988	-4.0 (-4.9, -3.0)	1988-2001	-7.6 (-8.1, -7.1)	2001-2005	-12.7 (-16.6, -8.6)	2005-2015	-8.3 (-8.9, -7.6)
75-84	1980-1986	-1.5 (-2.6, -0.3)	1986-1994	-3.8 (-4.7, -2.9)	1994-2007	-7.4 (-7.8, -7.0)	2007-2015	-8.5 (-9.1, -7.8)
85+	1980-1989	-0.7 (-1.4, 0.1)	1989-2003	-2.4 (-2.8, -2.0)	2003-2015	-5.5 (-6.0, -5.0)		
Cerebrovascular disease								
35-54	1980-1988	-9.0 (-10.5, -7.5)	1988-2000	-3.4 (-4.4, -2.4)	2000-2011	-1.2 (-2.4, 0.0)	2011-2015	-5.6 (-10.1, -1.0)
55-64	1980-2005	-6.0 (-6.3, -5.8)	2005-2015	-2.2 (-3.1, -1.2)				
65-74	1980-1992	-5.7 (-6.2, -5.1)	1992-1998	-3.0 (-4.9, -1.0)	1998-2006	-6.9 (-8.0, -5.8)	2006-2015	-5.1 (-5.9, -4.3)
75-84	1980-1991	-4.4 (-4.9, -3.9)	1991-1994	0.2 (-7.6, 8.6)	1994-2015	-4.8 (-5.0, -4.6)		
85+	1980-1990	-3.2 (-3.9, -2.5)	1990-2002	-1.7 (-2.3, -1.1)	2002-2015	-3.7 (-4.2, -3.3)		

Note: The annual rate of change in each period is significantly different from the preceding period, as determined by joinpoint analysis. The 95% confidence interval is shown in brackets.

Table A4: Number of cardiovascular disease deaths, selected years, 1980 to 2015

Age group (years)	1980	1985	1990	1995	2000	2005	2010	2015
Cardiovascular disease								
35-54	3,818	2,892	2,372	2,211	2,076	2,001	1,875	1,789
55-64	7,412	6,709	5,124	3,727	2,912	2,729	2,727	2,610
65-74	14,616	14,087	12,399	10,910	7,947	5,537	5,117	5,160
75-84	17,928	19,749	19,927	19,350	17,233	15,489	12,842	11,170
85+	11,624	13,697	14,132	16,932	19,246	20,103	22,662	24,442
Coronary heart disease								
35-54	2,508	1,939	1,516	1,395	1,276	1,202	1,026	968
55-64	5,100	4,702	3,557	2,497	1,900	1,715	1,594	1,446
65-74	9,320	9,252	8,223	6,885	4,898	3,141	2,654	2,611
75-84	9,198	10,851	11,245	10,716	9,216	7,878	6,162	4,765
85+	4,508	5,779	6,557	8,047	9,158	9,562	10,226	9,934
Heart attack								
35-54	1,896	1,409	1,011	775	564	455	345	307
55-64	3,942	3,389	2,438	1,546	961	732	578	536
65-74	7,166	6,813	5,765	4,449	2,784	1,571	1,201	1,087
75-84	6,616	7,679	7,698	6,812	5,357	4,131	2,928	2,125
85+	2,856	3,500	3,964	4,589	4,919	4,948	4,872	4,369
Cerebrovascular disease								
35-54	661	501	397	367	338	298	314	242
55-64	1,317	1,037	732	543	457	411	419	446
65-74	3,090	2,695	2,125	2,080	1,576	1,139	1,074	1,012
75-84	5,014	5,067	4,819	4,854	4,400	4,037	3,288	2,842
85+	3,542	4,009	3,939	4,788	5,482	5,577	6,053	6,303

Note: Deaths registered in 2014 and 2015 are based on preliminary data, and are subject to further revision by the ABS.

Source: AIHW National Mortality Database.

Acknowledgments

The authors of this bulletin are Michael de Looper and Alison Dias of the Cardiovascular, Diabetes and Kidney Unit at the Australian Institute of Health and Welfare.

Valuable guidance and advice was provided by Sushma Mathur, Lynelle Moon, Lany Trinh, Michelle Gourley, and Andrew Kettle of the AIHW. The authors gratefully acknowledge the valuable contributions from the Cardiovascular Disease Expert Advisory Group, whose members are: Andrew Tonkin (Chair), Tom Briffa, Derek Chew, Annette Dobson, Mark Nelson, and Mandy Thrift.

This project was funded by the Australian Government Department of Health.

Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
APC	annual percentage change
ICD	International Classification of Diseases
ICD-10	International Classification of Diseases 10th revision

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ISSN 2205-5010 (PDF)

ISSN 1446-9820 (Print)

ISBN 978-1-76054-187-3 (PDF)

ISBN 978-1-76054-188-0 (Print)

Suggested citation

Australian Institute of Health and Welfare 2017. Trends in cardiovascular deaths. Bulletin no. 141. Cat. no. AUS 216. Canberra: AIHW.

Australian Institute of Health and Welfare

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Published by the Australian Institute of Health and Welfare

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bulletin 141

