

6 Respiratory disease

This chapter discusses mortality due to the broad category of respiratory disease (ICD-10 chapter 10, codes J00–J99). It then provides further analysis of specific diseases within this broad category. The specific respiratory diseases included are:

1. chronic obstructive pulmonary disease;
2. pneumonia;
3. asthma;
4. influenza; and
5. other respiratory diseases.

These diseases were chosen because they tend to be the most frequent specific causes of death within this category, are national health priorities (for example, asthma) or substantially affect Indigenous populations.

Summary of findings

The overall mortality of Australians due to respiratory diseases increases with increasing remoteness. Compared to those in Major Cities, death rates due to respiratory diseases were:

- 1.05–1.2 times as high in regional areas; and
- 1.25–1.9 times as high in remote areas.

This broad observation does not take into account two factors previously stated on page 33, namely the likely effect on rates of high Indigenous mortality coupled with their greater representation outside Major Cities, and the possible effect of the migration of the frail aged. Indigenous mortality is more than 4 times as high as for Major Cities non-Indigenous mortality (Table 6.2), apparently strongly raising rates for the total population in remote areas. In some age groups, Indigenous rates were 10, 15 or 30 times as high as for non-Indigenous people from Major Cities.

For non-Indigenous people:

- in regional areas, rates were 1.1–1.2 times as high for males, and similar for females compared to rates in Major Cities; and
- in remote areas, rates were not significantly different from those for counterparts in Major Cities.

When analysis was restricted to non-Indigenous Australians under the age of 65 years, the differential remains, but is a little greater than for the total non-Indigenous population. In regional areas there were 1.2–1.5 and 1.1–1.2 times as many deaths of males and females as expected, while in remote areas, rates were more likely to be significantly higher (twice the number of Very Remote area males and 1.8 times the number of Remote area females as expected).

For Indigenous males and females younger than 65 years, death rates due to respiratory diseases were more than 10 times greater than for their Major Cities non-Indigenous counterparts.

Between 1992 and 1999, death rates due to respiratory disease decreased at 5–6% per annum for males, 1–2% for females, but at 11% for males in Remote areas and at over 30% for both males and females from Very Remote areas.

Annually, there were 330 ‘excess’ deaths (Table 6.1) due to respiratory diseases outside Major Cities (102, 156, 32 and 40 in each of the four areas). However, there were 66 fewer deaths than expected amongst those older than 80 years (that is, there were 395 ‘excess’ deaths of those younger than 80 years). Of these people, 11% were younger than 50 years, 26% were aged 50–64 years, and 63% were aged 65–79 years. Between 70% and 80% were male. For non-Indigenous people there were only slightly fewer deaths than expected in those who were 75 years and older, but otherwise the percentages were similar. For Indigenous people, 23% were aged 25–44 years, 60% were aged 45–64 years and only 15% were 65 years or older.

Respiratory diseases account for about 8% of all deaths and 9–10% of ‘excess’ deaths, both for the total population and the Indigenous populations.

Summary/discussion of individual causes of death reviewed in this chapter

Chronic obstructive pulmonary disease (COPD) is the most common cause of death in this broad group, responsible for 60% of respiratory deaths. Other important causes were pneumonia (18%) and ‘other’ respiratory diseases (15%). Asthma (5%) and influenza (2%) were responsible for a small proportion of respiratory deaths. COPD was responsible for over 100% of the ‘excess’ deaths and asthma and influenza for 6% and 8% of the ‘excess’ deaths due to respiratory diseases. There were fewer deaths due to ‘other’ respiratory diseases and pneumonia.

Of all the causes of respiratory death, COPD appeared to have by far the largest impact on mortality. Rates were 1.2 and 1.3 times as high in Inner and Outer Regional and Remote areas and 1.9 times as high in Very Remote areas. A substantial proportion (over 80%) was due to higher death rates amongst males. In Very Remote areas particularly, higher rates were largely influenced by the high rate of death for Indigenous people (3.4 times as high) due to this cause. Rates for non-Indigenous people were between 20% and 40% higher for males and similar for females (or 10% higher for females in Outer Regional areas) in regional and remote areas. Rates for both non-Indigenous males and females younger than 65 years increased with remoteness from 1.3 to 2.8 times the rates for similar people from Major Cities.

There were 7 times as many deaths of Indigenous people as a result of pneumonia as expected, the higher rates for Indigenous people elevating overall death rates for the total populations in Remote and Very Remote areas. Pneumonia death rates for the total population ranged from 0.9 times (that is, lower) in Inner Regional areas to 2.3 times the Major Cities rate in Very Remote areas. However, for the non-Indigenous population younger than 65 years, there was no significant difference between rates in any of the areas and those in Major Cities.

Table 6.1: Summary table of deaths due to respiratory disease for all persons, 1997–1999

Cause	Annual deaths outside Major Cities			Annual 'excess' deaths outside Major Cities			Age groups in which the 'excess' occurs
	No.	%	% male	No.	%	% male	
COPD	2,173	61%	66%	374	113%	83%	20%: 55–65 years 75%: 65–80 years
Pneumonia	635	18%	42%	–14	–4%	—	85%: 30–65 years Fewer than expected 70+ years
Asthma	172	5%	42%	21	6%	57%	All life stages, mainly over 30 years
Influenza	63	2%	48%	27	8%	56%	20%: 70–80 years 70%: 80+ years
Other respiratory diseases	548	15%	56%	–78	–24%	51%	Less than 60 years Fewer than expected 70+ years
Total respiratory diseases	3,591	100%	59%	330	100	84%	15% 30–55 years 20%: 55–65 years 60%: 65–80 years

Notes: Descriptions of the age groups within which the 'excess' occurs apply only to the total population.

Source: AIHW National Mortality Database.

Asthma death rates were 1.2 and 1.5 times as high in Outer Regional and Remote areas. There were 3 times as many deaths of Indigenous people as expected. For non-Indigenous people and for those younger than 65 years, there were slightly, but not significantly, more deaths than expected (except in Outer Regional areas where there were 1.3 times as many asthma deaths as expected).

The numbers of Indigenous deaths due to influenza were not significantly different from the numbers expected. For the total population and for the non-Indigenous population, there were 1.6 and 1.9 times as many deaths as expected, and in Remote areas there were 3.2–3.4 times as many deaths as expected (the number in Very Remote areas was very small). There were few deaths of people younger than 65 years.

There were fewer deaths than expected due to 'other' respiratory diseases in regional areas, primarily because of the lower death rates of elderly people. For the total population in Very Remote areas there were 1.6 times as many deaths as expected from this cause, a consequence of higher death rates for Indigenous people (5 times those for non-Indigenous people from Major Cities). There were about as many deaths of non-Indigenous people in remote areas due to this cause as expected.

Table 6.2: The ratio of observed deaths from respiratory diseases to those expected if Major Cities^(a) rates applied in each ASGC Remoteness area, 1997–1999

Cause	Population	IR	OR	R ^(b)	VR ^(b)	National ^(c)
COPD	All persons	*1.2	*1.3	*1.3	*1.9	n.p.
	Non-Indigenous	*1.1	*1.3	*1.2	*1.3	n.p.
	Non-Indigenous (aged 0–64 years)	*1.3	*1.6	*1.8	*2.8	n.p.
	Indigenous	n.p.	n.p.	n.p.	n.p.	*3.4
	Indigenous (aged 0–64 years)	n.p.	n.p.	n.p.	n.p.	*8.8
Pneumonia	All persons	*0.9	1.0	*1.3	*2.3	n.p.
	Non-Indigenous	*0.9	1.0	1.1	1.1	n.p.
	Non-Indigenous (aged 0–64 years)	1.2	1.2	0.8	1.8	n.p.
	Indigenous	n.p.	n.p.	n.p.	n.p.	*7.2
	Indigenous (aged 0–64 years)	n.p.	n.p.	n.p.	n.p.	*23.7
Asthma	All persons	1.1	*1.2	*1.5	1.4	n.p.
	Non-Indigenous	1.1	1.2	1.5	0.8	n.p.
	Non-Indigenous (aged 0–64 years)	1.2	*1.3	1.8	0.8	n.p.
	Indigenous	n.p.	n.p.	n.p.	n.p.	*3.0
	Indigenous (aged 0–64 years)	n.p.	n.p.	n.p.	n.p.	*3.8
Influenza	All persons	*1.6	*1.9	*3.2	2.1	n.p.
	Non-Indigenous	*1.6	*1.9	*3.4	1.2	n.p.
	Non-Indigenous (aged 0–64 years)	*2.3	1.1	3.9	5.7	n.p.
	Indigenous	n.p.	n.p.	n.p.	n.p.	3.0
	Indigenous (aged 0–64 years)	n.p.	n.p.	n.p.	n.p.	5.9
Other respiratory diseases	All persons	*0.8	*0.9	1.0	*1.6	n.p.
	Non-Indigenous	*0.8	*0.9	0.8	0.6	n.p.
	Non-Indigenous (aged 0–64 years)	0.8	1.1	1.1	0.7	n.p.
	Indigenous	n.p.	n.p.	n.p.	n.p.	*5.2
	Indigenous (aged 0–64 years)	n.p.	n.p.	n.p.	n.p.	*12.5
Total respiratory diseases	All persons	*1.0+	*1.2	*1.3	*1.9	n.p.
	Non-Indigenous	*1.0+	*1.1	*1.1	1.1	n.p.
	Non-Indigenous (aged 0–64 years)	*1.2	*1.4	*1.5	*1.9	n.p.
	Indigenous	n.p.	n.p.	n.p.	n.p.	*4.4
	Indigenous (aged 0–64 years)	n.p.	n.p.	n.p.	n.p.	*10.7

(a) While the number of expected deaths for the total population is based on the death rates of the total population from Major Cities, the expected number of deaths for the non-Indigenous population is based on the death rates of the non-Indigenous population from Major Cities. Because non-Indigenous people comprise the overwhelming majority (99%) of the population in Major Cities, these two standards are very similar, but not identical. This means that the ratios for the five population groups are not strictly comparable.

(b) Ratios calculated for non-Indigenous persons from Remote and Very Remote areas should be treated with caution (see page 22).

(c) The ratios for Indigenous persons are for Queensland, SA, WA and NT combined. Data for the total and non-Indigenous populations for this (SA, WA, NT & Qld) area adds little relevant information and has not been published (n.p.). Because of concerns about the quality of the data, ratios for Indigenous people have not been published (n.p.) for each area.

Notes

1. Bold text and asterisk indicates that ratios are significantly different from 1 at the 95% level.
2. 1.0+ indicates that there were slightly (but significantly) more deaths than expected (but less than 1.05 times more).
3. 1.0– indicates that there were slightly (but significantly) fewer deaths than expected (but more than 0.95 times as many).

Source: AIHW National Mortality Database.

6.1 Overview—respiratory diseases

Between 1997 and 1999, an annual average of 9,856 Australians died as a result of respiratory diseases, comprising 5,419 males and 4,437 females (Table 6.3). Most of these (6,265) occurred in Major Cities, with a further 3,356 in Inner and Outer Regional areas, and the remaining 235 in Remote and Very Remote areas.

Respiratory diseases were responsible for 8% of all deaths nationally, and 10% of the ‘excess’ deaths in areas outside Major Cities.

Table 6.3: Average annual deaths due to respiratory diseases, 1997–1999

	MC	IR	OR	R	VR	Total
Males (no.)	3,314	1,273	690	87	55	5,419
Females (no.)	2,951	940	453	61	32	4,437
Persons (no.)	6,265	2,213	1,143	148	87	9,856
Non-Indigenous males ^(a) (per cent)	100	99	96	84	47	98
Non-Indigenous females ^(a) (per cent)	100	99	96	84	34	98
Non-Indigenous persons^(a) (per cent)	100	99	96	84	41	98
Non-Indigenous males (0–64 yrs) (no.)	330	130	85	12	6	563
Non-Indigenous females (0–64 yrs) (no.)	270	99	53	10	3	435
Non-Indigenous persons (0–64 yrs)	600	228	138	22	9	997
Indigenous persons^(b) (no.)	n.p.	n.p.	n.p.	n.p.	n.p.	122

(a) Percentages and counts are rounded to the nearest whole number.

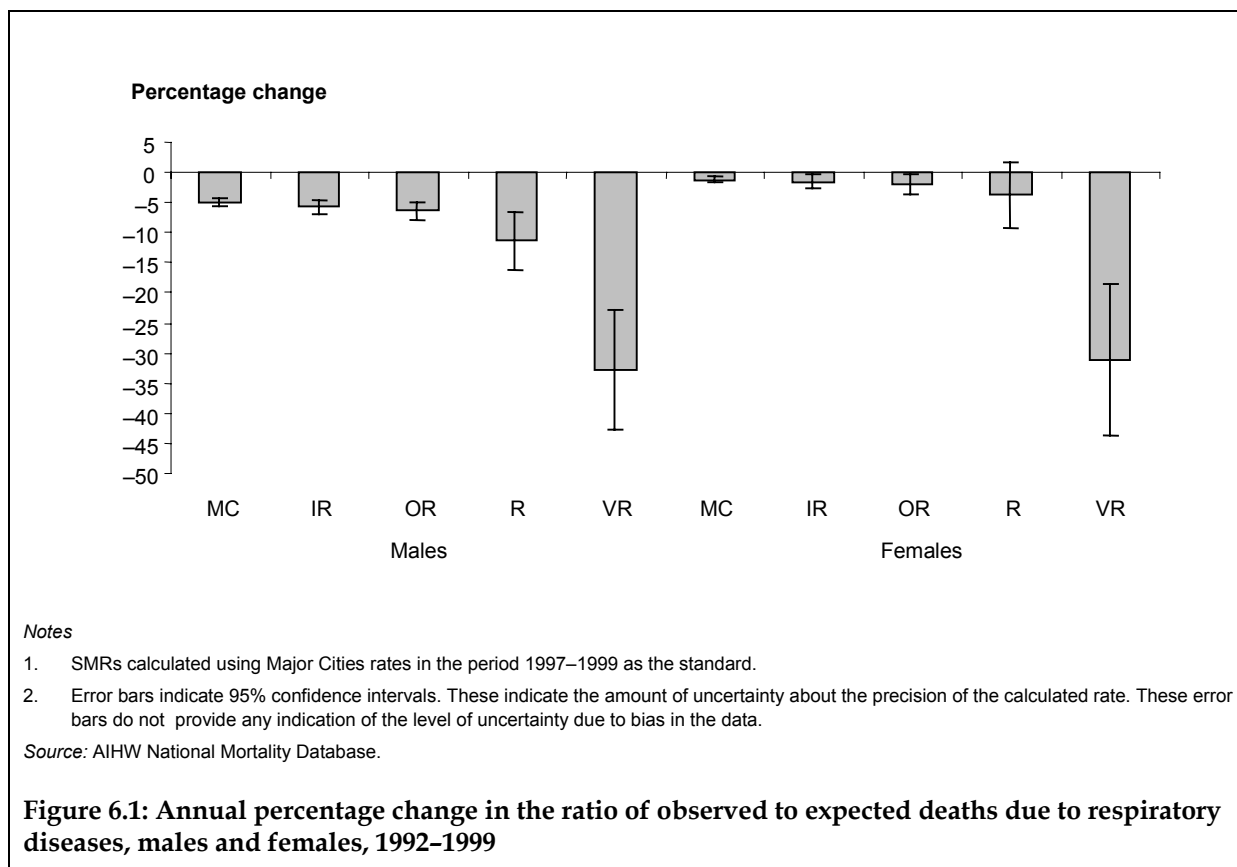
(b) The number of Indigenous deaths is the average annual number registered in SA, WA, NT and Qld in the period 1997–1999. An average of a further 37 were registered annually in the other jurisdictions. Counts of deaths have not been reported for Indigenous people by area because of concerns about data accuracy.

Source: AIHW National Mortality Database.

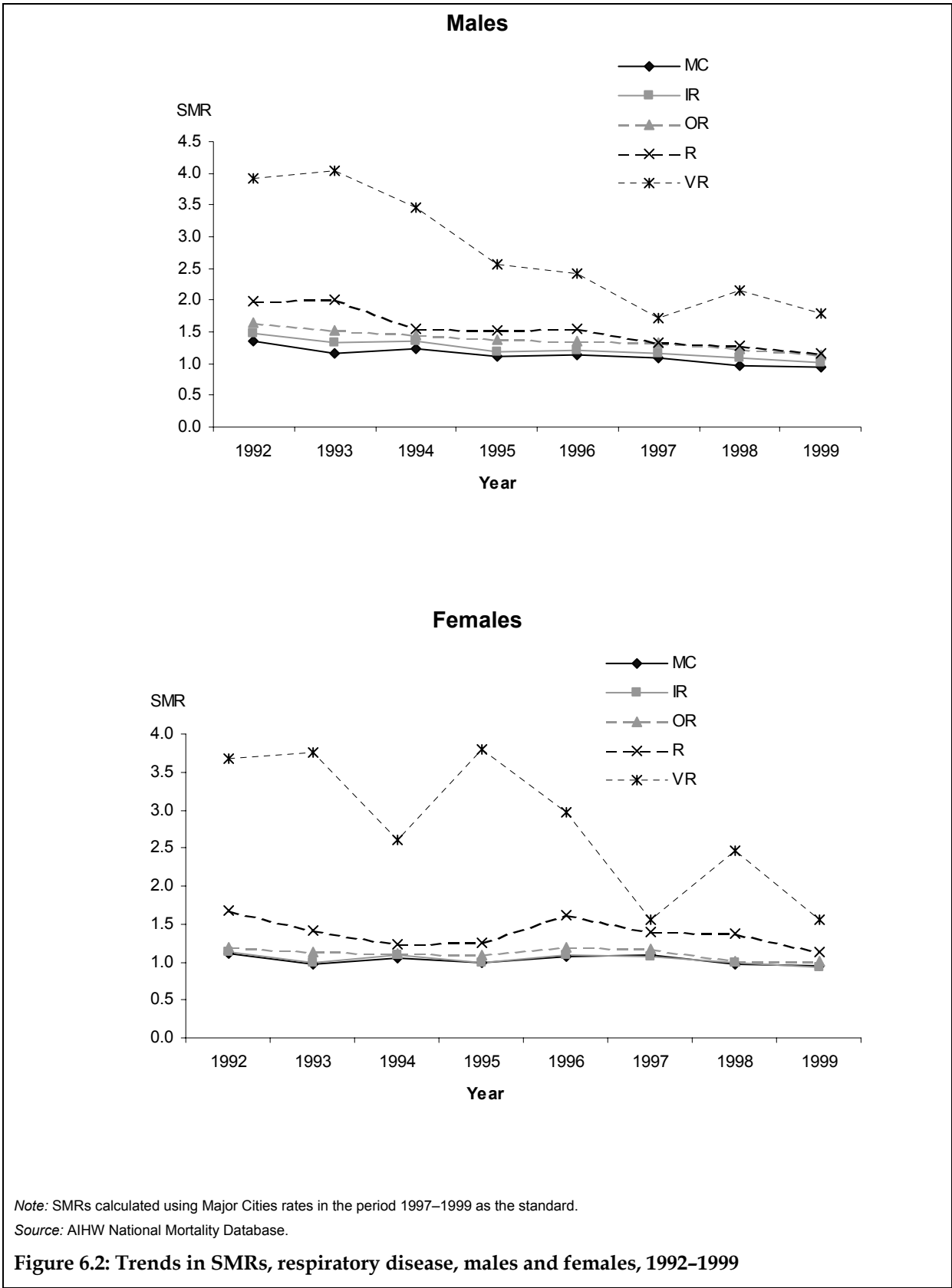
Trends in mortality due to diseases of the respiratory system

Death rates from this cause for both males and females decreased in all areas between 1992 and 1999 (although the decrease for females in Remote areas was not significant).

For males, annual percentage decreases were generally of the order of 5–6% in Major Cities and regional areas, but 11% and 30% in Remote and Very Remote areas (Figures 6.1 and 6.2). For females annual percentage decreases were smaller at 1–2% in Major Cities and regional areas, but reached 30% in Very Remote areas (such that the ratio of observed to expected deaths for males and females in Very Remote areas decreased from approximately 4 to less than 2 over the period 1992–1999).



The contribution of changes in respiratory disease death rates to the reduction in the overall number of 'excess' deaths was greater in more remote areas. Decreases in death rates due to respiratory diseases were responsible for 9%, 13%, 15%, 17% and 25% of the reduction in the overall number of 'excess' deaths in the five areas respectively.



Death rates due to respiratory diseases

Mortality due to respiratory diseases was higher for people living outside Major Cities (except for females in Inner Regional areas where rates were similar to those in Major Cities).

Figure 6.3 and Table 6.4 show that:

- For males from Inner and Outer Regional, Remote and Very Remote areas, death rates were respectively 1.1, 1.2, 1.3 and 1.9 times as high as for males living in Major Cities.
- For females in Inner Regional areas, rates were similar to those for females from Major Cities.
- For females from Outer Regional, Remote and Very Remote areas, death rates were respectively 1.05, 1.3 and 1.9 times as high as for females living in Major Cities.
- Death rates for Indigenous people were substantially higher (4–5 times as high) than for non-Indigenous people in any of the areas; this higher mortality substantially raises the average death rate, especially in the more remote areas (Table 6.5).

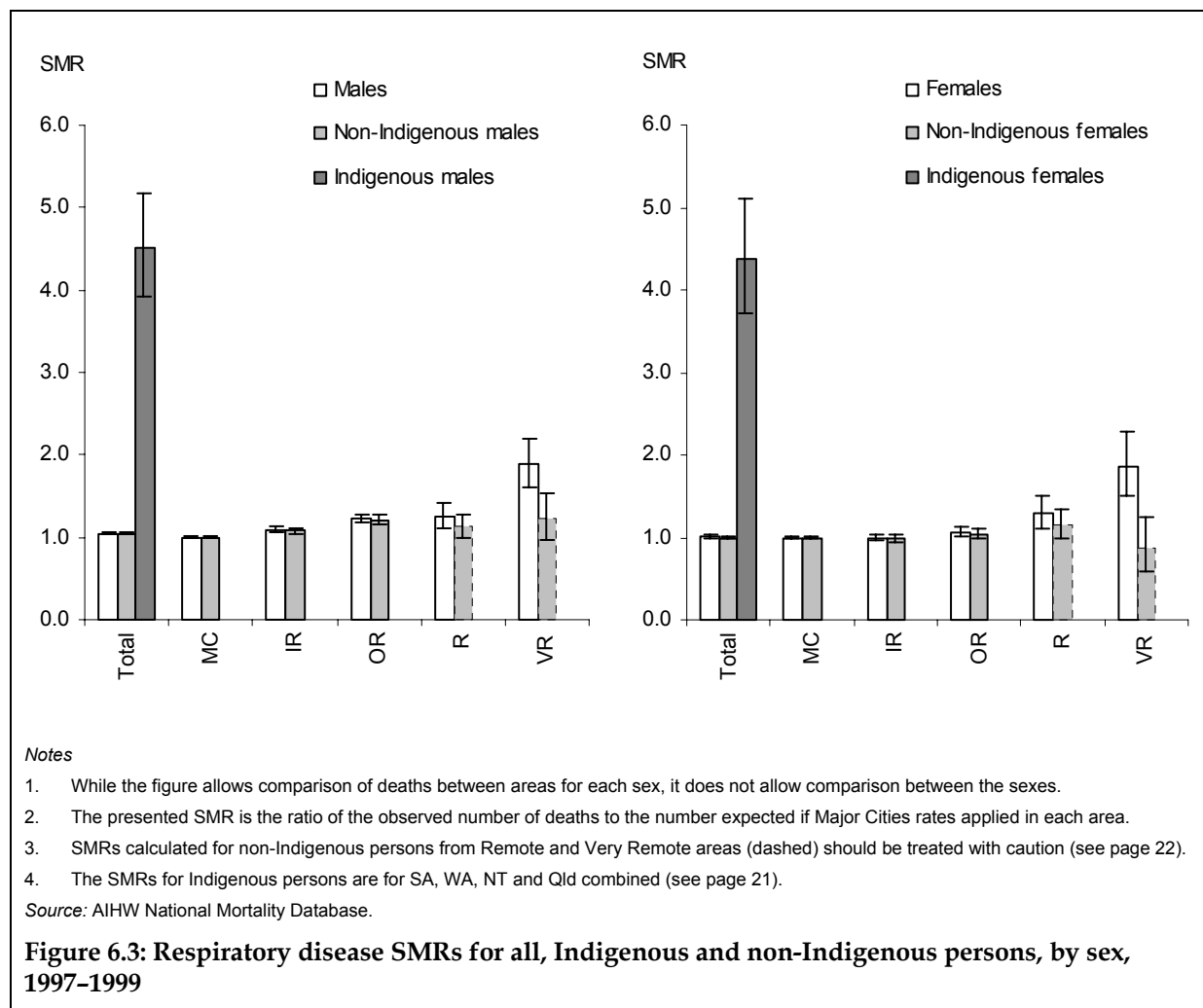
These figures would appear, on the surface, to show that mortality increases with increasing remoteness.

The above rates for the total population are influenced, however, by the number of Indigenous people living outside Major Cities and the high overall mortality of Indigenous people due to respiratory disease. Without examining the mortality of the Indigenous and non-Indigenous populations separately, therefore, it is premature to reach a definite conclusion that remoteness is a factor influencing the health of Australians.

Mortality of Indigenous people

Based on 1997–1999 death registrations, respiratory disease was a leading cause of death for Indigenous people living in South Australia, Western Australia, the Northern Territory and Queensland. These accounted for 8% of Indigenous deaths in these jurisdictions. Respiratory disease was one of the leading causes of death among the Australian population as a whole, accounting for 8% of all deaths. However, Indigenous males and females had higher death rates from this cause than the total population (Table 6.5).

In 1997–1999, there were approximately 4.5 times as many deaths of Indigenous males and females as expected if rates for people who lived in Major Cities had applied. Of these deaths 40% were attributable to chronic obstructive pulmonary disease (chronic bronchitis, emphysema, etc.), 30% were due to pneumonia, 24% due to 'other' respiratory diseases, 6% due to asthma and 1% due to influenza. Amongst other things, high rates of smoking amongst Indigenous people (Indigenous people are twice as likely as people in the total population to smoke) would contribute to higher rates of death for most, if not all, of these diseases (ABS 2002).



As discussed on page 21, uncertainty about the accuracy of identification of Indigenous deaths prevents reporting of Indigenous mortality in rural and remote areas.

Mortality of non-Indigenous people

In contrast to the total population, mortality from respiratory diseases did not rise consistently with increasing remoteness for the non-Indigenous population.

Death rates for non-Indigenous males from Inner and Outer Regional areas were 1.1 and 1.2 times those for males from Major Cities, while rates for males from remote areas, although slightly elevated, were not significantly higher (Table 6.5).

Death rates for non-Indigenous females from all areas were not significantly different from rates for females from Major Cities.

Mortality of people aged 0-64 years

Frequently, death rates of older non-Indigenous people from Remote and Very Remote areas are found to be substantially lower than those of similar aged people living in other areas, possibly reflecting a movement of older people with known health conditions into more populated areas to receive treatment, and eventually dying there. These lower rates can substantially affect the summary statistic described for non-Indigenous people above. For this reason, rates for 0-64-year-old non-Indigenous people are also presented here.

Death rates from respiratory disease for Indigenous males and females who are younger than 65 years were 12 and 10 times as high respectively as rates for non-Indigenous males and females of the same age from Major Cities (Figure 6.4 and Table 6.5).

Death rates from respiratory disease for non-Indigenous males younger than 65 years were 1.2, 1.5 and 2.0 times as high in Inner Regional, Outer Regional and Very Remote areas respectively, as for their counterparts from Major Cities. Rates in Remote areas, although elevated, were not significantly different from those for Major Cities.

Death rates from respiratory disease for non-Indigenous females younger than 65 years, were 1.1, 1.2 and 1.8 times as high in Inner Regional, Outer Regional and Remote areas respectively as for their counterparts from Major Cities. Rates in Very Remote areas, although elevated, were not significantly different from those for Major Cities.

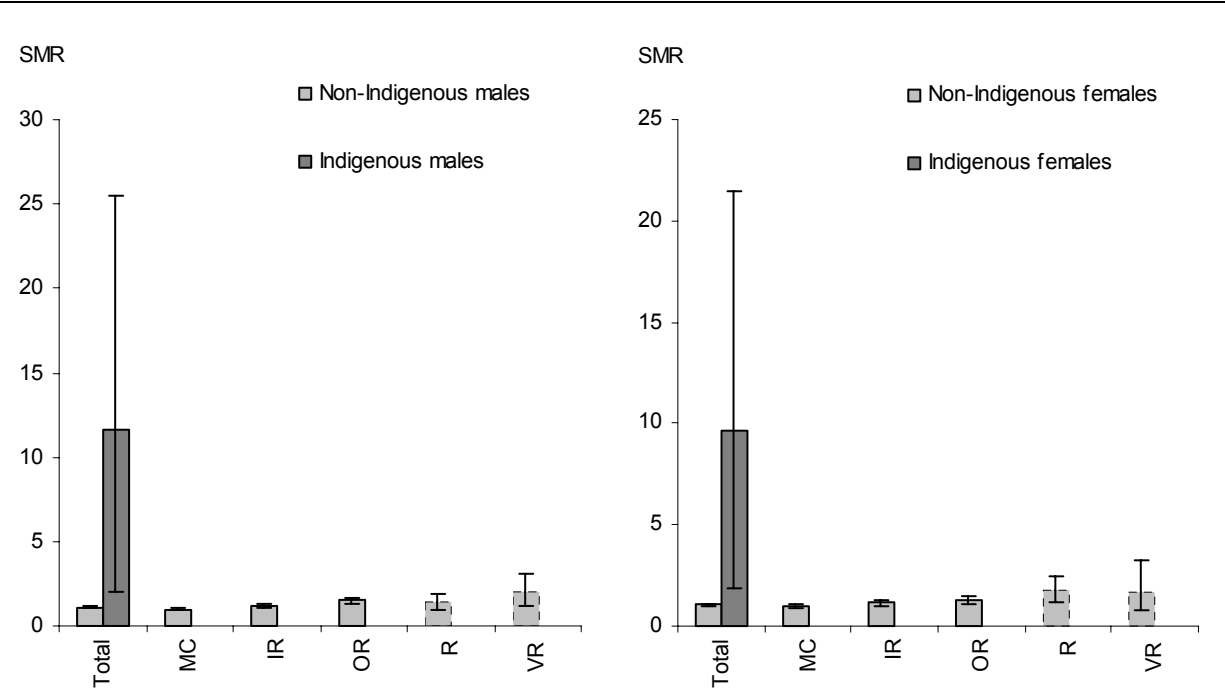
Variation by age group: respiratory diseases

An analysis of age-specific death rates gives more detailed information about each age group to confirm and supplement findings resulting from the broad analysis above using age-standardised rates.

Age-specific rates

Death rates as a result of respiratory disease tend to be higher, and in many cases substantially higher, outside Major Cities.

For both males and females, death rates were negligible until age 45 years. For males the rates then rose to reach 213 deaths per 100,000 per year at age 65–74 years and 870 deaths per 100,000 per year for those 75 years and older. For females the pattern was similar: rates rose to 531 deaths per 100,000 per year for those 75 years and older.



Notes

1. While the figure allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes.
2. The presented SMR is the ratio of the observed number of deaths to the number expected if Major Cities rates applied in each area.
3. SMRs calculated for non-Indigenous persons from Remote and Very Remote areas (dashed) should be treated with caution (see page 22).
4. The SMRs for Indigenous persons are for SA, WA, NT and Qld combined (see page 21).

Source: AIHW National Mortality Database.

Figure 6.4: Respiratory disease SMRs for Indigenous and non-Indigenous persons aged 0–64 years, by sex, 1997–1999

Rates for males younger than 25 years tended to be higher (but frequently not significantly so) outside Major Cities, particularly in remote areas where rates could be up to 6 times as high (Table 6.4 and Figures 6.5 and 6.6). For young females, rates were generally not significantly different (but for girls less than 5 years old were 4–5 times as high in remote areas).

For males aged 25–74 years, rates were 1.2–1.5, 1.3–2.0, 1.5–4.8 and 2.0–9.6 times as high in the four areas outside Major Cities as for their counterparts in Major Cities. For females the pattern was similar, with rates 1.1–1.2, 1.2–1.4, 1.5–2.5 and 2.1–9.6 times as high in these areas.

Rates for males older than 75 years were either not significantly different or about 10% (1.1 times) higher in Outer Regional areas. For females, rates were either not significantly different or lower (0.95 times the Major Cities rate in Inner Regional areas).

Table 6.4: The ratio of observed deaths to those expected if Major Cities rates applied in each ASGC Remoteness area, respiratory disease, males and females, 1997–1999

Age group (years)	Male					Female				
	MC rate	IR	OR	R	VR	MC rate	IR	OR	R	VR
		(ratio)					(ratio)			
0–4	3	0.69	1.02	2.14	*6.08	3	0.79	0.76	*3.70	*4.64
5–14	1	1.43	0.90	2.07	6.91	<1	1.52	0.07	0.04	0.00
15–24	1	1.10	*2.62	*5.74	2.75	1	1.06	1.21	1.64	0.16
25–44	2	*1.46	*2.02	*4.81	*9.64	2	1.18	1.45	*2.54	*9.60
45–64	21	*1.22	*1.70	*1.61	*4.88	16	*1.15	*1.44	*2.51	*4.67
65–74	213	*1.21	*1.31	*1.52	*2.00	113	*1.12	*1.22	*1.51	*2.13
75+	870	1.02	*1.12	0.95	0.95	531	*0.95	0.97	1.00	0.92
Total	..	*1.09	*1.23	*1.26	*1.88	..	1.00	*1.06	*1.29	*1.86

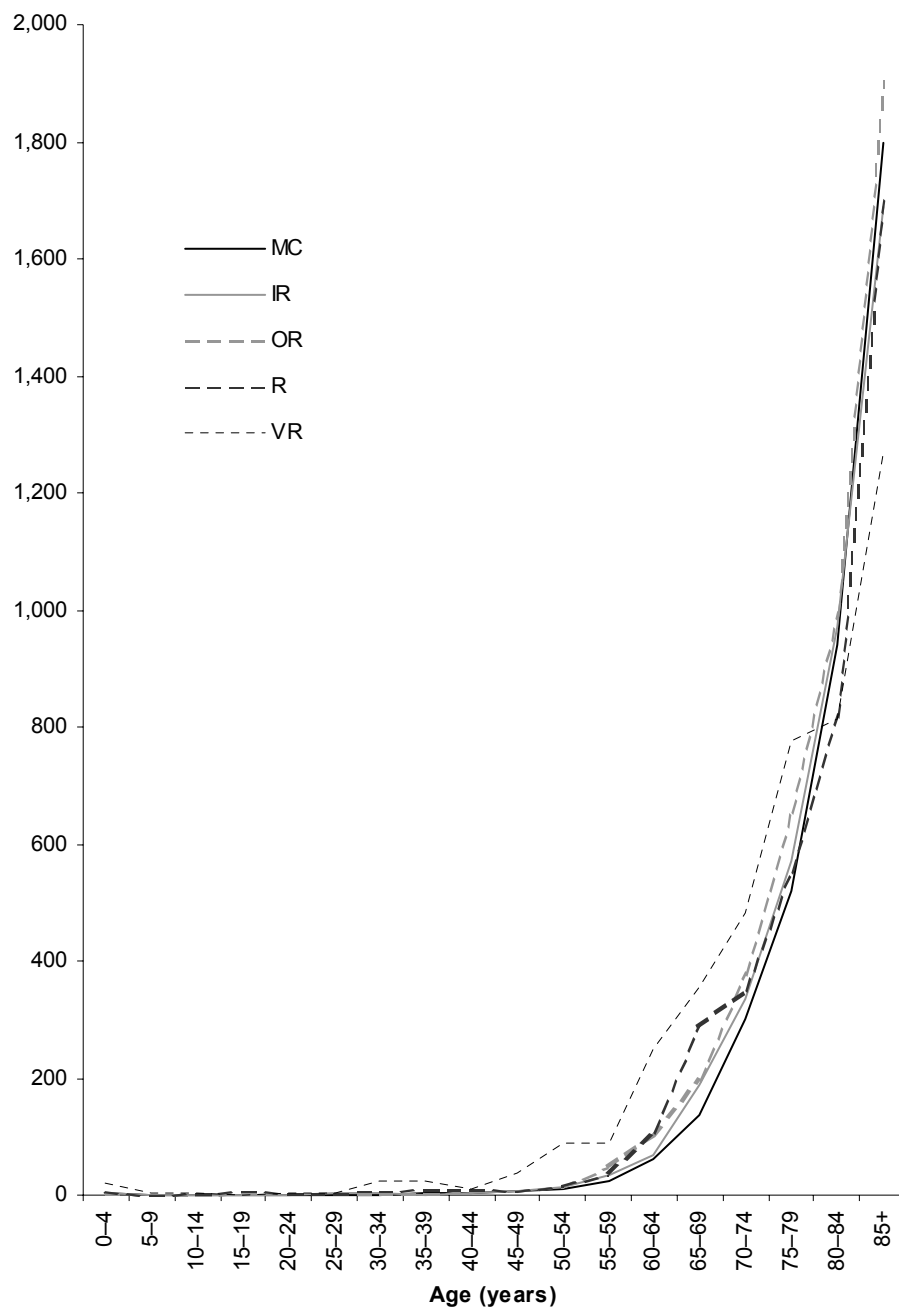
* Significantly different from 1 (that is, rates are significantly different from those in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.

Source: AIHW National Mortality Database.

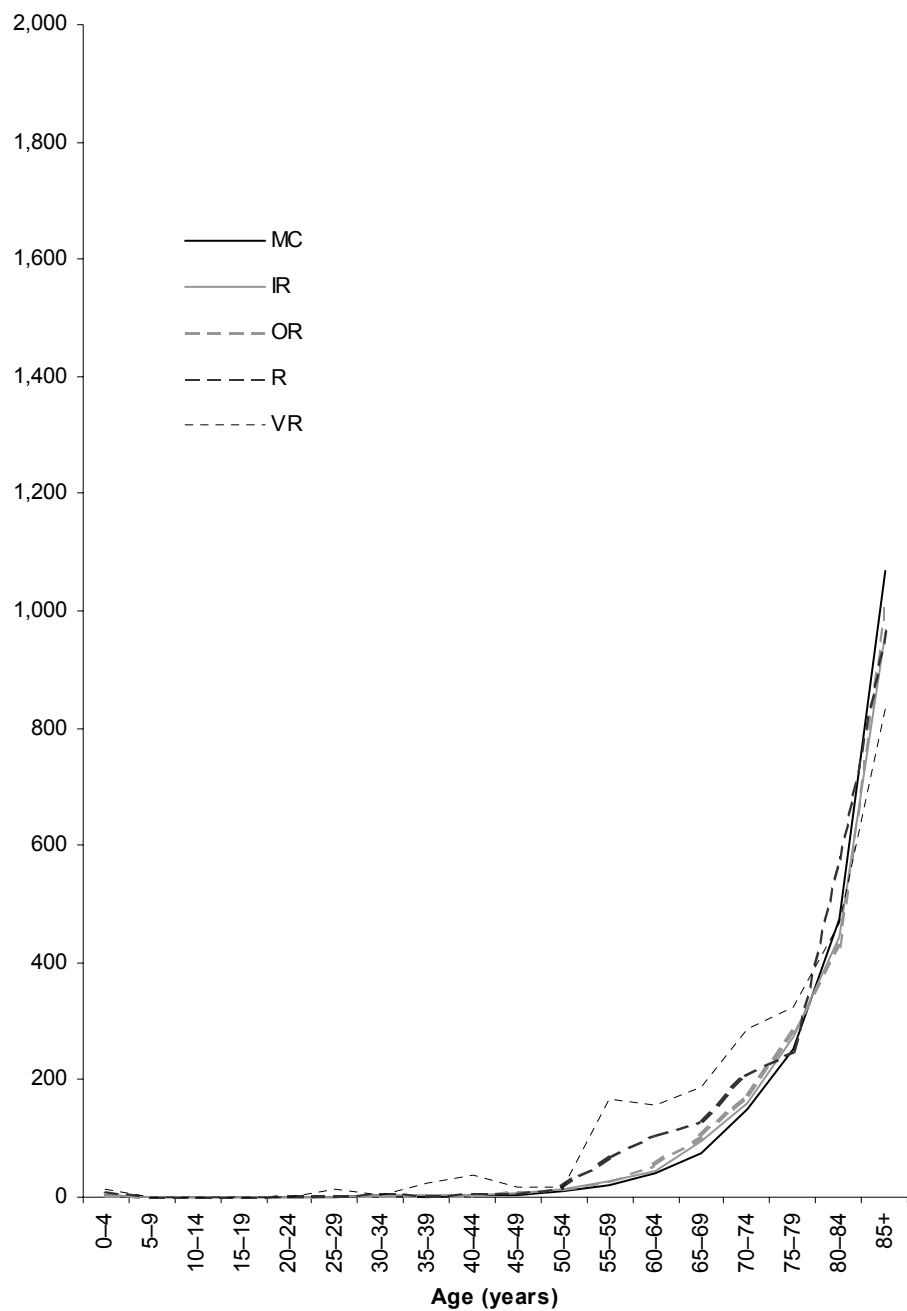
Deaths per 100,000 population



Source: AIHW National Mortality Database.

Figure 6.5: Age-specific death rates due to respiratory diseases, by ASGC Remoteness area for males, 1997-1999

Deaths per 100,000 population



Source: AIHW National Mortality Database.

Figure 6.6: Age-specific death rates due to respiratory diseases, by ASGC Remoteness area for females, 1997-1999

Age-specific rates for Indigenous people

Death rates of Indigenous people are much greater than for non-Indigenous people, irrespective of where the latter live (Table 6.5 and Figures 6.7 and 6.8).

Age-specific death rates were higher for Indigenous males and females than non-Indigenous males and females from Major Cities in practically every age group. The greatest relative differences occurred in the 25–44-year age group. In this age group, the death rates for Indigenous males and females were, respectively, 28 and 15 times the rate for non-Indigenous males and females living in Major Cities. In the 45–64 year age group, the mortality rate for Indigenous males and females was 10 times that for non-Indigenous males and females from Major Cities.

Age-specific rates for non-Indigenous people

For non-Indigenous people, death rates due to respiratory disease, although higher outside Major Cities (Table 6.5), were less different from Major Cities rates than is the case for the total population (Table 6.4).

This implies that the large differentials for the total population are influenced by the high death rates for Indigenous people, which were substantially and significantly higher in most age groups than those of non-Indigenous people in Major Cities (and indeed in other areas).

Death rates for non-Indigenous males and females younger than 45 years living outside Major Cities are not significantly different from those for similar people living in Major Cities, except for 15–24-year-old males from Outer Regional areas and 25–44-year-old males from Inner Regional areas for whom death rates are 2.4 and 1.5 times as high respectively as for their Major Cities counterparts.

Although there are several groups for which the difference did not reach significance, for non-Indigenous males and females aged 45–74 years, death rates were 1.1–1.2 times as high in Inner Regional areas and 1.2–1.5 times as high in Outer Regional areas. In Remote areas, death rates for people in this age group were 1.4–2.1 times and in Very Remote areas up to 2.2 times the rate for those living in Major Cities.

Death rates for non-Indigenous people older than 75 years did not tend to be significantly different, or were slightly lower than for their counterparts in Major Cities (for males in this age group from Outer Regional areas, death rates were 1.1 times as high as for their counterparts in Major Cities).

When the effects of the possible movement of the frail aged to more populated areas and the mortality of Indigenous people are taken into account, death rates due to respiratory disease clearly increased with remoteness.

Table 6.5: The ratio of observed deaths to those expected as a result of respiratory disease if Major Cities non-Indigenous rates applied to the non-Indigenous population in each ASGC Remoteness area and to the Indigenous population, 1997–1999

Age group (years)	Male						Female					
	MC rate	Non-Indigenous				Indigenous	MC rate	Non-Indigenous				Indigenous
		IR	OR	R	VR			IR	OR	R	VR	
		(ratio)						(ratio)				
0–4	3	0.66	0.45	1.07	2.78	*6.9	3	0.83	0.79	1.06	3.31	*6.7
5–14	1	1.45	0.60	2.44	0.00	3.6	<1	1.54	0.08	0.05	0.00	0.0
15–24	1	1.17	*2.41	4.30	0.51	*7.9	1	1.13	1.34	2.04	0.41	1.5
25–44	2	*1.53	1.50	2.27	0.89	*28.4	2	1.17	1.14	0.65	1.09	*15.2
45–64	20	*1.19	*1.53	1.23	*2.17	*10.2	16	1.14	*1.30	*2.06	1.78	*10.2
65–74	213	*1.21	*1.29	*1.38	1.39	*4.2	112	*1.12	*1.18	1.28	1.26	*4.3
75+	870	1.02	*1.13	0.95	0.96	*1.6	531	*0.94	0.97	1.01	0.62	*1.7
Total	..	*1.08	*1.21	1.13	1.22	*4.5	..	0.99	1.04	1.15	0.88	*4.4
0–64	..	*1.20	*1.49	1.40	*1.99	*11.6	..	*1.13	*1.24	*1.76	1.67	*9.6

* Significantly different from 1 (that is, rates are significantly different from those for non-Indigenous people in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates for non-Indigenous persons are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. Ratios for Indigenous people are for SA, WA, NT and Qld.
4. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.
5. SMRs calculated for non-Indigenous persons from Remote and Very Remote areas should be treated with caution (see page 22).

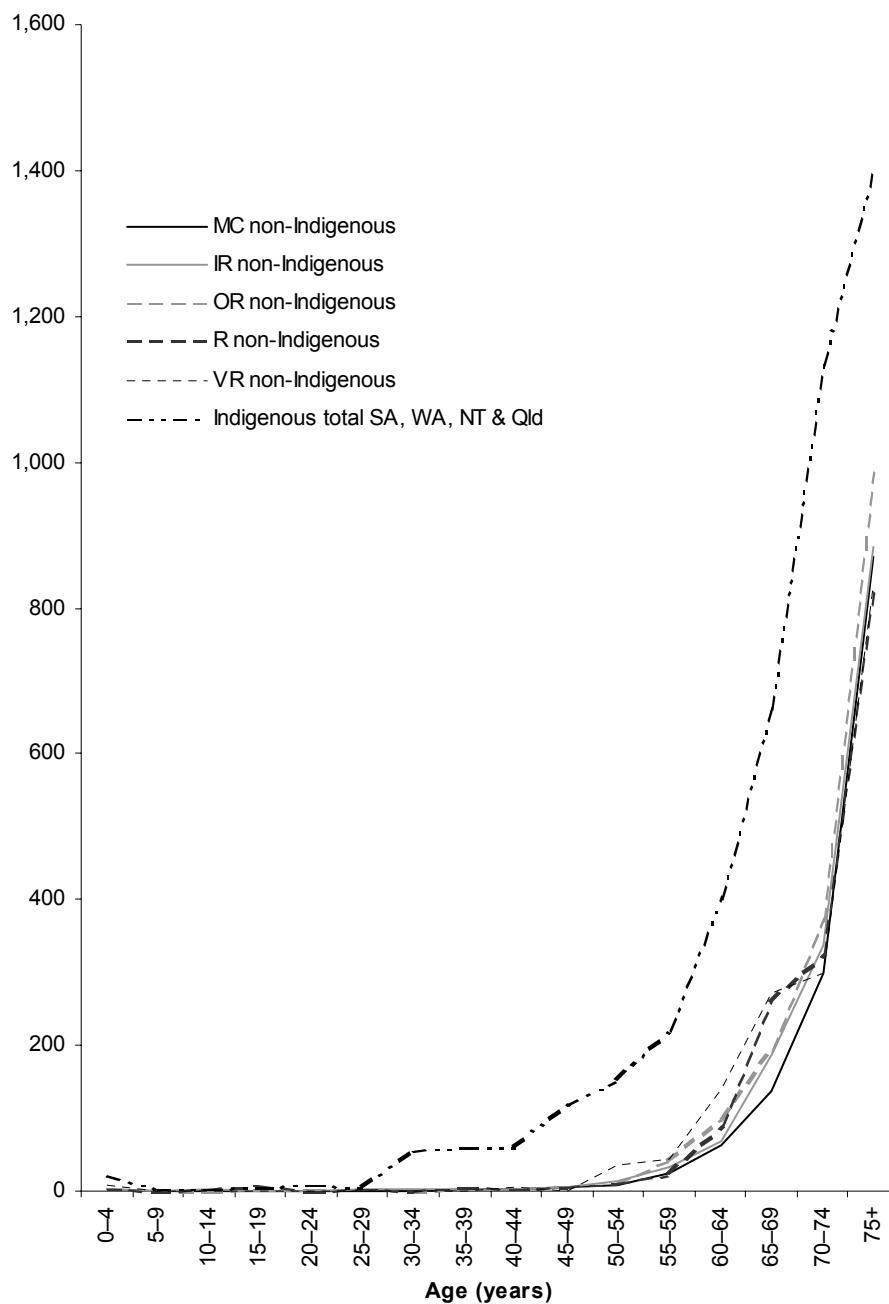
Source: AIHW National Mortality Database.

‘Excess’ deaths due to respiratory disease

‘Excess’ deaths are defined as ‘how many more observed deaths occurred than would be expected, if death rates in Major Cities are applied to the populations in each area outside Major Cities’.

‘Excess’ deaths give a measure of the absolute number of ‘extra’ people who died outside Major Cities, and places these in perspective against the ratios shown in Tables 6.4 and 6.5. For example, although the ratio of observed deaths to those expected if Major Cities had applied may have been relatively high in a particular area, it may not have involved a large number of people. Conversely, a low rate ratio in another area may translate into a relatively large number of ‘excess’ deaths because of a larger base population.

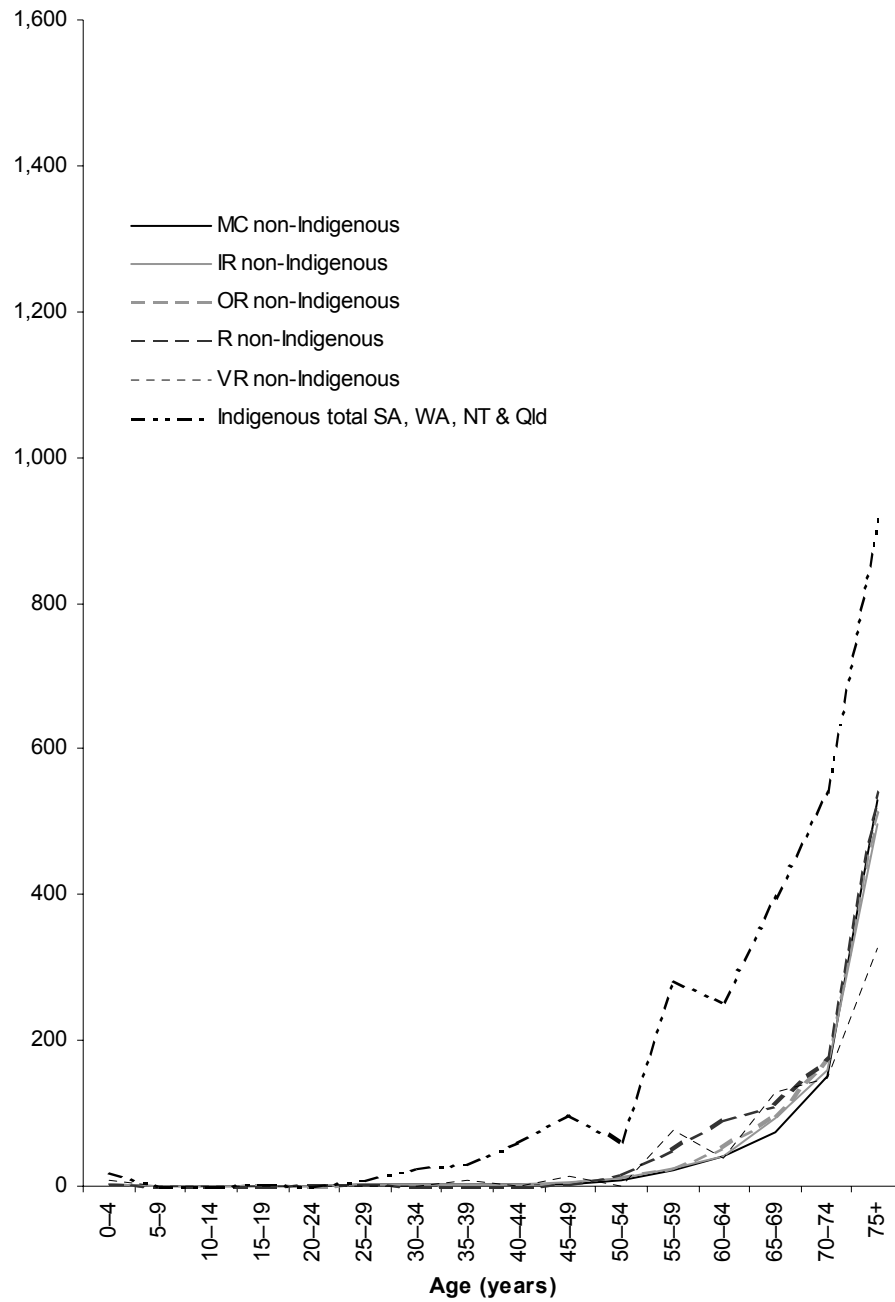
Deaths per 100,000 population



Source: AIHW National Mortality Database.

Figure 6.7: Age-specific death rates due to respiratory diseases, by ASGC Remoteness area for non-Indigenous males and for SA, WA, NT and Qld Indigenous males, 1997-1999

Deaths per 100,000 population



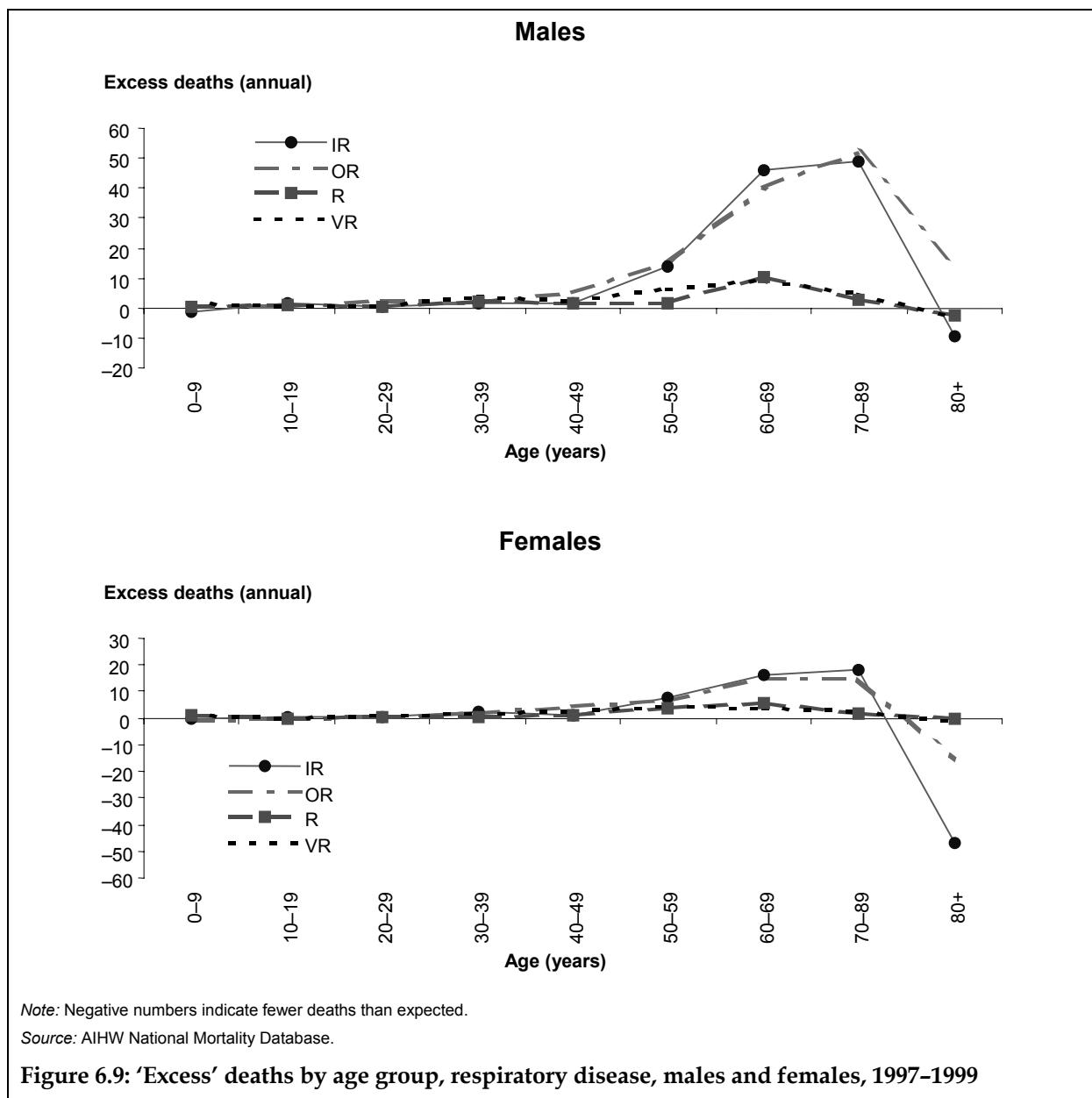
Source: AIHW National Mortality Database.

Figure 6.8: Age-specific death rates due to respiratory diseases, by ASGC Remoteness area for non-Indigenous females and for SA, WA, NT and Qld Indigenous females, 1997-1999

Annual 'excess' deaths

Annually between 1997 and 1999, there were 277 'excess' deaths of males and 53 'excess' deaths of females from respiratory disease across all areas outside Major Cities.

Deaths resulting from respiratory disease occur more frequently in older age groups, and it is only in the population older than 40 years that differences in 'excess' deaths across areas outside Major Cities start to become apparent. For those older than about 80 years, there were frequently fewer deaths than expected outside Major Cities (Figure 6.9 and Appendix B).

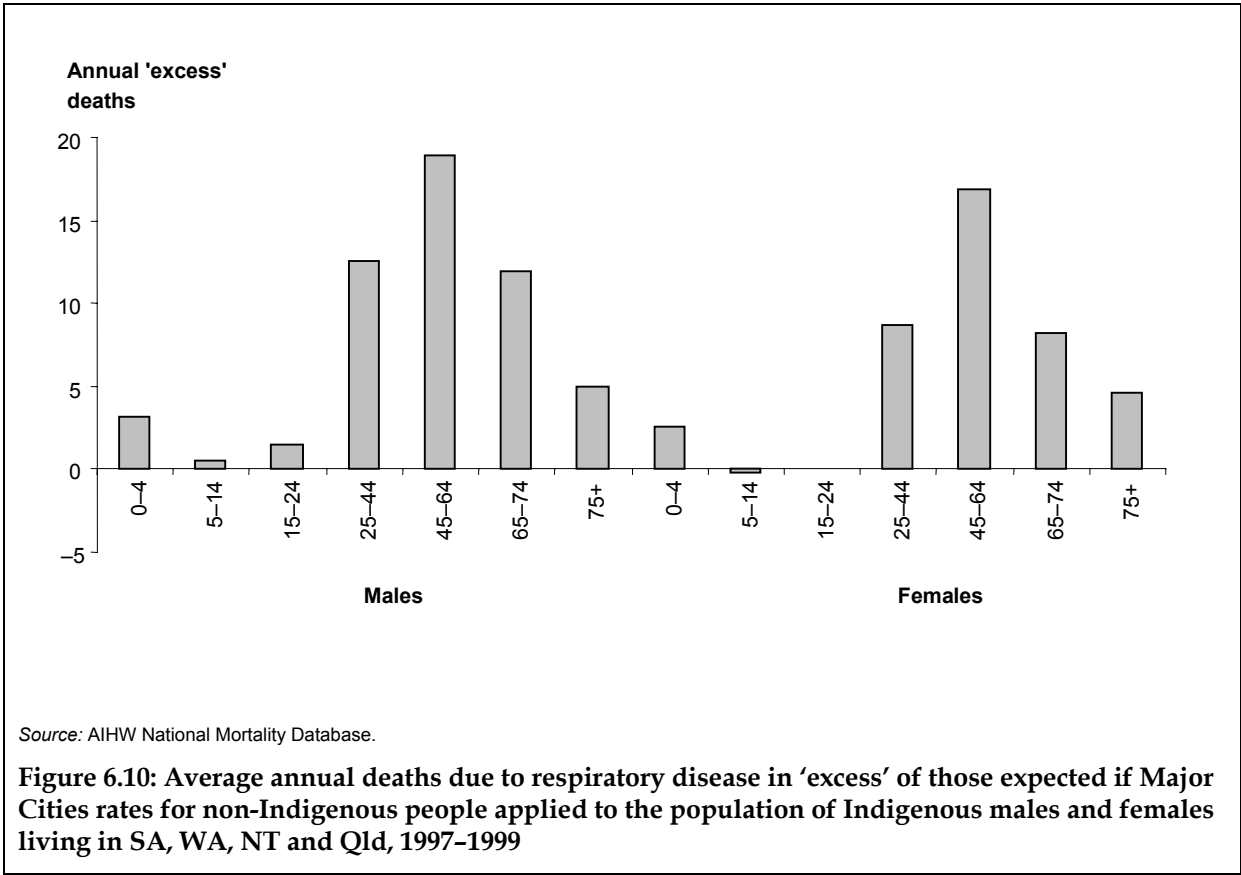


There were 111, 112, 16 and 23 'excess' deaths of males in the four areas outside Major Cities aged between 40 and 79 years and 43, 40, 14 and 13 'excess' female deaths of that age range in those areas. The bulk of these 'excess' deaths (183 male and 75 female deaths) occurred for those aged 65-79 years.

For those aged 80 years and over, however, there were fewer deaths than expected (2 fewer deaths of males and 64 fewer deaths of females) outside Major Cities. Indeed, for this age group in almost all areas (except for males from Outer Regional areas) there were fewer deaths than expected. As noted previously, this may be a result of older people with poor health moving into more populated areas to receive treatment, and eventually dying there.

Annual 'excess' deaths of Indigenous people

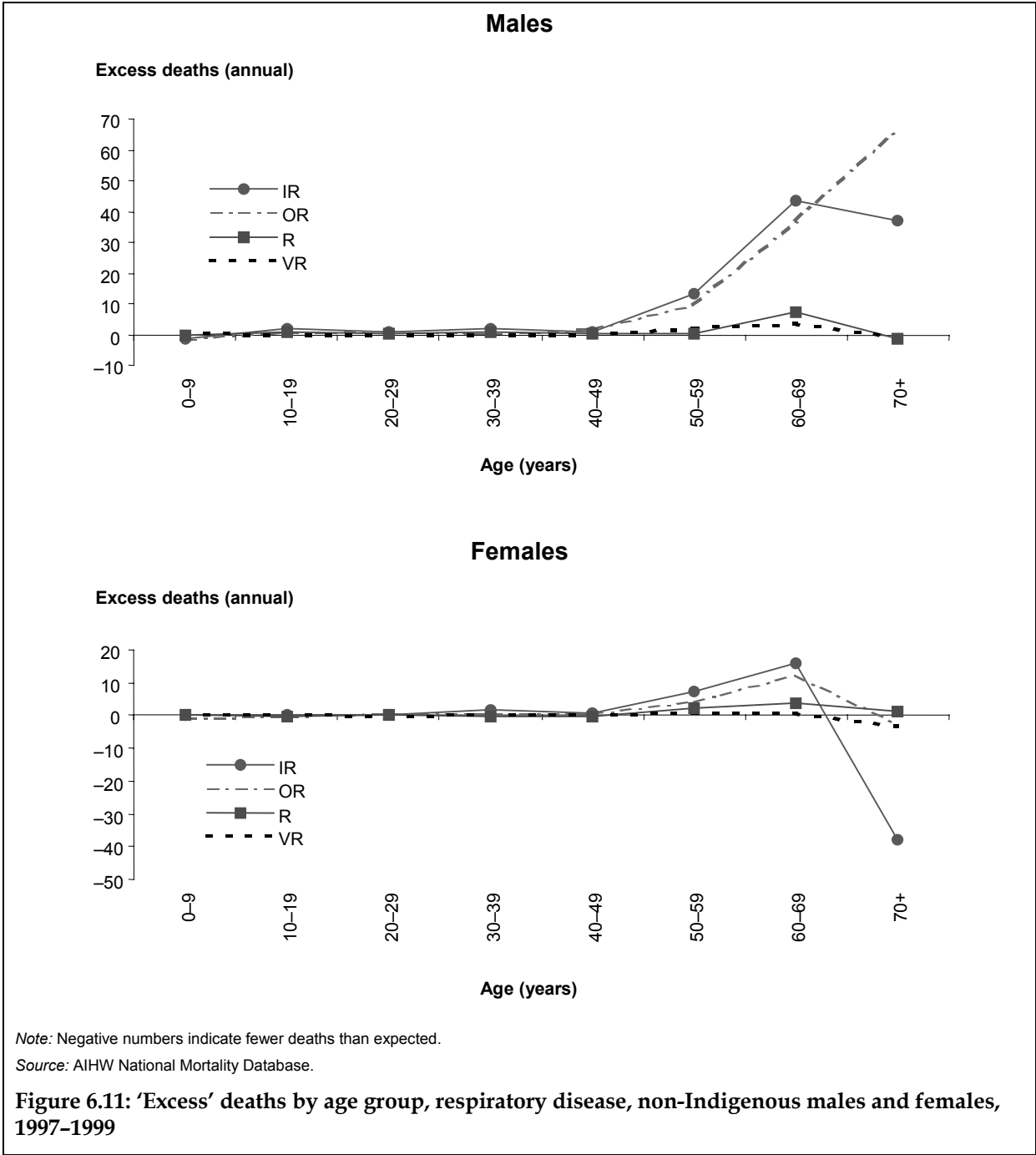
Annually in the Indigenous population there were 53 'excess' deaths of males and 41 'excess' deaths of females resulting from respiratory diseases. These were calculated on the basis that Major Cities rates for non-Indigenous people had applied to the Indigenous population living in South Australia, Western Australia, the Northern Territory and Queensland. It is most likely that there were also 'excess' deaths of Indigenous people from these diseases in the other jurisdictions for which identification is considered less accurate (New South Wales, Victoria, Tasmania, the Australian Capital Territory).



For Indigenous males, 25% of the 'excess' deaths were aged 25-44 years, 36% were aged 45-64 years, and 23% were aged 65-74 years. For Indigenous females the numbers of 'excess' deaths were lower, but the pattern similar: 22% were aged 25-44 years, 41% were in the 45-64 year age group, and 20% were aged 65-74 years (Figure 6.10 and Appendix B).

Annual 'excess' deaths of non-Indigenous people

There were 226 and 10 'excess' deaths respectively of non-Indigenous males and females annually outside Major Cities.



Annually for males, 98, 115, 8 and 5 'excess' deaths occurred in Inner and Outer Regional, Remote and Very Remote areas respectively, with 75% of the total 226 'excess' deaths occurring in those older than 65 years.

Annually for females there were -11, 15, 7 and -1 'excess' deaths in Inner and Outer Regional, Remote and Very Remote areas respectively (that is, 11 fewer than expected in Inner Regional areas); however, there were substantially fewer deaths than expected for those aged 75 years and older (44, 8, 0 and 3 fewer than expected in the four areas). Overall, for females aged 50-64 and 65-74 years who lived outside Major Cities, there were respectively 22 and 37 more deaths than expected annually (Figure 6.11 and Appendix B).

This is in marked contrast to the Indigenous population, in which most 'excess' deaths occurred in those younger than 65 years.

6.2 Chronic obstructive pulmonary disease

Chronic obstructive pulmonary disease (COPD, ICD-10 codes J41–J44) 'is a long-term disease that causes continual and increasing shortness of breath. The single most important cause of COPD is tobacco smoking' (AIHW 2002a).

Summary of findings

Annually, chronic obstructive pulmonary disease was responsible for the deaths of 5,581 people (3,453 males and 2,128 females); 2,173 of these people came from areas outside Major Cities. Of these 5,581 deaths, 48 deaths were of Indigenous people living in South Australia, Western Australia, the Northern Territory and Queensland.

Death rates due to COPD tended to be higher outside Major Cities. In the four areas outside Major Cities there were:

- 1.2, 1.4, 1.3 and 1.9 times as many deaths of males as expected; and
- 1.1, 1.1, 1.4 and 1.8 times as many deaths of females as expected.

There were 3–4 times as many deaths of Indigenous people as expected from COPD.

For non-Indigenous males, deaths rates in the four areas outside Major Cities were 1.2, 1.4, 1.2 and 1.4 times as high as in Major Cities, while for non-Indigenous females they were similar, except for Outer Regional areas where the rate was 1.1 times that for Major Cities counterparts.

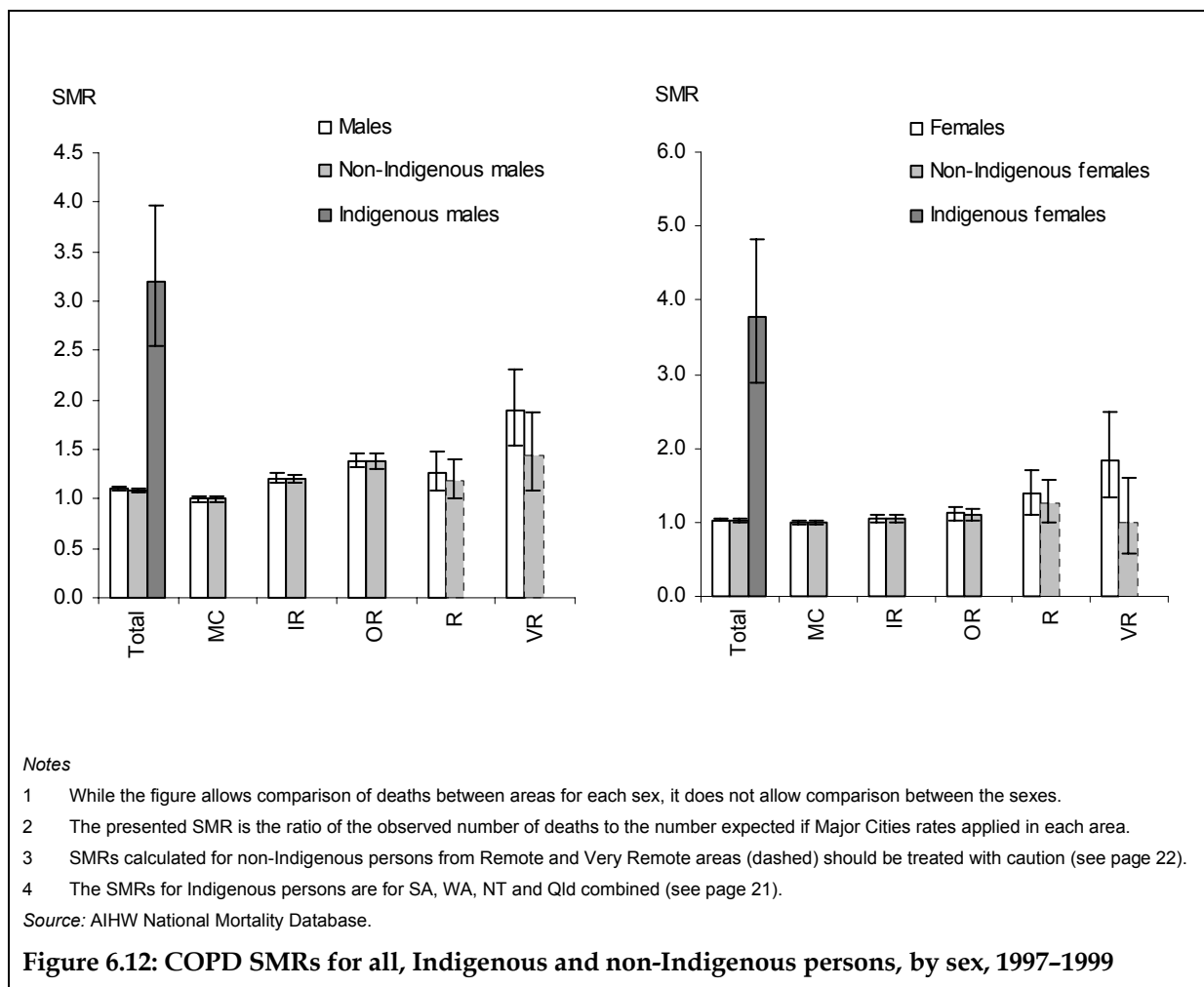
For non-Indigenous males there were 1.2, 1.4, 1.2 and 1.4 times as many deaths as expected in the four areas outside Major Cities due to COPD. For females, there were about as many deaths as expected, except in Outer Regional areas where there were 1.1 times as many deaths of females as expected.

For non-Indigenous people younger than 65 years, the ratio of observed to expected deaths in each area was higher than for the total non-Indigenous population (1.4 and 1.8 times as many deaths of males in Inner and Outer Regional areas, 1.3 and 2.5 times as many deaths of females from Outer Regional and Remote areas).

Annually, there were 374 'excess' deaths due to chronic obstructive pulmonary disease outside Major Cities (176, 156, 20 and 22 in each of the four areas). About 85% of the 'excess' occurred in those aged 60–79 years. There were fewer deaths than expected for those who were 85 years and older, but the effect on the overall 'excess' was small.

Overall mortality due to chronic obstructive pulmonary disease

Annually, there were 2,023, 869, 475, 53 and 33 deaths of males and 1,385, 473, 226, 30 and 14 deaths of females in the five areas respectively, as a result of COPD.



Death rates due to COPD tended to be higher outside Major Cities (Figure 6.12 and Table 6.6).

- In the four areas outside Major Cities, there were 1.2, 1.4, 1.3 and 1.9 times as many deaths of males as expected.
- For females, rates outside Major Cities were also higher with 1.05, 1.1, 1.4 and 1.8 times as many deaths of females as expected in the four areas.
- There were about 3-4 times as many deaths of Indigenous people due to COPD as expected.

In Major Cities, rates for males rose from 0 per 100,000 per year at about age 40 years to 100 per 100,000 per year at age 65-69 years, then to 900 per 100,000 per year for those 85 years and older. The pattern was similar for females but reached 320 per 100,000 per year in the oldest age group:

- There were 1.3-1.4, 1.5-1.9, 1.6-1.7 and 2.3-5.3 times as many deaths of 45-74-year-old males as expected in the four areas respectively. For females of the same age, the situation was similar with about 1.2, 1.3-1.4, 2.7 and 5.6 times as many deaths as expected in the four areas.
- There were 1.1 and 1.3 times as many deaths of males 75 years and older from Inner and Outer Regional areas as expected, and as many as expected in remote areas. There were about as many deaths of females of this age as expected in each of the four areas.

Table 6.6: The ratio of observed deaths to those expected if Major Cities rates applied in each ASGC Remoteness area, COPD, males and females, 1997–1999

Age group (years)	Male					Female				
	MC rate	IR	OR	R	VR	MC rate	IR	OR	R	VR
		(ratio)					(ratio)			
0–4	0	..	..	..	..	0	..	..	..	..
5–14	0	..	..	..	..	0	..	..	..	..
15–24	0	..	..	..	..	<1	1.57	0.00	0.00	0.00
25–44	<1	2.35	0.18	0.00	8.47	<1	*2.96	1.07	4.90	10.30
45–64	12	*1.41	*1.91	*1.74	*5.26	9	1.16	*1.40	*2.67	*5.61
65–74	154	*1.32	*1.48	*1.62	*2.33	78	*1.24	*1.34	1.52	1.71
75+	509	*1.13	*1.27	0.98	1.02	223	0.96	0.98	1.03	0.95
Total	..	*1.21	*1.39	*1.27	*1.90	..	*1.06	*1.12	*1.38	*1.84

* Significantly different from 1 (that is, rates are significantly different from those in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.

Source: AIHW National Mortality Database.

As a result of COPD, there were 151, 133, 11 and 15 ‘excess’ deaths of males annually, and 25, 24, 8 and 6 ‘excess’ deaths of females annually in the four areas outside Major Cities. Over 90% of ‘excess’ deaths of males occurred in those older than 60 years, although for those in Very Remote areas, the bulk of the contribution came from 50–80-year-olds. For females, there were fewer deaths than expected in all areas for those older than 80 years, with almost all of the ‘excess’ occurring in those aged 60–80 years.

Indigenous population

Annually in the period 1997–1999, there were 48 deaths of Indigenous people (28 males and 21³ females) in South Australia, Western Australia, the Northern Territory and Queensland. There would also have been a number of deaths due to this cause in the other jurisdictions where identification is less reliable. Of these 48 deaths, there were 34 (19 males and 15 females) more than expected.

There were 3 and 4 times as many deaths of Indigenous males and females as expected (Table 6.7). For males, 88% of the ‘excess’ occurred in those aged 45–74 years, while for females, 81% occurred amongst the same age group and a further 17% occurred among those 75 years and older.

Non-Indigenous population

Annually, there were 2,017, 863, 464, 47 and 18 deaths of non-Indigenous males and 1,379, 468, 219, 26 and 6 deaths of non-Indigenous females in the five areas respectively, as a result of COPD.

³ Figures for males and females do not add to the total for persons due to the rounding of fractions.

Table 6.7: The ratio of observed deaths to those expected as a result of COPD if Major Cities non-Indigenous rates applied to the non-Indigenous population in each ASGC Remoteness area and to the Indigenous population, 1997–1999

Age group (years)	Male						Female					
	MC rate	Non-Indigenous				Indigenous	MC rate	Non-Indigenous				Indigenous
		IR	OR	R	VR			(ratio)	IR	OR	R		VR	(ratio)
0–4	<1	0.00	0.00	0.00	0.00	12.1	0	..	..	..	..	..
5–14	0	..	..	..	..	..	0	..	..	..	..	..
15–24	0	..	..	..	..	..	<1	1.59	0.00	0.00	0.00	0.0
25–44	<1	2.72	0.21	0.00	0.00	*21.7	<1	*2.99	0.24	0.17	0.00	8.0
45–64	12	*1.37	*1.79	1.37	*3.05	*8.5	9	1.13	*1.36	*2.41	2.48	*8.8
65–74	154	*1.32	*1.45	*1.50	*1.71	*4.0	78	*1.23	*1.29	1.31	1.07	*3.5
75+	509	*1.13	*1.28	0.97	0.98	1.3	222	0.95	0.98	0.99	0.67	*2.0
Total	..	*1.21	*1.38	*1.19	*1.44	*3.2	..	1.05	*1.10	1.25	0.99	*3.8
0–64	..	*1.38	*1.76	1.42	*3.00	*8.9	..	1.17	*1.33	*2.48	2.40	*8.7

* Significantly different from 1 (that is, rates are significantly different from those for non-Indigenous people in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates for non-Indigenous persons are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. Ratios for Indigenous people are for SA, WA, NT and Qld.
4. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.
5. SMRs calculated for non-Indigenous persons from Remote and Very Remote areas should be treated with caution (see page 22).

Source: AIHW National Mortality Database.

Death rates due to COPD were higher outside Major Cities (Table 6.7).

For non-Indigenous males there were 1.2, 1.4, 1.2 and 1.4 times as many deaths as expected in the four areas outside Major Cities.

For non-Indigenous females there were about as many deaths as expected in each of the areas, except Outer Regional areas where there were 1.1 times as many deaths as expected.

Age-specific rates for non-Indigenous people living in Major Cities were similar to those for the total population living in Major Cities.

Age-specific death rates for non-Indigenous people were similar to those for the total population except in Very Remote areas where rates were elevated, but not as much as for the total population (death rates in this area for 45–74-year-old males were 1.7–3.1 times the rates in Major Cities). For females in the same age group, rates were not significantly higher.

As a result of COPD, there were 147, 127, 8 and 6 ‘excess’ deaths of non-Indigenous males annually, and 21, 19, 5 and 0 ‘excess’ deaths of non-Indigenous females annually in the four areas outside Major Cities. The bulk of ‘excess’ deaths occurred in those older than 60 years.

Mortality for those aged 0–64 years

Indigenous population

Annually there were 20 (11 male, 9 female) deaths of Indigenous people younger than 65 years in South Australia, Western Australia, the Northern Territory and Queensland as a result of COPD. There would also have been a number of deaths due to this cause in the other jurisdictions. Of these 20 deaths, there were 18 (10 males and 8 females) more than expected.

For Indigenous males and females who were younger than 65 years, there were 9 times as many deaths as expected as a result of COPD (Table 6.7).

Non-Indigenous population

Annually, there were 163, 76, 51, 6 and 5 deaths of non-Indigenous males younger than 65 years and 122, 47, 26, 6 and 2 deaths of non-Indigenous females younger than 65 years in the five areas respectively, as a result of COPD.

Death rates for non-Indigenous 0–64-year-olds as a result of COPD tended to be higher outside Major Cities (Table 6.7).

- There were 1.4, 1.8 and 3.0 times as many deaths as expected of 0–64-year-old non-Indigenous males in Inner Regional, Outer Regional and Very Remote areas. In Remote areas, rates appeared elevated, but were not significantly higher than those in Major Cities.
- There were 1.3 and 2.5 times as many deaths as expected of 0–64-year-old non-Indigenous females in Outer Regional and Remote areas, with more than expected (but not significantly more) in Inner Regional and Very Remote areas.

As a result of COPD, there were 21, 22, 2 and 3 ‘excess’ deaths of non-Indigenous males younger than 65 years annually, and 7, 7, 4 and 1 ‘excess’ deaths of non-Indigenous females younger than 65 years annually in the four areas outside Major Cities. The bulk of ‘excess’ deaths occurred in those older than 50 years.

6.3 Pneumonia

Pneumonia (ICD-10 codes J12–J18) is an inflammation or infection of the lungs, for example, caused by the bacteria *Streptococcus pneumoniae*. People at greatest risk are those whose immune systems are compromised, or who have chronic cardiovascular or pulmonary disease (for example, influenza), diabetes mellitus, alcohol-related problems, cirrhosis, cerebrospinal fluid leak after trauma or surgery, and those who smoke. Vaccination to protect against the disease is recommended for at-risk individuals (NHMRC 2000).

The exact cause of pneumonia is not always known or reported. Influenza virus infection can frequently be involved, and if this is known, influenza may be reported as the cause of death. However, influenza is often not specifically identified as the cause, so 'pneumonia' may be reported as the cause of death. Because of this, influenza and pneumonia are often considered together as causes of death, although they are reported separately here.

Summary of findings

Annually, pneumonia was responsible for the deaths of 1,921 people (786 males and 1,135 females); 636 of these people came from areas outside Major Cities. Of these 1,921 deaths, 36 were of Indigenous people living in South Australia, Western Australia, the Northern Territory and Queensland.

Death rates due to pneumonia were 0.9 times Major Cities rates for males in Inner Regional areas (that is, lower) and 2.3 times as high for males and females in Very Remote areas, but elsewhere were not significantly different from rates in Major Cities.

There were about 9 and 6 times as many deaths of Indigenous males and females as expected from pneumonia.

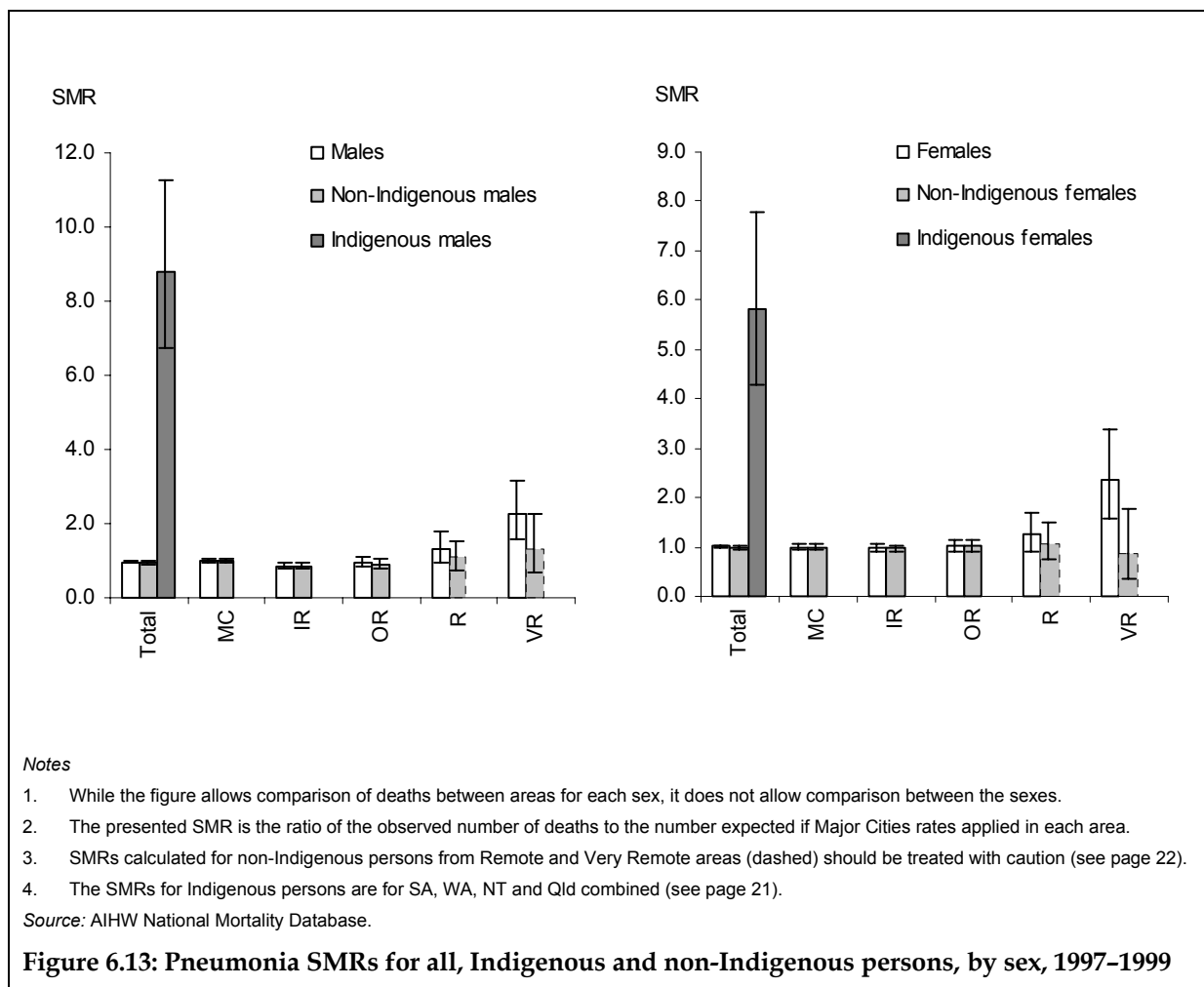
There were about as many deaths of non-Indigenous people as expected due to this cause, except in Inner Regional areas where there was 0.8 times as many deaths of males as expected.

For the non-Indigenous population younger than 65 years, there were about as many deaths of males as expected, and about as many deaths of females as expected in the other areas (with 1.5 times as many deaths of females as expected in Inner Regional areas).

Annually, there were 14 fewer deaths than expected due to pneumonia outside Major Cities (-32, -1, 7 and 12 'excess' deaths in each of the four areas). There were fewer deaths than expected in the older age groups. For those who were younger than 65 years, there were 25 'excess' deaths in the four areas, more than half of which occurred in remote areas. It appears likely that a substantial proportion of this 'excess' is a consequence of high rates for Indigenous people.

Overall mortality due to pneumonia

Annually, there were 521, 154, 85, 15 and 11 deaths of males and 764, 235, 111, 15 and 10 deaths of females in the five areas respectively, as a result of pneumonia.



- Death rates due to pneumonia were higher in Very Remote areas than in Major Cities (2.2 times as high for males and 2.4 times as high for females). Rates were not significantly different in the other areas, except for males in Inner Regional areas where rates were 0.9 times those in Major Cities (Figure 6.13 and Table 6.8).
- There were about 6–9 times as many deaths of Indigenous people due to pneumonia as expected.

In Major Cities, rates were negligible until age 50, rising to 160 per 100,000 per year for males and 110 per 100,000 per year for females at age 80–84 years, and about 500 per 100,000 per year for both sexes for those 85 years and older.

- For most age groups and areas outside Major Cities, there tended to be more deaths than expected, but in only a few were the differences significant.
- Within the 25–64-year-old age groups, there were several areas (particularly remote areas) where there were more deaths than expected. For example, there were 2.4, 4.8 and 13.4 times as many deaths of 25–44-year-old males as expected in Outer Regional, Remote and Very Remote areas. For females in this age group, there were 7.2 and 16.5 times more deaths than expected in Remote and Very Remote areas. However, the overall number of expected deaths in these age groups was relatively small.

- For males who were 75 years and older, there were either as many deaths as expected or, in Inner Regional areas, fewer deaths than expected. For females of this age, there were about as many deaths as expected in all areas.

Table 6.8: The ratio of observed deaths to those expected if Major Cities rates applied in each ASGC Remoteness area, pneumonia, males and females, 1997–1999

Age group (years)	Male					Female				
	MC rate	IR	OR	R	VR	MC rate	IR	OR	R	VR
		(ratio)					(ratio)			
0–4	1	0.10	1.15	3.58	*17.45	1	0.89	1.01	4.63	*14.22
5–14	<1	0.81	0.01	0.00	23.90	<1	0.00	0.00	0.00	0.00
15–24	0	..	..	..	..	<1	0.36	0.00	0.00	0.00
25–44	<1	1.38	*2.38	*4.81	*13.44	<1	1.88	1.54	*7.21	*16.47
45–64	2	0.97	1.33	2.04	*5.05	1	*1.64	*2.11	3.29	*10.91
65–74	14	0.77	1.05	2.22	2.27	8	0.76	0.80	1.79	*5.91
75+	171	*0.85	0.89	0.97	1.07	172	0.97	1.00	1.03	1.28
Total	..	*0.85	0.97	1.33	*2.26	..	0.98	1.02	1.26	*2.35

* Significantly different from 1 (that is, rates are significantly different from those in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.

Source: AIHW National Mortality Database.

As a result of pneumonia, there were –28, –3, 4 and 6 ‘excess’ deaths of males annually, and –4, 2, 3 and 6 ‘excess’ deaths of females annually in the four areas outside Major Cities. In regional areas, there were generally fewer deaths than expected amongst females older than 60 years and males older than 80 years.

Indigenous population

Annually in the period 1997–1999, there were 36 deaths of Indigenous people (21 males and 15 females) in South Australia, Western Australia, the Northern Territory and Queensland. There would also have been a number of deaths due to this cause in the other jurisdictions where identification is less reliable. Of these 36 deaths, there were 31 (19 males and 13 females) more than expected.

There were 9 and 6 times as many deaths of Indigenous males and females as expected as a result of pneumonia (Table 6.9). For males and females, the pattern for ‘excess’ deaths was somewhat similar, with 15% amongst those younger than 5 years, just over 30% of the ‘excess’ amongst 25–44-year-olds and about 50% amongst those 45 years and older.

Non-Indigenous population

Annually, there were 517, 153, 77, 11 and 4 deaths of non-Indigenous males and 760, 234, 108, 12 and 3 deaths of non-Indigenous females in the five areas respectively as a result of pneumonia.

There were about as many deaths of non-Indigenous people as expected due to this cause, except in Inner Regional areas where there was 0.8 times as many deaths of males as expected (Table 6.9).

Table 6.9: The ratio of observed deaths to those expected as a result of pneumonia if Major Cities non-Indigenous rates applied to the non-Indigenous population in each ASGC Remoteness area and to the Indigenous population, 1997–1999

Age group (years)	Male						Female					
	MC rate	Non-Indigenous				Indig-enous	MC rate	Non-Indigenous				Indig-enous
		IR	OR	R	VR			IR	OR	R	VR	
0–4	1	0.11	0.01	0.00	7.92	*16.2	1	0.96	0.96	0.00	12.02	*16.2
5–14	<1	0.82	0.01	0.00	0.00	12.3	<1	0.00	0.00	0.00	0.00	0.0
15–24	0	..	..	..	..	..	<1	0.48	0.00	0.00	0.00	10.8
25–44	<1	1.50	1.79	0.37	0.00	*47.5	<1	*2.02	1.18	0.03	0.04	*40.3
45–64	2	0.97	1.06	1.33	1.26	*13.7	1	1.58	1.55	1.06	0.32	*23.9
65–74	14	0.77	0.94	1.66	1.03	*12.2	7	0.78	0.77	0.86	0.00	*14.8
75+	171	*0.84	0.90	1.02	1.29	*3.2	172	0.95	1.01	1.11	0.84	1.6
Total	n.p.	*0.84	0.92	1.09	1.30	*8.8	n.p.	0.96	1.01	1.07	0.88	*5.8
0–64	n.p.	0.96	1.10	0.95	1.63	*23.3	n.p.	*1.54	1.31	0.56	2.06	*24.2

* Significantly different from 1 (that is, rates are significantly different from those for non-Indigenous people in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates for non-Indigenous persons are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. Ratios for Indigenous people are for SA, WA, NT and Qld.
4. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.
5. SMRs calculated for non-Indigenous persons from Remote and Very Remote areas should be treated with caution (see page 22).

Source: AIHW National Mortality Database.

Age-specific rates for non-Indigenous people living in Major Cities were similar to those for the total population living in Major Cities.

Age-specific death rates were lower for non-Indigenous people than they were for the total population in Remote and particularly Very Remote areas, although rarely significantly different from those in Major Cities and tending to show no clear increase with remoteness. Rates for Inner Regional males older than 74 years were 0.8 times those for similar males from Major Cities, but were not significantly different in this age group in the more remote areas.

There were -28, -7, 1 and 1 'excess' deaths of non-Indigenous males annually from pneumonia, and -9, 1, 1 and 0 'excess' deaths of non-Indigenous females annually in the four

areas outside Major Cities. There were substantially fewer 'excess' deaths than expected amongst those older than 70 years and practically no 'excess' in younger age groups.

Mortality for those aged 0–64 years

Indigenous population

Annually there were 23 (13 male, 10 female) deaths of Indigenous people younger than 65 years in South Australia, Western Australia, the Northern Territory and Queensland as a result of pneumonia. There would also have been a number of deaths due to this cause in the other jurisdictions. Of these 23 deaths, there were 22 (12 males and 9 females) more than expected.

For Indigenous males and females who were younger than 65 years old, there were 23 and 24 times as many deaths as expected (Table 6.9).

Non-Indigenous population

Annually, there were 41, 13, 8, 1 and 1 deaths of non-Indigenous males younger than 65 years and 25, 12, 5, 0 and 0 deaths of non-Indigenous females younger than 65 years in the five areas respectively, as a result of pneumonia.

For females from Inner Regional areas, there were 1.5 times as many deaths as expected as a result of pneumonia; otherwise the numbers of deaths in each area were not significantly different from the numbers expected (Table 6.9).

As a result of pneumonia, there were 0, 1, 0 and 0 'excess' deaths of non-Indigenous males younger than 65 years annually, and 4, 1, 0 and 0 'excess' deaths of non-Indigenous females younger than 65 years annually in the four areas outside Major Cities.

6.4 Asthma

Asthma (ICD-10 codes J45–J46) 'is a chronic inflammatory disorder of the lung's air passages that makes them narrow in response to various triggers, leading to episodes of shortness of breath and wheezing' (AIHW 2002a). Prevention involves drug therapy and avoiding triggers such as tobacco smoke, fine organic dusts such as flour, sawdust, grain dust, and chemicals used with the manufacture of plastics and resins (AIHW 2002a).

Summary of findings

Annually, asthma was responsible for the deaths of 467 people (184 males and 283 females); 171 of these people came from areas outside Major Cities. Of these 467 deaths, 7 were of Indigenous people living in South Australia, Western Australia, the Northern Territory and Queensland.

Overall there were about 10–20% (1.1–1.2 times) more deaths than expected in the areas outside Major Cities. While there were more deaths than expected in all areas, there were only significantly more in two areas – Outer Regional and Remote areas where rates were 1.3 and 2.2 times those in Major Cities.

There were about three times as many deaths of Indigenous people as expected from asthma. For non-Indigenous people, asthma death rates for both sexes in regional and remote areas were not significantly different from those in Major Cities (except for Remote areas where there were 2.2 times as many deaths of non-Indigenous males as expected).

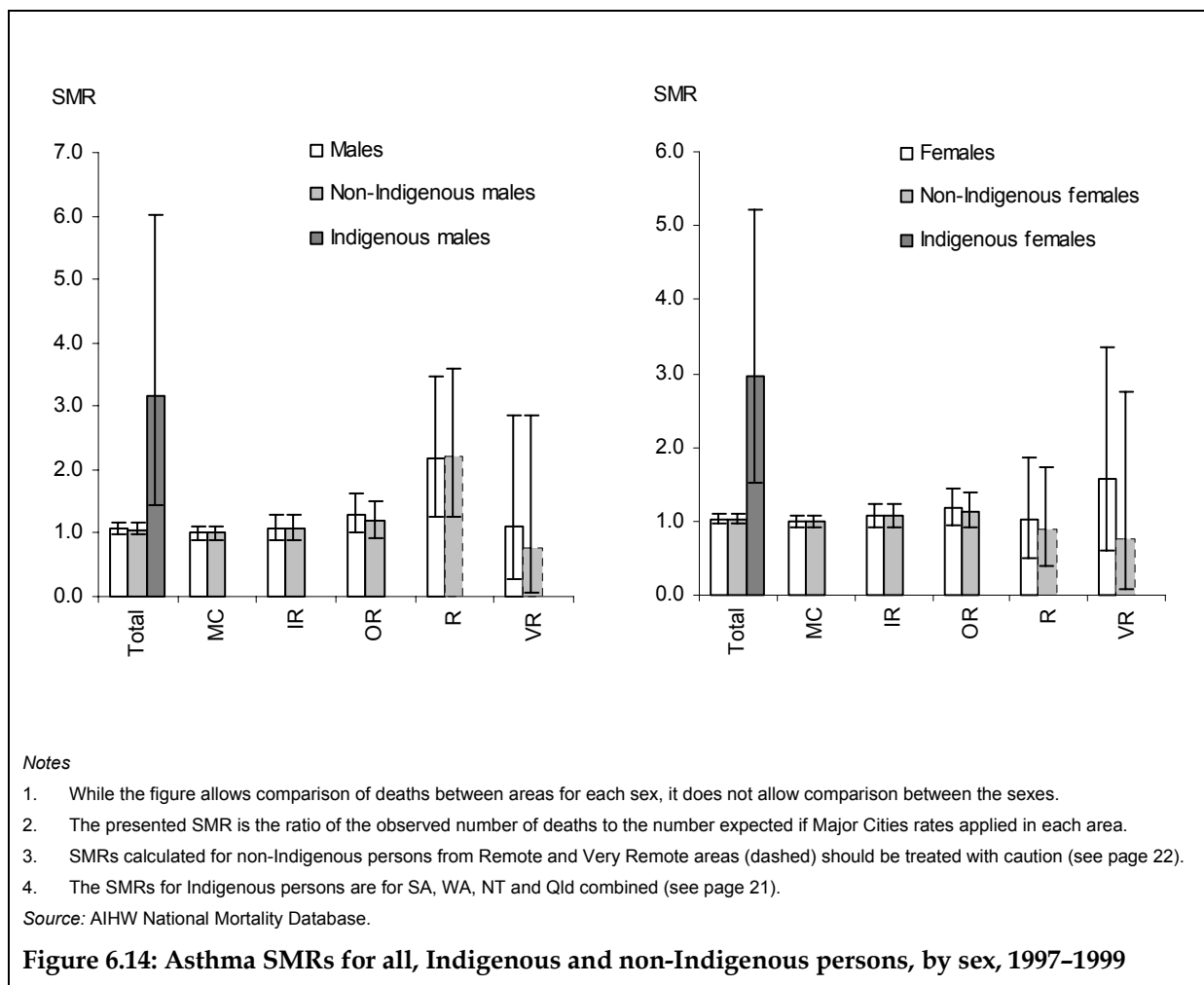
Annually, there were 21 'excess' deaths due to asthma outside Major Cities (7, 10, 3 and 1 in each of the four areas).

Overall mortality due to asthma

Annually, there were 112, 41, 24, 6 and 1 deaths of males and 184, 62, 32, 3 and 2 deaths of females in the five areas as a result of asthma.

Death rates due to asthma tended to be higher outside Major Cities (Figure 6.14 and Table 6.10).

- There were slightly more deaths of males and females than expected in Inner Regional areas, but the observed number for each sex was not significantly different from that expected for each sex.
- There were 1.3 and 2.2 times as many deaths of males as expected in Outer Regional and Remote areas. In Very Remote areas, death rates were not significantly different from the Major Cities rate.
- Although there tended to be more deaths of females than expected in Outer Regional and remote areas, the difference was not significant.
- There were about 3 times as many deaths of Indigenous people due to asthma as expected.



In Major Cities, death rates for both sexes due to asthma rose steadily to 11 per 100,000 per year at age 75-79 years, reaching 25 per 100,000 per year for males aged 85 years and older and 45 per 100,000 per year for females aged 85 years and older.

- For most age groups, there are more deaths than expected in most areas.
- For 25-44-year-old males and females (an age at which asthma death rates tend to be relatively low) there were 2.4 and 4.4 times as many deaths of males in Outer Regional and Remote areas, and 6.0 times as many deaths of females in Very Remote areas as expected.
- For people 65 years and older (the life stage at which most of the asthma deaths occur), it is difficult to identify a clear tendency, with observed numbers of deaths not significantly different from the number expected. However, there were 0.6 times as many deaths of 65-74-year-old males from Inner Regional areas as expected.

As a result of asthma, there were 3, 6, 3 and 0 'excess' deaths of males annually, and 4, 5, 0 and 1 'excess' deaths of females annually in the four areas outside Major Cities.

Table 6.10: The ratio of observed deaths to those expected if Major Cities rates applied in each ASGC Remoteness area, asthma, males and females, 1997–1999

Age group (years)	Male					Female				
	MC rate	IR	OR	R	VR	MC rate	IR	OR	R	VR
		(ratio)					(ratio)			
0–4	<1	0.00	0.00	0.00	0.00	1	0.00	0.00	0.00	0.00
5–14	<1	1.72	1.38	3.23	0.00	<1	2.75	0.07	0.00	0.00
15–24	1	0.80	0.90	2.31	0.17	1	1.15	1.41	2.50	0.25
25–44	<1	1.64	*2.35	*4.42	1.83	1	1.08	1.42	0.64	*6.01
45–64	2	1.28	*1.98	1.46	2.43	3	1.11	1.42	1.92	1.21
65–74	7	*0.64	0.64	1.75	0.00	7	1.25	1.27	1.01	2.20
75+	16	1.22	1.25	2.13	1.05	22	0.97	1.05	0.59	0.00
Total	..	1.08	*1.29	*2.17	1.09	..	1.07	1.18	1.01	1.58

* Significantly different from 1 (that is, rates are significantly different from those in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.

Source: AIHW National Mortality Database.

Indigenous population

Annually in the period 1997–1999, there were 7 deaths of Indigenous people (3 males and 4 females) in South Australia, Western Australia, the Northern Territory and Queensland as a result of asthma. There would also have been a number of deaths due to this cause in the other jurisdictions where identification is less reliable. Of these 7 deaths, there were 5 (2 males and 3 females) more than expected (Table 6.11).

There were about three times as many deaths of Indigenous males and females as expected as a result of asthma. The numbers of deaths were very small; nearly all of the ‘excess’ deaths occurred in people aged 25–64 years.

Non-Indigenous population

Annually, there were 112, 41, 22, 5 and 1 deaths of non-Indigenous males and 184, 62, 30, 3 and 1 deaths of non-Indigenous females in the five areas as a result of asthma.

Asthma death rates for both sexes in regional and remote areas (Table 6.11) were not significantly different from those in Major Cities (except for Remote areas where there were 2.2 times as many deaths of non-Indigenous males as expected).

Age-specific rates for non-Indigenous people living in Major Cities were similar to those for the total population living in Major Cities.

Annually, there were 3, 3, 3 and 0 ‘excess’ deaths of non-Indigenous males, and 4, 3, 0 and 0 ‘excess’ deaths of non-Indigenous females in the four areas outside Major Cities as a result of asthma.

Table 6.11: The ratio of observed deaths to those expected as a result of asthma if Major Cities non-Indigenous rates applied to the non-Indigenous population in each ASGC Remoteness area and to the Indigenous population, 1997–1999

Age group (years)	Male						Female					
	MC rate	Non-Indigenous				Indigenous	MC rate	Non-Indigenous				Indigenous
		IR	OR	R	VR			IR	OR	R	VR	
0–4	<1	0.00	0.00	0.00	0.00	0.0	1	0.00	0.00	0.00	0.00	0.0
5–14	<1	1.75	0.91	3.80	0.00	0.0	<1	2.79	0.08	0.00	0.00	0.0
15–24	1	0.81	0.95	2.68	0.33	0.0	1	1.17	1.50	2.99	0.58	0.0
25–44	<1	1.71	1.93	4.16	2.71	*6.7	1	1.09	1.21	0.56	2.42	*5.9
45–64	2	1.24	*1.67	1.43	0.00	*11.6	3	1.11	1.33	1.61	0.00	*4.3
65–74	7	*0.64	0.64	1.81	0.00	0.0	7	1.25	1.22	0.57	2.54	4.1
75+	16	1.22	1.27	2.27	1.43	0.0	22	0.96	1.03	0.62	0.00	1.2
Total	..	1.08	1.19	*2.22	0.76	3.2	..	1.06	1.13	0.89	0.77	*3.0
0–64	..	1.29	*1.52	*2.41	0.75	4.5	..	1.11	1.21	1.27	0.84	*3.3

* Significantly different from 1 (that is, rates are significantly different from those for non-Indigenous people in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates for non-Indigenous persons are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. Ratios for Indigenous people are for SA, WA, NT and Qld.
4. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.
5. SMRs calculated for non-Indigenous persons from Remote and Very Remote areas should be treated with caution (see page 22).

Source: AIHW National Mortality Database.

Mortality for those aged 0–64 years

Indigenous population

Annually there were 6 (3 male, 3 female) deaths of Indigenous people younger than 65 years in South Australia, Western Australia, the Northern Territory and Queensland as a result of asthma. There would also have been a number of deaths due to this cause in the other jurisdictions. Of these 6 deaths, there were 4 (2 males and 2 females) more than expected.

For Indigenous males and females who were younger than 65 years, there were 5 and 3 times as many deaths as expected (Table 6.11).

Non-Indigenous population

Annually, there were 43, 17, 11, 3 and 0 deaths of non-Indigenous males younger than 65 years and 61, 21, 11, 2 and 0 deaths of non-Indigenous females younger than 65 years in the five areas respectively as a result of asthma.

There were 1.5 and 2.4 times as many deaths of 0–64-year-old non-Indigenous males as expected in Outer Regional and Remote areas (with rates in Inner Regional areas higher, but not significantly higher). Although there tended to be more deaths than expected for females

in three of the areas, the differences between the numbers observed and expected in each area were not statistically significant (Table 6.11).

Annually, there were 4, 4, 2 and 0 'excess' deaths of non-Indigenous males younger than 65 years, and 2, 2, 0 and 0 'excess' deaths of non-Indigenous females younger than 65 years in the four areas outside Major Cities as a result of asthma.

6.5 Influenza

Influenza (ICD-10 codes J10–J11) is a highly infectious disease caused by a virus transmitted in respiratory droplets produced during coughing or sneezing. Complications of influenza include acute bronchitis, croup, acute otitis media, pneumonia and cardiovascular complications. While influenza itself may not be recorded as the cause of death, its complications (for example, pneumonia) may lead to death and be recorded as the underlying cause of death. Individuals whose medical condition makes them vulnerable to disease may develop bacterial pneumonia, which may be fatal. Annual vaccination against influenza is recommended for individuals who are at increased risk of influenza-related complications (NHMRC 2000).

Because of the relationship between influenza and pneumonia, they are often reported together. In this report they have been reported separately, but should be considered jointly.

Summary of findings

Annually, influenza was responsible for the deaths of 134 people (58 males and 76 females); 63 of these people came from areas outside Major Cities. Of these 134 deaths, one was of an Indigenous person living in South Australia, Western Australia, the Northern Territory and Queensland.

Death rates due to influenza tended to be higher outside Major Cities, with 1.8 and 2.3 times as many deaths of males in Inner and Outer Regional areas, and 1.5 and 3.9 times as many deaths of females as expected in regional and Remote areas. Rates were higher in all the other areas than in Major Cities, but the difference did not reach statistical significance.

The number of deaths of Indigenous people was not significantly greater than expected.

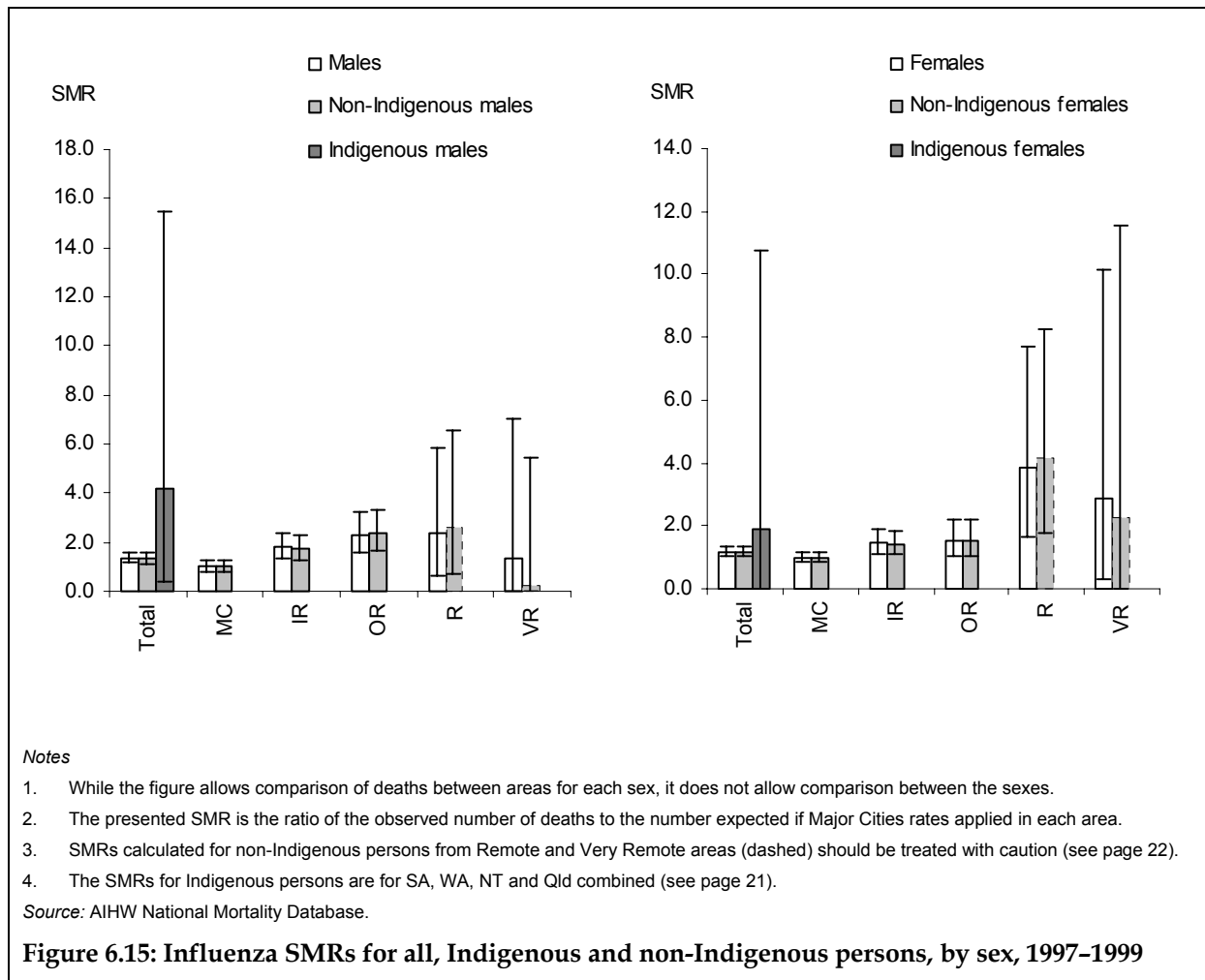
For non-Indigenous people, death rates due to influenza tended to be higher in Inner and Outer Regional areas. There were 1.7 and 2.4 times as many deaths of males in Inner and Outer Regional areas, and 1.4, 1.5 and 4.2 times as many deaths of females as expected in Inner and Outer Regional, and Remote areas.

There were very few deaths of people younger than 65 years of age due to influenza.

Annually, there were 27 'excess' deaths due to influenza outside Major Cities (14, 9, 3 and 1 in the four areas). About 80% of the 'excess' occurred in those aged 75 years and older.

Overall mortality due to influenza

Annually, there were 28, 18, 11, 1 and 0 deaths of males and 43, 20, 9, 3 and 1 deaths of females in the five areas respectively, as a result of influenza.



Death rates due to influenza tended to be higher outside Major Cities, however, the actual number of deaths were relatively small and differences did not often reach statistical significance (Figure 6.15 and Table 6.12).

- There were 1.8 and 2.3 times as many deaths of males as expected in Inner and Outer Regional areas, with more (but not significantly more) deaths than expected in remote areas.
- There were 1.5, 1.5 and 3.9 times as many deaths of females as expected in Inner and Outer Regional and Remote areas, with more (but not significantly more) deaths than expected in Very Remote areas.
- There were very few deaths of Indigenous people due to influenza.

Table 6.12: The ratio of observed deaths to those expected if Major Cities rates applied in each ASGC Remoteness area, influenza, males and females, 1997–1999

Age group (years)	Male					Female				
	MC rate	IR	OR	R	VR	MC rate	IR	OR	R	VR
		(ratio)					(ratio)			
0–4	<1	2.30	1.95	0.00	0.00	<1	2.45	1.05	0.00	0.00
5–14	0	..	..	..	..	0	..	..	..	..
15–24	0	..	..	..	..	0	..	..	..	..
25–44	<1	0.00	0.00	0.00	0.00	<1	1.85	0.00	18.87	35.11
45–64	<1	1.76	0.59	3.83	8.70	<1	3.01	0.16	0.00	55.09
65–74	1	1.67	2.04	0.00	0.00	1	0.93	0.56	3.58	1.91
75+	8	*1.80	*2.60	2.83	0.27	9	*1.45	*1.71	*3.71	0.00
Total	..	*1.81	*2.30	2.36	1.36	..	*1.45	*1.52	*3.88	2.88

* Significantly different from 1 (that is, rates are significantly different from those in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.

Source: AIHW National Mortality Database.

In Major Cities, death rates for males and females up to the age of 60 years were 0 per 100,000 population. Death rates reached 29 per 100,000 population per year for males aged 85 years and older and 21 per 100,000 population per year for females of the same age group.

- For those who were 75 years or older, there were 1.8 and 2.6 times as many deaths of males and 1.5 and 1.7 times as many deaths of females as expected in Inner and Outer Regional areas. In Remote areas there also appeared to be more deaths than expected (3.7 times as many deaths of females as expected).
- There were very few deaths amongst those younger than 75 years.

There were 8, 6, 1 and 0 ‘excess’ deaths from influenza of males annually, and 6, 3, 2 and 0 ‘excess’ deaths of females annually in the four areas outside Major Cities. The majority of ‘excess’ deaths for influenza occurred in persons aged 80 years and older.

Indigenous population

Annually in the period 1997–1999, there was about 1 death of an Indigenous person in South Australia, Western Australia, the Northern Territory and Queensland due to influenza. Based on Major Cities rates for non-Indigenous people, this is about as many deaths as expected (Table 6.13).

Non-Indigenous population

Annually, there were 28, 17, 11, 1 and 0 deaths of non-Indigenous males and 43, 20, 9, 3 and 0 deaths of non-Indigenous females in the five areas respectively, as a result of influenza.

Death rates due to influenza tended to be higher outside Major Cities (Table 6.13).

- There were 1.7 and 2.4 times as many deaths of non-Indigenous males as expected in Inner and Outer Regional areas due to this cause. In each of the remote areas the numbers of deaths were not significantly different to the number expected.
- There were 1.4, 1.5 and 4.2 times as many deaths of non-Indigenous females as expected in Inner and Outer Regional and remote areas due to this cause. The number of deaths of females in Very Remote areas was not significantly different to the number expected.

Table 6.13: The ratio of observed deaths to those expected as a result of influenza if Major Cities non-Indigenous rates applied to the non-Indigenous population in each ASGC Remoteness area and to the Indigenous population, 1997–1999

Age group (years)	Male						Female					
	MC rate	Non-Indigenous				Indig-enous	MC rate	Non-Indigenous				Indig-enous
		IR	OR	R	VR			IR	OR	R	VR	
0–4	<1	2.35	2.10	0.00	0.00	0.0	<1	2.51	1.13	0.00	0.00	0.0
5–14	0	..	..	..	..	..	0	..	..	..	..	..
15–24	0	..	..	..	..	..	0	..	..	..	..	..
25–44	<1	0.00	0.00	0.00	0.00	0.0	<1	1.87	0.00	20.91	0.00	27.1
45–64	<1	1.76	0.60	4.01	0.00	14.3	<1	3.02	0.16	0.00	83.92	0.0
65–74	1	1.45	2.05	0.00	0.00	18.3	1	0.93	0.57	3.74	2.80	0.0
75+	8	*1.75	*2.68	3.21	0.43	0.0	9	*1.42	*1.73	*3.99	0.00	0.0
Total	..	*1.74	*2.36	2.62	0.27	4.2	..	*1.43	*1.54	*4.17	2.24	1.9
0–64	..	1.99	1.30	2.78	0.00	5.0	..	2.96	0.64	6.77	20.69	7.2

* Significantly different from 1 (that is, rates are significantly different from those for non-Indigenous people in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates for non-Indigenous persons are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. Ratios for Indigenous people are for SA, WA, NT and Qld.
4. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.
5. SMRs calculated for non-Indigenous persons from Remote and Very Remote areas should be treated with caution (see page 22).

Source: AIHW National Mortality Database.

Age-specific rates for non-Indigenous people living in Major Cities were similar to those for the total population living in Major Cities.

Non-Indigenous age-specific death rate patterns are similar to those exhibited by the total population. Death rates for males aged 75 years and older in Inner and Outer Regional areas were 1.8 and 2.7 times those in Major Cities. Death rates for females aged 75 years and older in Inner and Outer Regional areas were 1.4 and 1.7 times those in Major Cities.

There were 7, 6, 1 and 0 'excess' deaths from influenza of non-Indigenous males annually, and 6, 3, 2 and 0 'excess' deaths of non-Indigenous females annually in the four areas outside Major Cities. The majority of 'excess' deaths attributed to influenza occurred in non-Indigenous persons aged 70 years and older.

Mortality for those aged 0–64 years

Indigenous population

Annually there was 1 death of an Indigenous person younger than 65 years in South Australia, Western Australia, the Northern Territory and Queensland as a result of influenza. There may also have been other deaths due to this cause in the other jurisdictions.

This death was about as many as expected due to this cause (Table 6.13).

Non-Indigenous population

Annually, there were 4, 3, 1, 0 and 0 deaths of non-Indigenous males younger than 65 years and 2, 2, 0, 0 and 0 deaths of non-Indigenous females younger than 65 years in the five areas, respectively as a result of influenza.

In all areas and for both sexes of non-Indigenous people younger than 65 years, the small number of deaths due to influenza outside Major Cities was not significantly different from the number expected (Table 6.13).

As a result of influenza, there were 1, 0, 0 and 0 'excess' deaths of non-Indigenous males younger than 65 years annually, and 1, 0, 0 and 0 'excess' deaths of non-Indigenous females younger than 65 years annually in the four areas outside Major Cities.

6.6 'Other' respiratory diseases

Other respiratory diseases (ICD-10 codes J00–J99, excluding the respiratory diseases described earlier in this report) are included because as a group they are responsible for a substantial number of deaths. Differences in death rates across areas for this range of diseases may suggest further work to identify potential targets for intervention. Specific causes of death included in this diverse group include acute upper respiratory infections (for example, acute tonsillitis), other acute lower respiratory infections (for example, acute bronchitis), lung diseases due to external agents (for example, pneumoconiosis) and others (for example, respiratory failure).

Summary of findings

Annually, 'other' respiratory diseases were responsible for the deaths of 1,753 people (937 males and 816 females); 548 of these people came from areas outside Major Cities. Of these 1,753 deaths, 29 were of Indigenous people living in South Australia, Western Australia, the Northern Territory and Queensland.

In most areas, death rates due to 'other' respiratory diseases tended to be lower than or similar to those in Major Cities, although rates for males were significantly higher in Very Remote areas than in Major Cities. Typically there were 0.8–0.9 times as many deaths as expected in regional areas and about as many, or up to 1.7 times as many, as expected in remote areas.

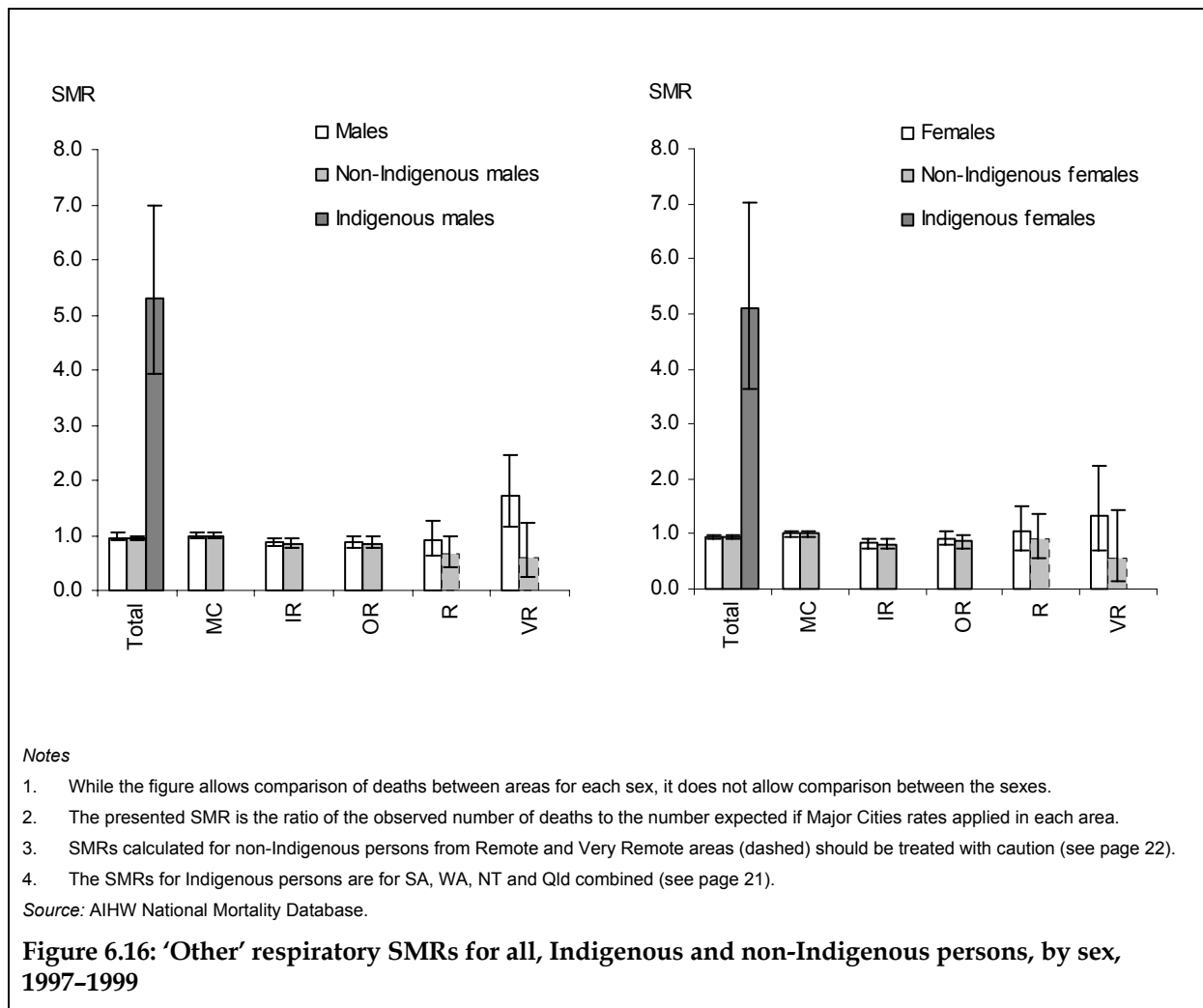
There were about five times as many deaths of Indigenous people as expected from 'other' respiratory diseases.

Death rates for non-Indigenous people due to 'other' respiratory diseases tended to be lower than or similar to those in Major Cities, with 0.8 or 0.9 times as many deaths as expected in regional areas. In remote areas there were 0.7 times as many (or lower but not significantly lower numbers of) deaths as expected. There were about as many deaths of non-Indigenous people younger than 65 years as expected.

Annually, there were 78 fewer deaths than expected due to 'other' respiratory diseases outside Major Cities (63, 20 and 1 fewer, and 5 'excess' in the four areas). In Inner Regional areas, practically all age groups exhibited fewer deaths than expected, however in Outer Regional and remote areas there was an 'excess' of 19 deaths among those younger than 65 years. It is likely that high Indigenous mortality due to this cause is largely responsible for this relatively small 'excess'.

Overall mortality due to 'other' respiratory diseases

Annually, there were 630, 191, 95, 12 and 10 deaths of males and 575, 151, 76, 10 and 4 deaths of females in the five areas as a result of 'other' respiratory diseases.



Death rates due to 'other' respiratory diseases tended to be similar to or lower than those in Major Cities, although rates for males were significantly higher in Very Remote areas than in Major Cities (Figure 6.16 and Table 6.14).

- There were 0.9 times as many deaths of males as expected in Inner and Outer Regional areas, but 1.7 times as many as expected in Very Remote areas. The difference between the observed and expected numbers of deaths in Remote areas was not significantly different.
- There were 0.8 times as many deaths of females as expected in Inner Regional areas. The difference between the observed and expected numbers of deaths in the other areas was not significantly different.
- There were about 5 times as many deaths of Indigenous people due to 'other' respiratory disease as expected.

Table 6.14: The ratio of observed deaths to those expected if Major Cities rates applied in each ASGC Remoteness area, 'other' respiratory disease, males and females, 1997–1999

Age group (years)	Male					Female				
	MC rate	IR	OR	R	VR	MC rate	IR	OR	R	VR
		(ratio)					(ratio)			
0–4	2	1.08	1.04	1.93	0.02	1	0.91	0.95	3.61	0.62
5–14	<1	0.00	0.00	0.00	15.55	<1	0.58	0.08	0.08	0.00
15–24	<1	3.24	7.06	13.90	22.64	<1	0.24	2.39	0.00	0.00
25–44	1	1.21	1.91	*6.50	*14.09	1	0.36	1.60	0.55	*8.59
45–64	5	0.79	1.25	1.02	*4.52	3	0.96	1.39	2.34	2.12
65–74	36	1.00	0.86	0.81	0.98	19	*0.75	0.91	1.47	2.40
75+	166	*0.81	*0.80	0.64	0.63	105	*0.84	*0.83	0.73	0.53
Total	..	*0.86	*0.89	0.91	*1.71	..	*0.82	0.91	1.04	1.32

* Significantly different from 1 (that is, rates are significantly different from those in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.

Source: AIHW National Mortality Database.

In Major Cities, death rates for males up to the age of 40 years were generally around zero with rates increasing to 100 per 100,000 per year at age 75–79, and further to 340 per 100,000 per year for those 85 years and older. Rates were similar for females, peaking at 210 per 100,000 per year in the oldest age group.

Death rates in regional and remote areas were generally not significantly different from those in Major Cities with the following exceptions:

- for those aged 25–64 years (life stages at which death due to this cause is reasonably rare), there were up to 4.5–14.1 times as many deaths as expected in remote areas; and
- for people 65 years and older, there were frequently fewer deaths than expected, with 0.8 times as many deaths as expected of regional males and females who were 75 years and older.

As a result of 'other' respiratory diseases, there were -31, -12, -1 and 4 'excess' deaths of males annually, and -32, -8, 0 and 1 'excess' deaths of females annually in the four areas outside Major Cities. While there were a small number of 'excess' deaths in persons younger than 60 years, for those older than 60 years there were substantially fewer deaths than expected outside Major Cities.

Indigenous population

Annually in the period 1997–1999, there were 29 deaths of Indigenous people (16 males and 13 females) in South Australia, Western Australia, the Northern Territory and Queensland as a result of 'other' respiratory diseases. There would also have been a number of deaths due to this cause in the other jurisdictions where identification is less reliable. Of these 29 deaths, there were 23 (13 males and 10 females) more than expected.

There were about 5 times as many deaths of Indigenous males and females as expected (Table 6.15). About 80% and 70% of the 'excess' deaths occurred amongst males and females aged 25–64 years.

Non-Indigenous population

Annually, there were 628, 189, 89, 8 and 2 deaths of non-Indigenous males and 571, 150, 71, 8 and 1 deaths of non-Indigenous females in the five areas respectively as a result of 'other' respiratory diseases.

Death rates due to 'other' respiratory diseases tended to be lower than or similar to those in Major Cities (Table 6.15).

For non-Indigenous males in regional and Remote areas, there were 0.9 and 0.7 times as many deaths as expected. The number of deaths in Very Remote areas was lower, but not significantly lower than expected.

For non-Indigenous females in Inner and Outer Regional areas, there were 0.8 and 0.9 times as many deaths as expected. The number of deaths in remote areas was lower, but not significantly lower than expected.

Table 6.15: The ratio of observed deaths to those expected as a result of 'other' respiratory disease if Major Cities non-Indigenous rates applied to the non-Indigenous population in each ASGC Remoteness area and to the Indigenous population, 1997–1999

Age group (years)	Male						Female					
	MC rate	Non-Indigenous				Indig-enous	MC rate	Non-Indigenous				Indig-enous
		IR	OR	R	VR			IR	OR	R	VR	
0–4	1	0.95	0.62	2.26	0.04	1.3	1	1.00	1.10	0.00	0.00	5.4
5–14	<1	0.00	0.00	0.00	0.00	8.4	<1	0.59	0.09	0.10	0.00	0.0
15–24	<1	5.20	11.67	0.00	0.00	*59.9	<1	0.24	2.54	0.00	0.00	0.0
25–44	1	1.18	1.20	2.68	0.11	*36.4	1	0.27	1.31	0.00	0.00	*15.7
45–64	5	0.76	1.04	0.59	1.18	*12.3	3	0.99	1.02	1.84	0.57	*14.4
65–74	36	1.01	0.85	0.73	0.53	2.6	19	*0.76	0.88	1.43	1.97	*4.2
75+	166	*0.80	*0.81	*0.54	0.52	1.3	105	*0.83	*0.83	0.73	0.31	1.6
Total	..	*0.86	*0.86	*0.67	0.59	*5.3	..	*0.82	*0.86	0.90	0.55	*5.1
0–64	..	0.84	1.08	0.99	0.91	*13.8	..	0.86	1.06	1.22	0.36	*11.1

* Significantly different from 1 (that is, rates are significantly different from those for non-Indigenous people in Major Cities).

Notes

1. Caution should be used when making inferences about ratios that are not significantly different from 1.
2. MC rates for non-Indigenous persons are expressed as deaths per 100,000 population per year. Total (crude) MC rate is largely meaningless and is not included.
3. Ratios for Indigenous people are for SA, WA, NT and Qld.
4. While the table allows comparison of deaths between areas for each sex, it does not allow comparison between the sexes or age groups.
5. SMRs calculated for non-Indigenous persons from Remote and Very Remote areas should be treated with caution (see page 22).

Source: AIHW National Mortality Database.

Age-specific death rates for non-Indigenous people living in Major Cities were similar to those for the total population living in Major Cities.

As a result of 'other' respiratory diseases, there were 31, 15, 4 and 2 fewer deaths of non-Indigenous males than expected annually, and 33, 11, 1 and 1 fewer deaths of non-Indigenous females than expected annually in the four areas outside Major Cities. While there were a small number of 'excess' deaths in those younger than 60 years, for those older than 70 years, there were substantially fewer deaths than expected outside Major Cities.

Mortality for those aged 0–64 years

Indigenous population

Annually there were 22 (13 male, 9 female) deaths of Indigenous people younger than 65 years in South Australia, Western Australia, the Northern Territory and Queensland as a result of 'other' respiratory disease. There would also have been a number of deaths due to this cause in the other jurisdictions. Of these 20 deaths, there were 20 (12 males and 8 females) more than expected.

For Indigenous males and females who were younger than 65 years, there were 14 and 11 times as many deaths as expected as a result of 'other' respiratory diseases (Table 6.15).

Non-Indigenous population

Annually, there were 78, 21, 15, 2 and 1 deaths of non-Indigenous males younger than 65 years and 60, 17, 10, 2 and 0 deaths of non-Indigenous females younger than 65 years in the five areas respectively, as a result of 'other' respiratory diseases.

The number of deaths of males and females observed in each area was not significantly different from the number expected (Table 6.15).

There were -4, 1, 0 and 0 more deaths from 'other' respiratory diseases of non-Indigenous males younger than 65 years than expected annually, and -3, 1, 0 and 0 more deaths of non-Indigenous females younger than 65 years than expected annually in the four areas outside Major Cities.