5 Specific causes of mortality

Introduction

The previous chapter of this report examined the broad groups of causes of death, indicated the main specific causes contained in those groups and outlined their changing contribution to mortality in the groups over time. This chapter examines a range of major specific causes in more detail.

The first part of the chapter compares the contribution that selected specific causes made to total deaths early in the century and in 2000. The second part describes each selected cause briefly and shows its death rates over the decades.

Contribution of specific causes to total deaths

Throughout the century, approximately 60% of all deaths could be accounted for by only 10 specific causes (Table 5.1). It can be seen that in the early century no single specific cause of death was dominant, with the top five causes each explaining around 6–8% of all deaths or, when combined, 36% of male deaths and 39% of female deaths.

By the end of the century, however, ischaemic heart disease was clearly the dominant cause at about 20% for each sex. Another form of circulatory disease, cerebrovascular disease, was a clear second at 12% for females in 2000; for males it also ranked second at 7.4% but was closely followed by lung cancer at 6.9%.

It is also worth noting that, in the 1970s, when circulatory diseases were at their highest and accounted for around 50% of all deaths, the top 10 specific causes accounted for almost 70% of all deaths.

Table 5.1: Top 10 causes of death, 1907 and 2000

	1907		2000	
	Condition	**% all deaths**	**Condition**	**% all deaths**
			Males	
1	Organic heart disease (079)	8.3	Ischaemic heart disease (I20–I25)	21.0
2	Tuberculosis (026–034)	8.2	Cerebrovascular disease (I60–I69)	7.4
3	Diarrhoea (105–106)	7.1	Lung cancer (C33–C34)	6.9
4	Senility (154)	6.6	Other heart diseases (I05–I09, I11, I13, I26, I27, I30–I152)	4.9
5	Congenital (151–153)	6.1	Chronic obstructive pulmonary disease (J41–J44)	4.7
6	Bronchitis (090–092)	4.8	Prostate cancer (C61)	4.0
7	Pneumonia (093)	4.3	Colorectal cancer (C18–C21)	3.8
8	Nephritis (119–120)	4.1	Suicide (X60–X84)	2.8
9	Cerebrovascular disease (064)	3.8	Diabetes (E10–E14)	2.4
10	Unspecified and ill-defined (179)	3.1	Transport accidents	2.0
	Total leading causes	**56.4**	**Total leading causes**	**59.9**
			Females	
1	Tuberculosis (026–034)	8.9	Ischaemic heart disease (I20–I25)	20.3
2	Organic heart disease (079)	8.5	Cerebrovascular disease (I60–I69)	12.0
3	Diarrhoea (105–106)	7.9	Other heart diseases (I05–I09, I11, I13, I26, I27, I30–I52)	7.0
4	Senility (154)	7.3	Dementia and related disorders (F01–F03, G30–G32)	4.2
5	Congenital (151–153)	6.5	Breast cancer (C50)	4.1
6	Bronchitis (090–092)	4.8	Lung cancer (C33–C34)	3.7
7	Cerebrovascular disease (064)	4.3	Colorectal cancer (C18–C21)	3.5
8	Nephritis (119–120)	4.1	Chronic obstructive pulmonary disease (J41–J44)	3.3
9	Pneumonia (093)	3.8	Pneumonia and influenza (J10–J18)	2.6
10	Puerperal (134–141)	3.1	Diabetes (E10–E14)	2.3
	Total leading causes	**59.2**	**Total leading causes**	**63.0**

Note: Codes refer to the International Classification of Diseases, versions 1 and 10.

Source: AIHW National Mortality Database.

Trends in major specific causes across the century

As can be observed from Table 5.1, a number of specific causes of death stand out as significant during the twentieth century. Although many more conditions could have been examined, 20 topical conditions (Table 5.3) could be followed for long periods with minimal need to adjust for ICD changes (see Box 5.1). Deaths from these 20 conditions represented around three-quarters of all deaths at any stage of the century.

Box 5.1 discusses some classification issues and Table 5.2 provides an example of how one major issue—following deaths across different ICD versions— has been addressed. The format used to describe trends is explained in Box 5.2. Table 5.3 lists the causes of deaths analysed here, the 'commencement year' of the trends described for each cause and the age range relating to age-specific analyses. In addition, tables B19 to B52 in Appendix B provide age-specific death rates for all conditions discussed in this chapter.

Box 5.1: Classification issues

Specific conditions within the International Classification of Diseases can be identified by specific ICD codes. As can be expected, with each revision of the ICD there are changes in how some conditions are classified. An analysis of deaths data which was dual coded to both ICD-9 and ICD-10 was undertaken by the ABS to measure the effects of the transition (ABS 2003b).

In one result from this exercise, under ICD-9 there were 2,602 deaths from breast cancer. Under ICD-10, however, 22 of those 2,602 were recorded as having died from 'malignant neoplasms of independent primary sites' rather than from breast cancer. In another example, 29,051 deaths were coded to ischaemic heart disease under ICD-9; under ICD-10, however, 28,750 such deaths were recorded. For the remaining 1% in the second example, 102 were coded to other diseases within the circulatory diseases ICD chapter while the remaining 199 deaths were coded to 78 different causes of death other than circulatory diseases. In both these examples, therefore, a very high concordance of 99% was achieved.

In some revisions of the ICD, major changes in how diseases were understood and recorded introduced low concordance rates. An important specific condition such as asthma is one example, so an analysis of asthma over the century has not been possible in this report. Even between ICD-9 and ICD-10, the concordance for asthma was only 75%. Also, earlier ICD changes presumably contributed to marked discontinuities in apparent trends for asthma death rates. The rates changed almost threefold between 1949 and 1950, from 2.6 per 100,000 population to 7.4; and jumped 50% from 1978 to 1979.

Table 5.2 presents the example of diarrhoea to show how different ICD codes have been used to track this cause of death across the various changes in classification.

Table 5.2: ICD codes for diarrhoea

Version	Period	Codes
ICD-1	1907–1917	14, 104–105
ICD-2	1918–1921	14, 104–105
ICD-3	1922–1930	16, 113–114
ICD-4	1931–1939	13, 119–120
ICD-5	1940–1949	27, 119–120
ICD-5	1950–1957	42, 45–49, 543
ICD-7	1958–1967	42, 45–49, 543
ICD-8	1968–1978	3–9,535
ICD-9	1979–1996	3–9,535
ICD-10	1997–	A02–A09, K52

Note: Codes refer to the International Classification of Diseases.

Source: AIHW GRIM Books.

Box 5.2: How the data are chosen in this chapter, how they are presented and some hints for interpreting them

Figures

In a typical figure in this chapter – for example Figure 5.2 – an age-standardised death rate is shown in an inset and the large graph focuses on several age-specific rates for that cause. The age-specific analyses mainly correspond to age ranges where deaths predominate or which reveal an age-related difference in trends. On the other hand, the age-standardised analyses cover all ages.

For example, the age range of 45 years and older is chosen for prostate cancer because such deaths below that age are rare. Similarly, diarrhoea rates are presented here only for ages 0–4 years.

Trend starting dates

Early in the century, some specific causes of death, such as lung cancer and motor vehicle accidents, were not identified separately in the ICD, so trends will cover the shorter time span since they appeared in the records. Ischaemic heart disease is another example, having first appeared in the ICD in 1950 (although estimated rates going back to 1940 are shown in this publication).

A list of the conditions presented in this chapter, their 'commencement year' and the age range covered for age-specific analyses are shown in Table 5.3.

Smoothing

For some conditions the age-specific rates, particularly for the 85 years or over age range, are subject to wide year-to-year variation. To overcome this, the annual data have been grouped into moving five-year averages. Where this 'smoothing' has been done it is noted in the relevant figure and consequently the rates begin in the fifth year of the series.

Also, because smoothing gives a multi-year average, it should be noted that it is unlikely to produce the correct rate for any particular year; for this, readers should refer to the accurate annual rates given in the text or tables.

Table 5.3: Specific conditions analysed in this chapter

Condition	Commencement year	Age range for age-specific analyses (years)
Diarrhoea	1907	0–4
Septicaemia	1907	All
Tuberculosis	1907	15 or over
Lung cancer	1945	45 or over
Colorectal cancer	1922	45 or over
Female breast cancer	1907	45 or over
Prostate cancer	1922	45 or over
Stomach cancer	1922	45 or over
Cancers of the cervix and uterus	1920	45 or over
Cerebrovascular disease	1907	45 or over
Ischaemic heart disease	1940	45 or over
Senility	1907	65 or over
Perinatal and congenital abnormalities	1907	0–4
Motor vehicle accidents	1924	15 or over
Suicide	1907	15 or over
SIDS (sudden infant death syndrome)	1968	0–1
HIV/AIDS	1988	25 or over
Viral hepatitis	1950	Summary
Meningococcal disease	1915	Summary
Diabetes	1907	Summary

Diarrhoea, for ages 0–4 years

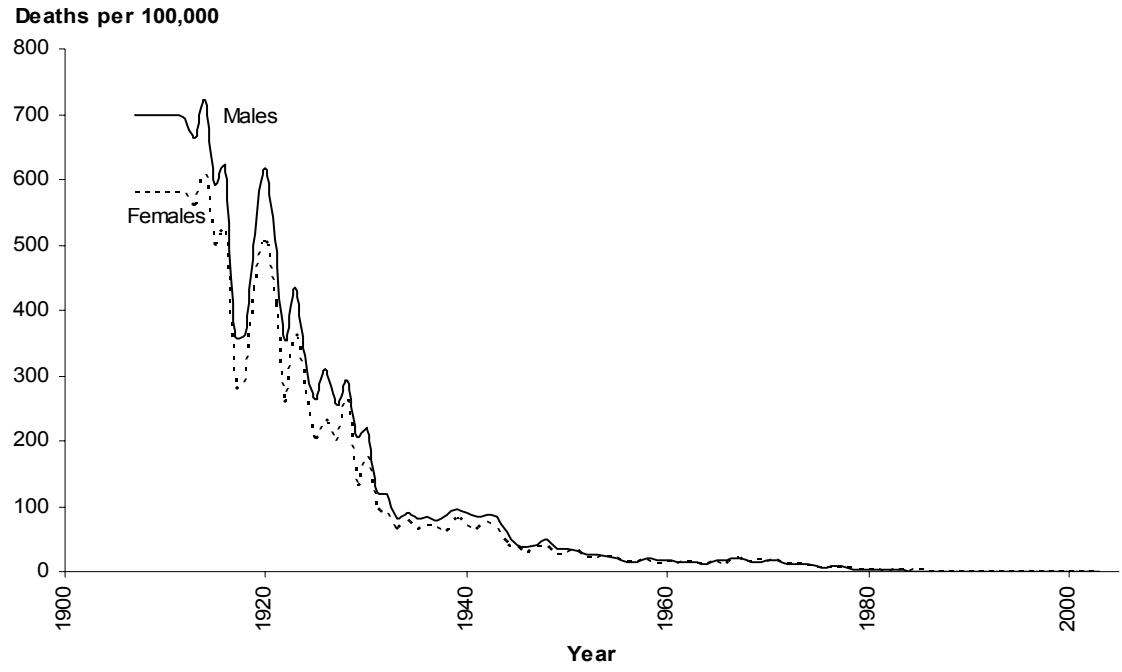
Background

Diarrhoea is excessive and watery evacuation of the bowel's contents, which can lead to marked loss of body fluids and even death when very severe. It can be caused by a range of intestinal infections and other forms of bowel inflammation, and can be particularly dangerous in children and the elderly.

Although diarrhoea now rarely causes death in developed countries like Australia, it is presented here because it was the third leading cause of death for both males and females early in the century. It especially affected children aged 0–4 years then, accounting for around a quarter of all infant deaths.

Death rates

As control of bacteria, viruses and parasites was developed and the effects of dehydration and rehydration were understood, the death rates from diarrhoea for 0–4-year-olds reduced dramatically over the century. Rates fell from around 700 per 100,000 population for males and 580 for females at the beginning of the century to under 100 for both sexes by 1935, then to around 2 or less deaths per 100,000 by the middle 1980s, and finally to about 2 deaths per million by 2000 (Figure 5.1; tables B19 and B20).



Source: AIHW GRIM Books.

Figure 5.1: Death rates for diarrhoea, males and females, 0–4 years, 1907–2003

Septicaemia

Background

During the late 1990s, septicaemia was the underlying cause for around 1,000 Australian deaths per year and ranked in the top 20 causes of death. Septicaemia is commonly known as blood poisoning, signifying widespread damage from disease-causing bacteria that have invaded the bloodstream. It can occur in otherwise healthy individuals if the invading bacterium is virulent enough, or in people whose resistance may have been reduced by immunity-damaging disorders such as AIDS, certain drug therapies or being in a severely debilitated condition.

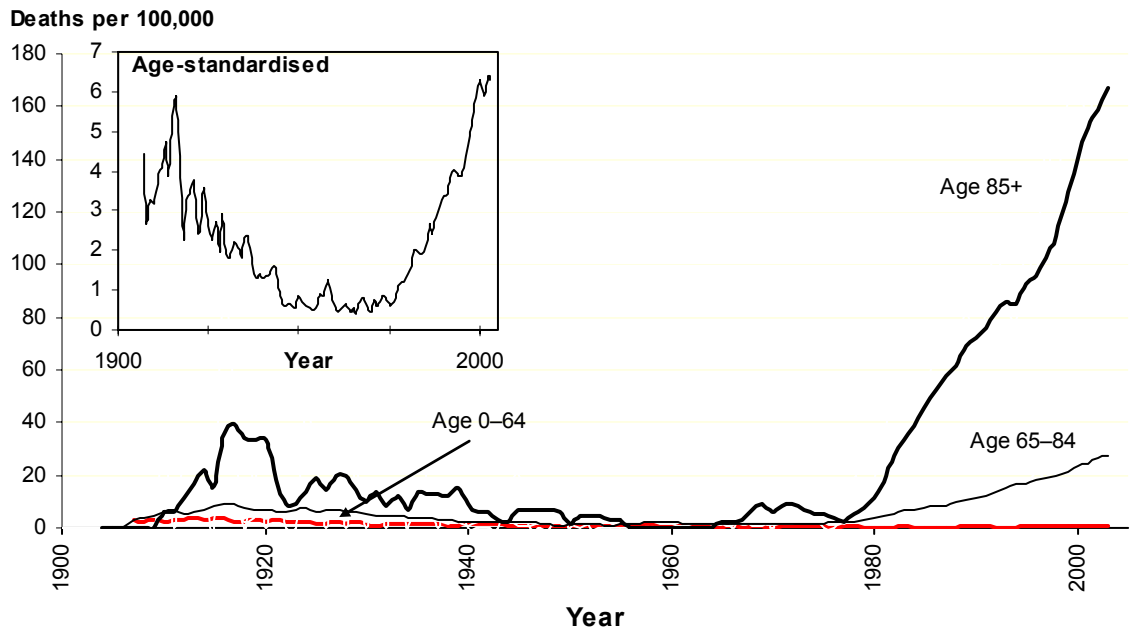
Early in the century, septicaemia was generally acquired in the community (that is, outside hospital) and deaths were spread across all ages, with age-standardised death rates averaging around 4 deaths per 100,000 population for males and females. With the emergence of antibiotics the death rates from septicaemia fell to considerably less than 1 death per 100,000 population for most of the third quarter of the century. In the late 1970s resistant strains of the bacterium *Staphylococcus* emerged, especially in the hospital setting where older people with reduced immunity were more susceptible, particularly after invasive surgery. As can be noted from figures 5.2 and 5.3, the rising age-standardised death rates in the last quarter of the century were driven by high and rising death rates in the older population. The overall result of this trend is that age-standardised death rates for septicaemia at the end of the twentieth century were back to their early-century levels.

Age-specific death rates

Early in the twentieth century, there were few deaths recorded for septicaemia for all age groups. By the mid-1960s, with the widespread use of penicillin, septicaemia deaths were even less common.

However, in persons aged 85 or over the death rates from septicaemia increased rapidly from the late 1970s to 172 deaths per 100,000 population for males in 2000 and 118 for females (figures 5.2 and 5.3; Table B45). Rates for people aged 65–84 also increased markedly, although not as much.

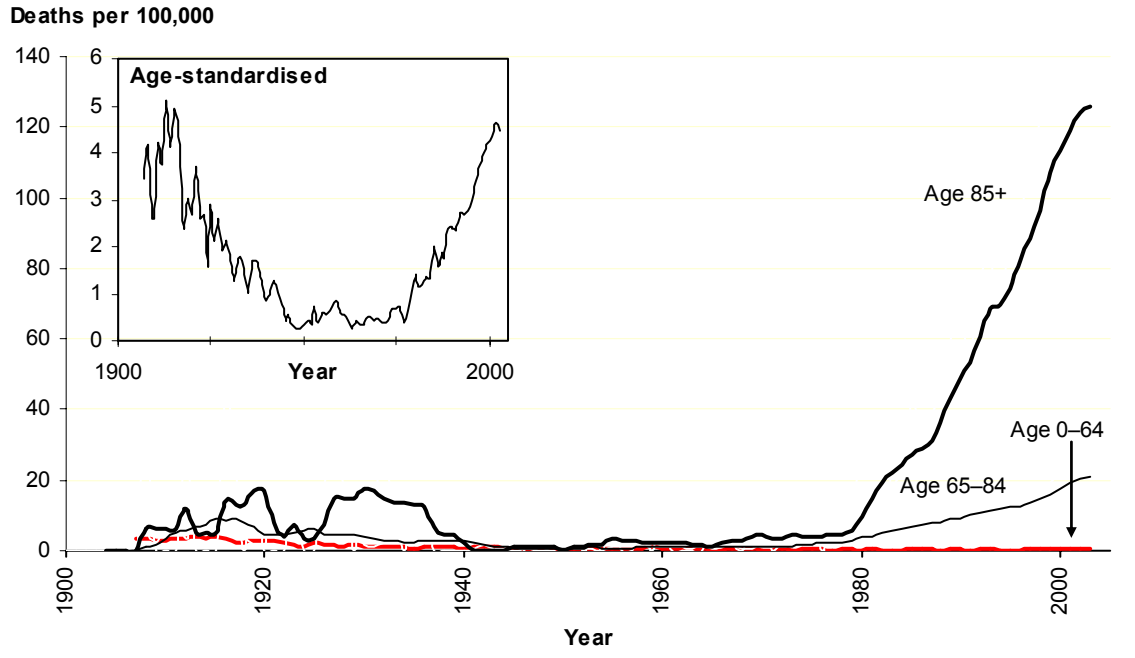
Despite these trends in the older age groups, death rates for those aged under 65 years remained low over the century and did not increase for either sex.



Note: The rates shown for the 65–84 and 85 or over age groups are 5-year moving averages. This smoothing process (see Box 5.2) is unlikely to show the correct rate for any particular year and so may differ from the accurate rates given in the text or tables.

Source: AIHW GRIM Books.

Figure 5.2: Age-specific and age-standardised death rates for septicaemia, males, 1907–2003



Note: The rates shown for the 65–84 and 85 or over age groups are 5-year moving averages. This smoothing process (see Box 5.2) is unlikely to show the correct rate for any particular year and so may differ from the accurate rates given in the text or tables.

Source: AIHW GRIM Books.

Figure 5.3: Age-specific and age-standardised death rates for septicaemia, females, 1907–2003

Tuberculosis

Background

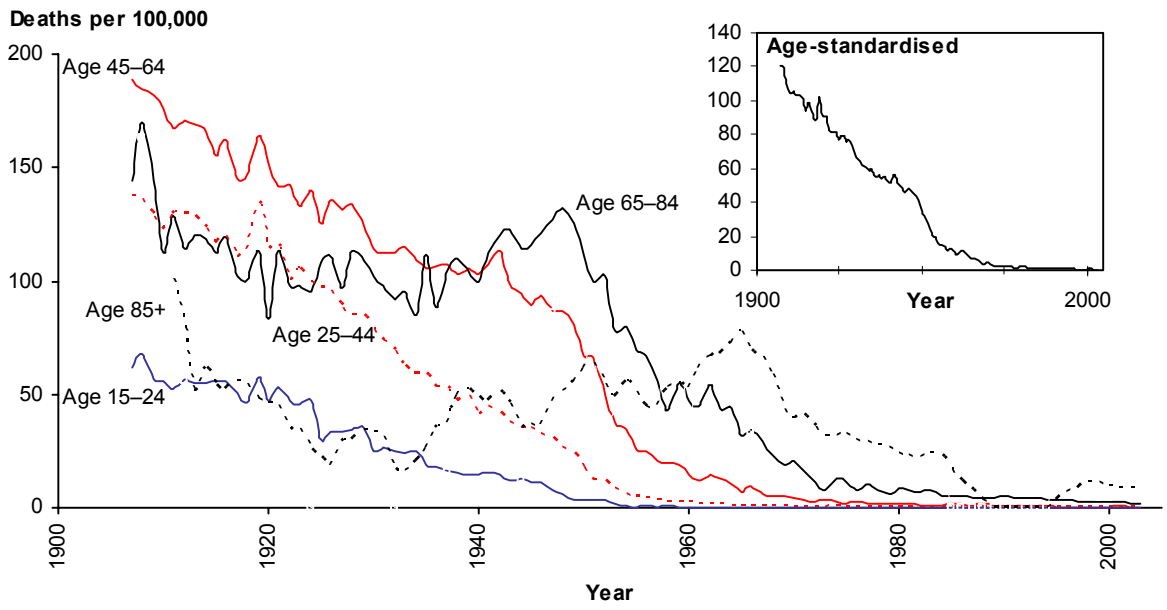
At the beginning of the twentieth century, tuberculosis was a major cause of death, ranking second among males and first among females (Table 5.1). Tuberculosis is a contagious bacterial disease that especially affects the lungs, causing fever-like symptoms and destruction of tissue. It can also spread to many other parts of the body, causing secondary problems and often death if not treated. Those with a healthy immune system may be able to avoid clinical illness even if infected, but in those with a weakened immune system the chances of becoming ill are greater.

Early in the twentieth century, the age-standardised death rates from tuberculosis were around 120 per 100,000 population for males and around 90 for females (tables B15 and B16). The rates fell markedly and progressively over the century so that by 1980 they had virtually disappeared for both sexes. In 2000 the rates were 4 per million for males and 2 for females (figures 5.4 and 5.5; tables B15 and B16). This great fall can be attributed to various improvements over the century such as better general living conditions, the use of antibiotics, tuberculosis sanatoriums, immunisation and screening.

Instances of tuberculosis still occur in migrant populations and in persons with immunity-depressing conditions such as HIV/AIDS.

Age-specific death rates

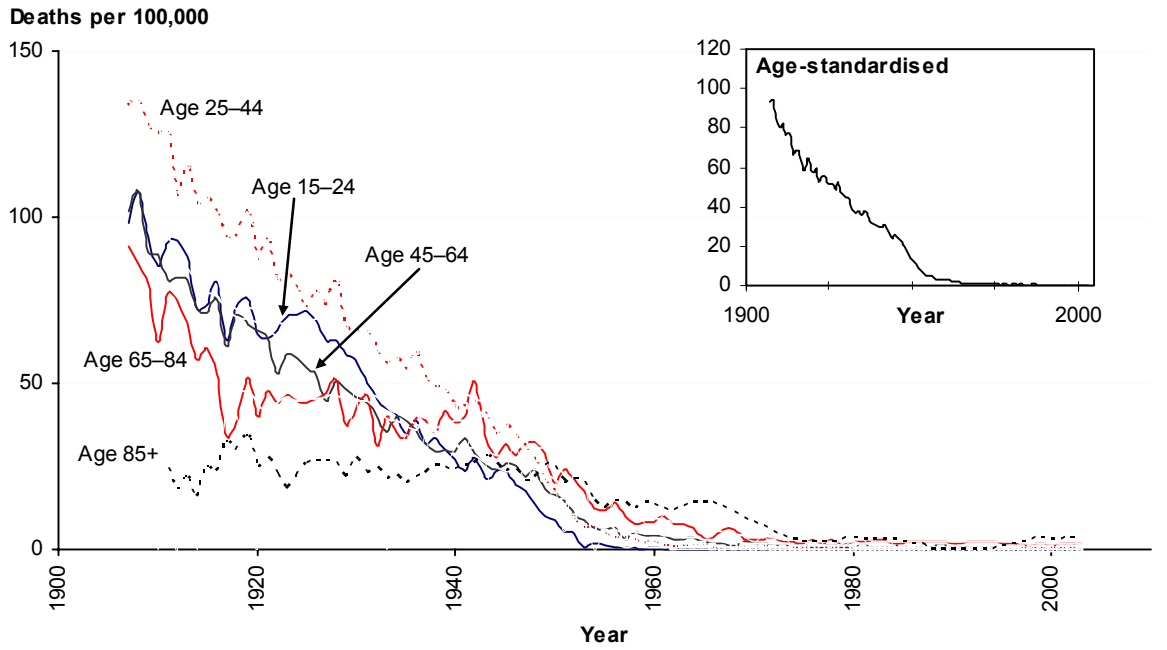
At the beginning of the century, among 45-64-year-olds tuberculosis claimed almost 180 deaths per 100,000 males and 89 deaths per 100,000 females. For males in the 64–84 year age group the death rate in 1910 was 112 per 100,000 population and for females it was 62 per 100,000. The death rate for males and females aged 25–44 was around 125 per 100,000 population (figures 5.4 and 5.5; Table B46). By 2000, however, the rates in all age groups were very low, with no deaths for persons under 50 years of age and a total of 55 deaths in all.



Note: The rates shown for the 85 or over age group are 5-year moving averages. This smoothing process (see Box 5.2) is unlikely to show the correct rate for any particular year and so may differ from the accurate rates given in the text or tables.

Source: AIHW GRIM Books.

Figure 5.4: Age-specific and age-standardised death rates for tuberculosis, males, 1907–2003



Note: The rates shown for the 85 or over age group are 5-year moving averages. This smoothing process (see Box 5.2) is unlikely to show the correct rate for any particular year and so may differ from the accurate rates given in the text or tables.

Source: AIHW GRIM Books.

Figure 5.5: Age-specific and age-standardised death rates for tuberculosis, females, 1907–2003

Lung cancer, from 1945

Background

As indicated in Chapter 4, the twentieth century epidemic of lung cancer rose from very low levels to become the single greatest cause of cancer death, which it remained at the end of the century. The incidence of lung cancer and its relationship with tobacco smoking has long been studied (AIHW 2000).

Lung cancer is highly fatal, with most cases dying within a year of diagnosis, one of the lowest 5-year survivals for cancer at less than 15% and only a slight improvement in survival over the last two decades (AIHW 2001). It occurs most often among 'older' persons because it usually takes decades for cancer-causing agents in tobacco smoke to have full effect. Under earlier versions of the classificatory system (ICD-4 and ICD-5), lung cancer was included in respiratory system cancers and was not separately identified until ICD-6 in 1950. Some adjustment to ICD-5 code 47 (cancer of the respiratory system) was done to take lung cancer death statistics back to 1945, to establish a series from the end of World War II.

Age-standardised deaths in 1945 for males and females were 11 and 3 deaths per 100,000 population respectively. For males, those rates rose to a peak at around 80 deaths per 100,000 population in 1982, after which they fell to 55 in 2000. For females, the age-standardised death rates continued a steady rise to the end of the century, reaching 22 deaths per 100,000 population in 2000 (figures 5.6 and 5.7; tables B9 and B10).

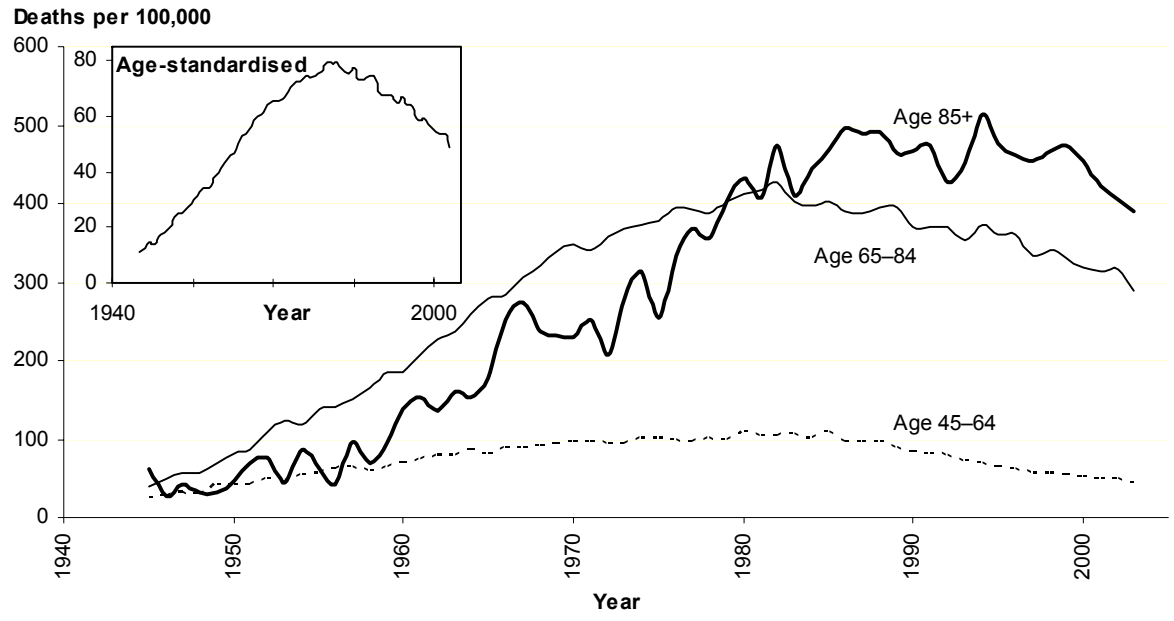
Age-specific death rates

Lung cancer death rates for males and females exhibited different trends during the 1945–2000 period. For males aged 65–84, the rates peaked in the first half of the 1980s before falling markedly, whereas for those aged 85 or over a fall occurred much more recently and is much smaller. For males aged 45–64, the rate halved from its peak in the early 1980s to 51 deaths per 100,000 in 2000, approaching the 1950 rate of 42. For those aged 65–84 the rates increased from 40 deaths per 100,000 in 1945 to 427 in 1982, before falling to 317 in 2000. Among those males aged 85 or over the rates were 62 deaths per 100,000 in 1945, rose to a peak at 512 in 1994, and then fell to 450 in 2000 (Figure 5.6; tables B29, B35 and B41).

For females, death rates in 1945 were 6, 15 and 14 deaths per 100,000 females for the 45–64, 65–84 and 85 or over age groups respectively. Rates for ages 45–64 increased to around 30 deaths per 100,000 during the early 1980s and remained at that level until the mid-1990s before falling slightly. However, for older females, the rates increased steadily throughout the second half of the century, reaching around 136 deaths per 100,000 in 2000 among those aged 85 or over (Figure 5.7; tables B30, B36 and B42).

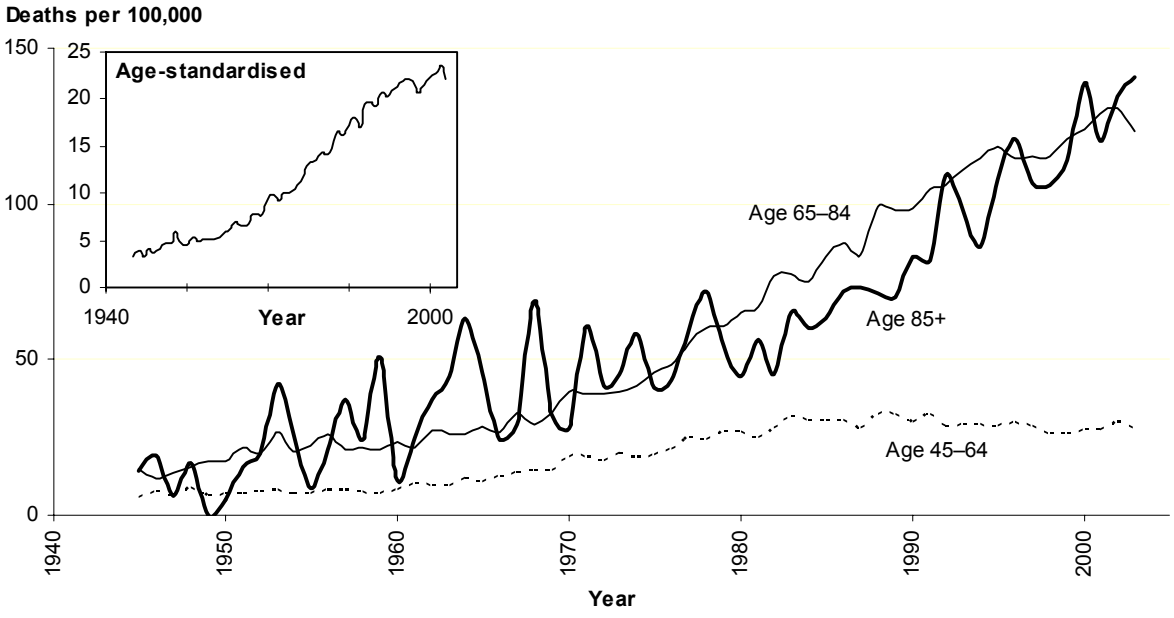
The death rate for younger males (aged 25-44) increased to around 5 deaths per 100,000 in 1967, falling to 2 by 2000. For the females of the same age, the rate

remained relatively constant between 1 and 2 deaths per 100,000 throughout the period (AIHW GRIM Books).



Source: AIHW GRIM Books.

Figure 5.6: Age-specific and age-standardised death rates for lung cancer, males, 1945–2003



Source: AIHW GRIM Books.

Figure 5.7: Age-specific and age-standardised death rates for lung cancer, females, 1945–2003

Colorectal cancer, from 1922

Background

Colorectal cancer (which includes cancer of the colon, rectum, anus and appendix) is second only to lung cancer as a cause of cancer-related deaths in Australia. Colorectal cancer is a growth that starts in the bowel wall, and it is believed that most such cancers begin as benign growths known as polyps, especially a particular kind of polyp known as an adenoma. A proportion of polyps become colorectal cancer over time. More than two-thirds of colorectal cancers and related deaths are considered to be preventable (AIHW & AACR 2003).

In 2000, nearly 12,500 Australians were diagnosed with colorectal cancer, and of these more than 60% could be expected to survive 5 years or more after diagnosis. There were about 4,700 deaths from colorectal cancer in 2000 (AIHW & AACR 2003).

Deaths from colorectal cancer began being specifically measured in 1979 under ICD-9, but numbers have been pro-rated back to 1922 for earlier ICD revisions (Item 46 under ICD-5 reported cancer of the peritoneum, intestines and rectum). The male rate at the end of the century was similar to the 1920s rate, but had fallen since a peak in the mid-1980s. By contrast, the female rate went into a continuous modest fall after an initial rise up to the 1940s, and by 2000 was notably lower than in 1922 (figures 5.8 and 5.9; tables B9 and B10).

It is estimated that age-standardised death rates for colorectal cancer in 1922 were 28 for males per 100,000 population and 27 for females (tables B9 and B10). For males, the rate rose to around 36 deaths per 100,000 population in 1944, and again to 38 in 1983 after a moderate fall, before falling to 31 in 2000. For females, the death rate rose to around 34 per 100,000 in the late 1940s, after which it fell to 21 in 2000.

Age-specific death rates

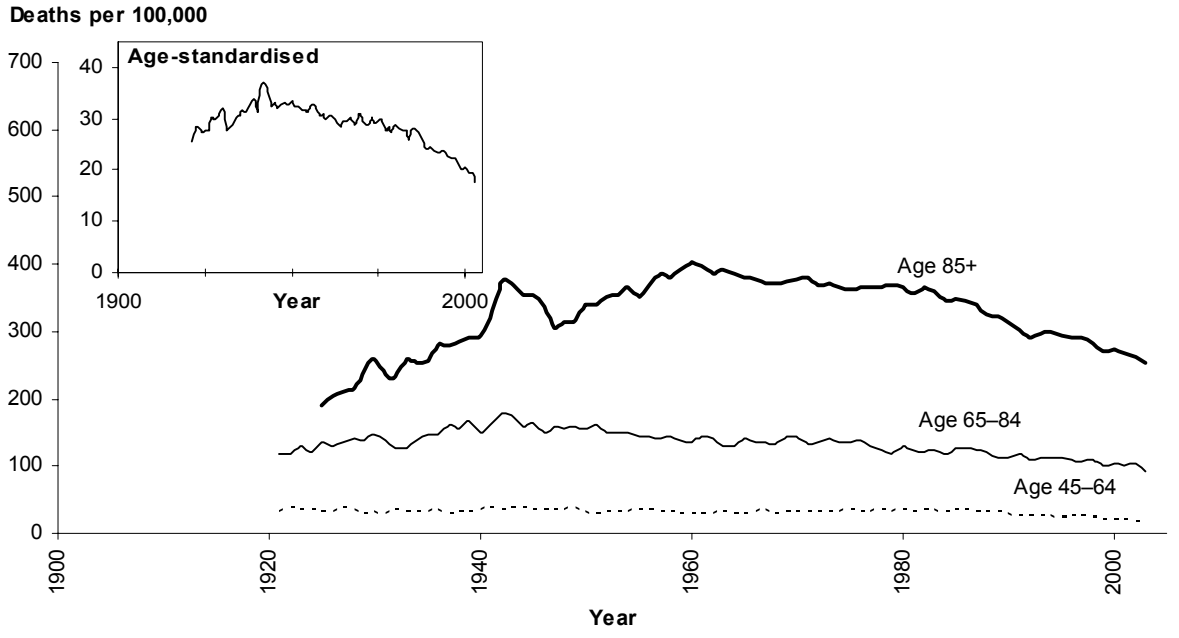
In the 85 or over age group, deaths from colorectal cancer increased during the first half of the century for both males and females. After the 1950s, death rates for females in this age range fell steadily down to 278 per 100,000 in 2000. However, for males the rates continued at about 400 deaths per 100,000 until around the early 1990s, after which the rates fell to 321 in 2000 (figures 5.8 and 5.9; tables B41 and B42).

For males in the 65–84 age range, death rates for colorectal cancer remained constant over the latter 60 years of the century at around 170 per 100,000 population. For females, the rate fell slowly from around 150 deaths per 100,000 during the 1940s and 1950s to 125 in the 1980s and 103 in 2000 (tables B35 and B36). Rates for males aged 45–64 remained constant during most of the century at around 35 deaths per 100,000 except for a small rise during the 1980s before falling to 31 in 2000. For females aged 45–64 the rate was steady around 30 deaths per 100,000 before falling during the last decade to 21 in 2000 (tables B29 and B30).

Note: The rates shown for the 85 or over age group are 5-year moving averages. This smoothing process (see Box 5.2) is unlikely to show the correct rate for any particular year and so may differ from the accurate rates given in the text or tables.

Source: AIHW GRIM Books.

Figure 5.8: Age-specific and age-standardised death rates for colorectal cancer, males, 1922–2003



Note: The rates shown for the 85 or over group are 5-year moving averages. This smoothing process (see Box 5.2) is unlikely to show the correct rate for any particular year and so may differ from the accurate rates given in the text or tables.

Source: AIHW GRIM Books.

Figure 5.9: Age-specific and age-standardised death rates for colorectal cancer, females, 1922–2003

Female breast cancer

Background

Breast cancer is the most commonly diagnosed cancer in Australian females after non-melanoma skin cancer. It is also the largest cause of cancer death among Australian females by a small margin, claiming 2,511 lives in 2000 compared with 2,291 for lung cancer.

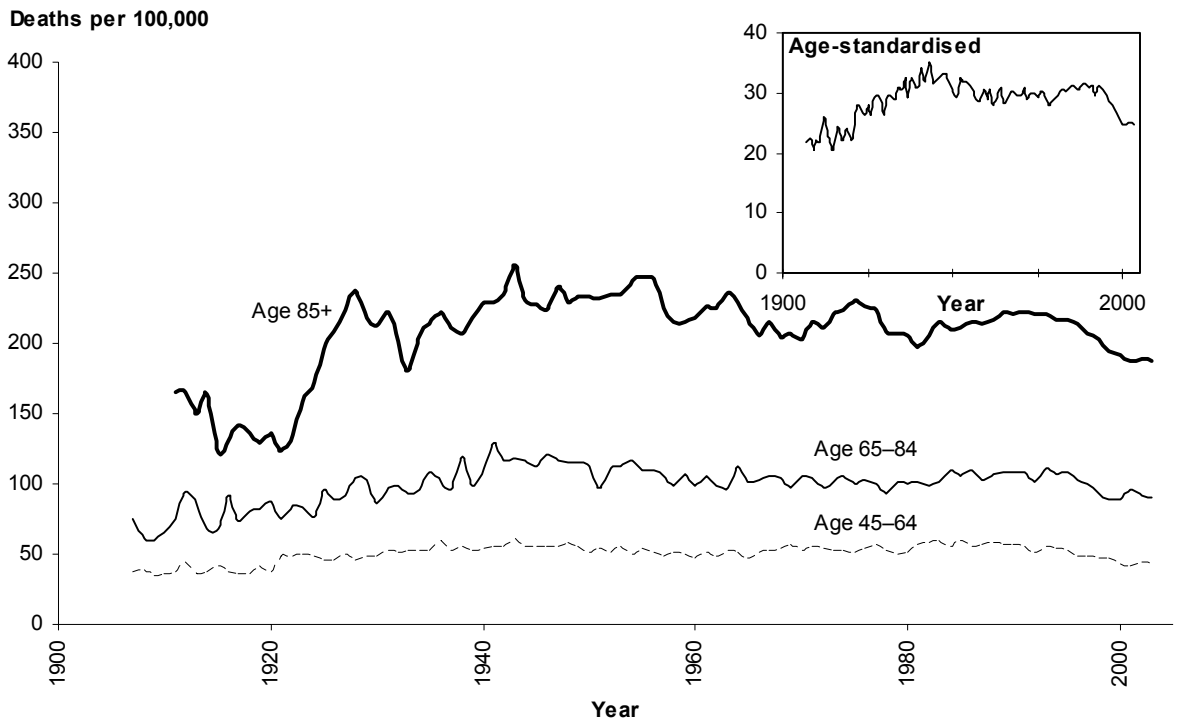
Most breast cancers originate in the cells that line the lobules that produce milk or the ducts that carry milk from the lobules. One in 12 women will develop breast cancer by the age of 75. In recent times more than 80% of breast cancers occurred in females aged over 50 years.

The age-standardised death rate from breast cancer for females rose from around 20 deaths per 100,000 population early in the century to a peak of about 35 in the mid-1940s. It remained around that level until the mid-1980s, then fell to 25 in 2000 (Figure 5.10 ;Table B10).

Age-specific death rates

As with the age-standardised rate, the various age-specific death rates from breast cancer remained relatively constant through the century. The rates in 1907 were 135, 75 and 37 deaths per 100,000 females, for those aged 85 years or over, 65–84 and 45–64 respectively; and were 191, 88 and 43 respectively in 2000 (Figure 5.10; tables B30, B36 and B42).

Comparing early in the century with the end, there was a small rise in the age-standardised and age-specific death rates from breast cancer. However, during the last 10 years of the century there were consistent, distinct falls. From 1990 to 2000, the rates fell from 211 to 191, 109 to 88 and 57 to 43 deaths per 100,000 for the respective age ranges of 85 or over, 65–84, and 45–64.



Note: The rates shown for the 85 or over age group are 5-year moving averages. This smoothing process (see Box 5.2) is unlikely to show the correct rate for any particular year and so may differ from the accurate rates given in the text or tables.

Source: AIHW GRIM Books.

Figure 5.10: Age-specific and age-standardised death rates for breast cancer, females, 1907–2003

Prostate cancer, from 1922

Background

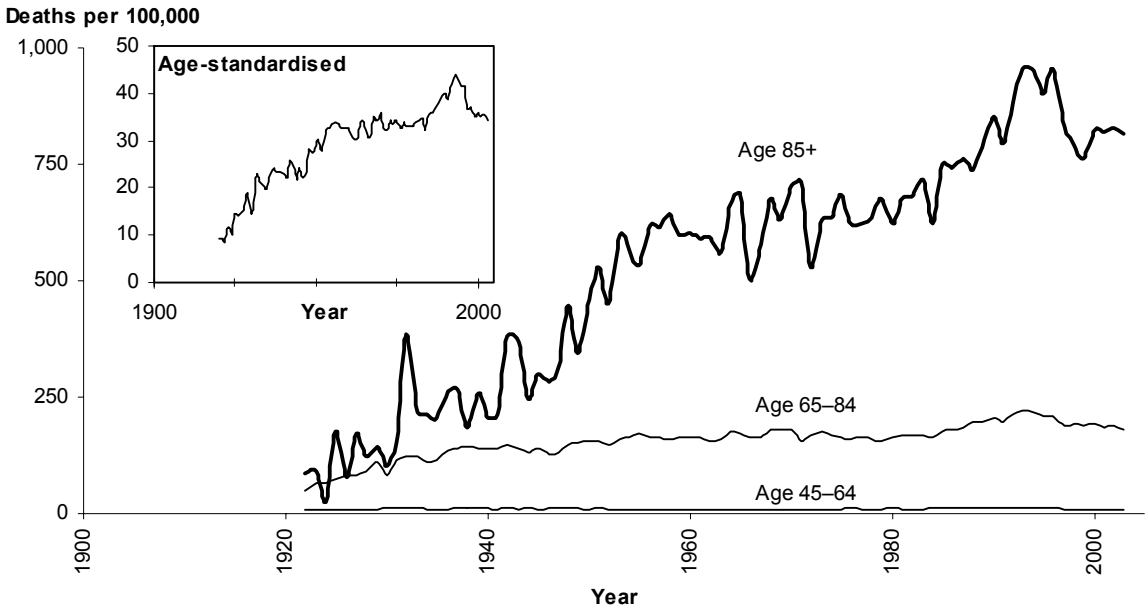
Prostate cancer is a malignant tumour of the prostate, a gland found only in males. Prostate cancers can be in two main forms, early or advanced. Early prostate cancers (also known as localised prostate cancers) are contained within the prostate. In some cases they may not cause problems for many years and may not need treatment, but in other cases they may be aggressive. With advanced prostate cancer the tumour has grown faster and spread to the tissues or bones near the prostate or to other places in the body.

As life expectancy for males has increased through most of the century, so has their risk of developing and dying from age-related cancers such as prostate cancer. It has become a leading cause of cancer deaths in males.

Prostate cancer is one cancer whose age-standardised death rate has shown a clear increase over most of the century. As will be seen below, however, the rise from 1922 to 2000 was largely due to increases in the rate for those aged 85 years or over. The age-standardised rate increased from 8 deaths per 100,000 population in 1922 to around 44 deaths per 100,000 in 1993. The rates then fell to 36 deaths per 100,000 population in 2000, although this was still a considerably higher level than when rates were first documented (Figure 5.11; Table B9).

Age-specific death rates

From the early 1950s to 2000 in the 85 or over age range, prostate cancer deaths were the leading cause of cancer deaths. Age-specific rates increased from 85 to around 800 deaths per 100,000 in this age range (whose average age increased along with life expectancy — see Chapter 2). The age-specific death rates for males aged 65–84 increased from 49 to over 200 deaths per 100,000 in the last decade of the century, while rates for males aged 45–64 remained relatively stable around 10 deaths per 100,000 over the period examined (Figure 5.11; tables B29, B35 and B41).



Source: AIHW GRIM Books.

Figure 5.11: Age-specific and age-standardised death rates for prostate cancer, 1922–2003

Stomach cancer, from 1922

Background

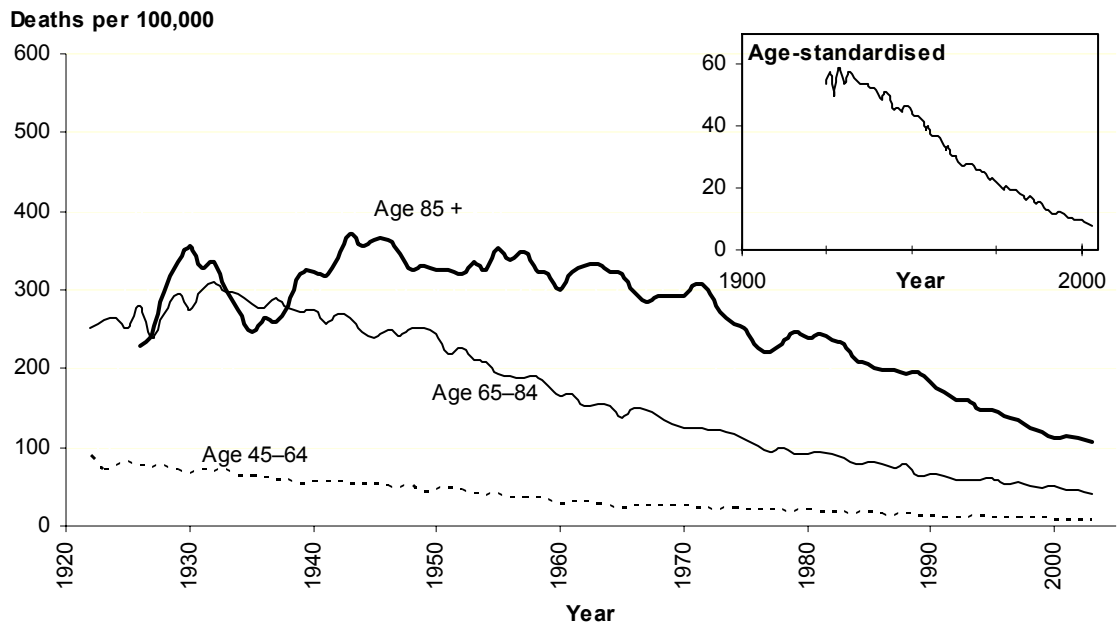
Stomach cancer deaths were the single leading cause of cancer deaths early in the 1920s, but they showed a remarkable and continuous fall in age-standardised rates for both males and females over the ensuing eight decades. Male rates were consistently higher than female rates.

Deaths from stomach cancer were first specifically measured in 1950 under ICD-6. However, deaths from ICD-5 item 44 (cancer of the stomach and liver) have been prorated back to 1922, showing that age-standardised rates for males and females then were around 54 and 34 deaths per 100,000 population respectively. Rates fell steadily throughout the century to 10 and 4 deaths per 100,000 in 2000 respectively (figures 5.12 and 5.13; tables B9 and B10).

Stomach cancers have been broadly linked to diets high in smoked, pickled and salted foods and low in fresh fruit and vegetables; and to infection with the bacterium *Helicobacter pylori* (WHO 2003).

Age-specific death rates

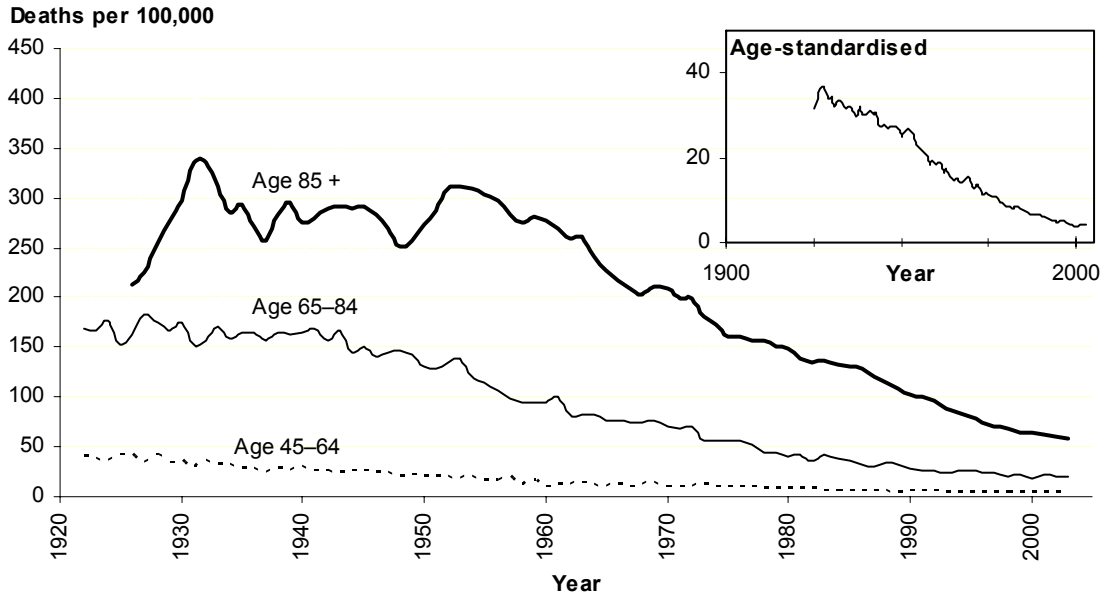
In 1922, the age-specific rates for males were around 90, 252 and 170 deaths per 100,000 males aged 45–64, 65–84 and 85 plus years, respectively. Rates for males aged 85 or over peaked at different times in the century, exceeding 400 deaths per 100,000 during the 1930s and 1950s. For females in 1922, the rates were 40, 169 and 268 deaths per 100,000 for those aged 45–64, 65–84 years and 85 or more years respectively. For females aged 85 or over, the rates also climbed to exceed 300 deaths per 100,000 during the 1930s and 1950s. As food habits changed, respective rates for the three age groups fell to 8, 51 and 112 deaths per 100,000 males and to 3, 19 and 58 deaths per 100,000 females by the end of the century (figures 5.12 and 5.13; tables B29, B30, B35, B36, B41 and B42).



Note: The rates shown for the 85 or over age group are 5-year moving averages. This smoothing process (see Box 5.2) is unlikely to show the correct rate for any particular year and so may differ from the accurate rates given in the text or tables.

Source: AIHW GRIM Books.

Figure 5.12: Age-specific and age-standardised death rates for stomach cancer, males, 1922–2003



Note: The rates shown for the 85 or over age group are 5-year moving averages. This smoothing process (see Box 5.2) is unlikely to show the correct rate for any particular year and so may differ from the accurate rates given in the text or tables.

Source: AIHW GRIM Books.

Figure 5.13: Age-specific and age-standardised death rates for stomach cancer, females, 1922–2003