

## 6 Diseases of the respiratory system

### Chapter highlights

*Diseases of the respiratory system were responsible for about 9% of all deaths, but for about 5% and 10% of excess deaths in regional and remote areas respectively.*

*Half of all deaths in this chapter were due to COPD, 25% due to pneumonia and influenza, 3% due to asthma, and about 25% due to 'other' respiratory diseases.*

*Almost all of the excess deaths in this chapter are due to COPD, with about 9% due to asthma. However, for the other two causes, there were fewer deaths than expected amongst those older than 75 years. For those younger than 65 years, 65% of excess deaths were due to COPD, 20% due to pneumonia and influenza, 11% due to asthma and 25% due to 'other' respiratory diseases.*

*COPD was responsible for about 10% of the excess deaths in regional and remote areas, and as such, is a substantial contributor to overall higher rates of death outside Major Cities.*

*Most of the excess deaths were amongst males and people aged 45–64 and 65–74 years. For females aged 75 years and older, there were fewer deaths than expected.*

*Indigenous Australians had respiratory death rates that were four times higher than the rates for non-Indigenous Australians in Major Cities.*

*For males, SMRs increase with remoteness, 1.1, 1.2, 1.3 and 2.0 in Inner Regional, Outer Regional, Remote and Very Remote areas respectively. For females SMRs are only higher than 1.0 in Very Remote areas (where the SMR is 1.8).*

*However, for people younger than 65 years, SMRs in the four areas were about 1.3, 1.5, 2.2 and 4.9 for both males and females.*

*For non-Indigenous Australians, SMRs were 1.1 and 1.2 for males in Inner Regional and Outer Regional areas. In remote areas and for females in regional and remote areas generally SMRs were about 1.0. For non-Indigenous Australians younger than 65 years, SMRs in regional areas were around 1.3, and those in remote areas were not significantly different from 1.0.*

*Death rates are declining for males, fastest in Outer Regional and especially Very Remote areas. For females, death rates are increasing in Major Cities and Inner Regional areas, showing little change in Outer Regional areas and declining in remote areas.*

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 and influenza
3. asthma
4. 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 Australian populations.

On average during the period, diseases of the respiratory system were responsible for 11,733 deaths annually – this is 8.8% of all deaths. Over half (52%) were male; 64% were in Major Cities, 34% in regional areas and 2% in remote areas.

Overall rates of death for Indigenous Australians due to diseases of the respiratory system were four times higher than the rates for non-Indigenous Australians in Major Cities.

#### **In regional areas:**

Compared with Major Cities, death rates for males were 5% and 15% higher in Inner Regional and Outer Regional areas, while for females, rates in regional areas were not significantly different from those in Major Cities.

For 0–64 year olds, death rates were 1.3 and 1.5 times those in Major Cities.

The inter-regional pattern for non-Indigenous Australians was similar to that above, although for people younger than 65 years, rates in Outer Regional areas were 1.3 times those in Major Cities.

Annually there are 2,712 and 1,271 deaths in Inner Regional and Outer Regional areas; about 55% were male.

Annually there were 83 and 103 ‘excess’ deaths in Inner Regional and Outer Regional areas; this is 4% and 6% of all ‘excess’ deaths in Inner Regional and Outer Regional areas. Almost all (94%) of the ‘excess’ deaths were male, mainly aged 45–74 years. However, while there were 73 more deaths of 45–74 year old females than expected, there were 66 fewer deaths than expected of females older than 74 years.

Compared with the previous reporting period (1997–99), there were 224 more deaths of males and 398 more deaths of females annually in 2002–04.

The 12-year trend (AIHW 2006a) is for decreasing death rates for males (faster in Outer Regional areas than in Major Cities), increasing death rates for females in Inner Regional areas and no clear change in Outer Regional areas.

Between 1997–99 and 2002–04, the number of excess deaths in regional areas decreased for males and increased for females (as estimated using 2002–04 Major Cities rates as the standard). For example, in 1997–99 there were 140 more and 90 fewer deaths of Inner Regional males and females annually than if 2002–04 Major Cities age-and sex-specific rates had applied; in 2002–04, this number had decreased for males to 76 more, and increased for females to 8 more deaths than if 2002–04 Major Cities age-specific rates had applied.

Death rates<sup>14</sup> appeared to decrease for regional males and to increase (or remain similar) for regional females between the previous (1997–99) and the more recent (2002–04) reporting periods.

With the exception of females in Inner Regional areas, the relative differences<sup>15</sup> between Major Cities and regional areas appear to have decreased.

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<sup>14</sup> As expressed by SMRs calculated for both periods using Major Cities age-and sex-specific rates in 2002–04 as the standard.

<sup>15</sup> As expressed by SMRs calculated for each period using Major Cities age-and sex-specific rates in each period as the standard.

### **In remote areas:**

Death rates for males in Remote and Very Remote areas were 1.3 and 2 times those in Major Cities. Death rates for females in Remote areas were indistinguishable from those in Major Cities, while those in Very Remote areas were 1.8 times those in Major Cities.

For 0–64 year olds, death rates for both sexes were substantially higher than in Major Cities. Overall rates in Remote and Very Remote areas were 2.15 and 4.9 times those in Major Cities.

When the analysis is repeated for non-Indigenous Australians, the differences disappear, that is, the higher rates for the total population are essentially a reflection of Indigenous Australian mortality. Rates for non-Indigenous Australian males and females were not significantly different from those in Major Cities.

Annually there are 153 and 91 deaths in Remote and Very Remote areas; about 62% were male.

Annually there were 24 and 43 ‘excess’ deaths in Remote and Very Remote areas; this is 9% and 10% of all ‘excess’ deaths in Remote and Very Remote areas. Three-quarters (73%) were male. The excess appeared to be people mainly aged 45–74 years, with fewer than expected deaths amongst females older than 75 years.

Compared with the previous reporting period (1997–99), there were 12 more deaths of males and the same number of deaths of females annually in 2002–04.

The 12-year trend (AIHW 2006a) is for decreasing death rates for males and females, with quite substantial declines in Very Remote areas.

Between 1997–99 and 2002–04, the number of excess deaths in remote areas changed little for males and decreased slightly for females (as estimated using 2002–04 Major Cities rates as the standard). For example, in 1997–99 there were 52 and 28 more deaths of remote area males and females annually than if 2002–04 Major Cities age- and sex-specific rates had applied; in 2002–04, these numbers had become 49 and 18 more deaths than if 2002–04 Major Cities age-specific rates had applied.

Death rates<sup>16</sup> appeared to have decreased slightly between the previous (1997–99) and the more recent (2002–04) reporting periods (for example, SMRs for Remote area males were 1.4 in 1997–99, and became 1.3 in 2002–04 compared with 1.0 for Major Cities males in 2002–04).

However, the relative differences<sup>17</sup> between Major Cities and remote areas appear to have changed little for males and to have decreased slightly for females.

Chronic obstructive pulmonary disease contributed most to overall numbers of deaths and excess deaths in this cause grouping.

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<sup>16</sup> As expressed by SMRs calculated for both periods using Major Cities age- and sex-specific rates in 2002–04 as the standard.

<sup>17</sup> As expressed by SMRs calculated for each period using Major Cities age- and sex-specific rates in each period as the standard.

**Table 6.1: Average annual deaths and 'excess' deaths, by type of respiratory disease, 2002-04**

Cause of death	Males					Females				
	MC	IR	OR	R	VR	MC	IR	OR	R	VR
<b>Deaths</b>										
Pneumonia and flu	951	329	153	19	16	1,247	421	174	19	9
Asthma	71	34	15	2	1	138	55	20	2	2
COPD	1,825	810	433	57	31	1,421	532	235	26	16
Other	941	287	129	17	10	893	245	112	11	7
<b>Total</b>	<b>3,788</b>	<b>1,460</b>	<b>730</b>	<b>95</b>	<b>57</b>	<b>3,700</b>	<b>1,252</b>	<b>541</b>	<b>57</b>	<b>34</b>
<b>Excess deaths</b>										
Pneumonia and flu	0	-14	-3	1	8	0	7	-3	1	3
Asthma	0	10	4	1	0	0	9	-1	-1	1
COPD	0	136	126	21	17	0	47	26	5	9
Other	0	-56	-28	-1	2	0	-56	-18	-2	3
<b>Total</b>	<b>0</b>	<b>76</b>	<b>99</b>	<b>21</b>	<b>28</b>	<b>0</b>	<b>8</b>	<b>5</b>	<b>3</b>	<b>15</b>

**Table 6.2: Average annual deaths and 'excess' deaths for persons aged 64 years and under, by type of respiratory disease, 2002-04**

Cause of death	Males					Females				
	MC	IR	OR	R	VR	MC	IR	OR	R	VR
<b>Deaths</b>										
Pneumonia and flu	78	28	18	4	8	49	20	11	5	5
Asthma	33	11	6	1	1	43	18	6	0	1
COPD	135	70	49	8	8	117	59	32	6	4
Other	98	37	20	6	6	66	22	10	3	4
<b>Total</b>	<b>344</b>	<b>147</b>	<b>94</b>	<b>18</b>	<b>22</b>	<b>275</b>	<b>119</b>	<b>60</b>	<b>15</b>	<b>14</b>
<b>Excess deaths</b>										
Pneumonia and flu	0	2	5	1	7	0	3	3	4	4
Asthma	0	1	1	0	0	0	4	0	-1	1
COPD	0	22	25	4	6	0	18	13	4	3
Other	0	4	4	3	5	0	0	0	2	3
<b>Total</b>	<b>0</b>	<b>29</b>	<b>34</b>	<b>9</b>	<b>18</b>	<b>0</b>	<b>25</b>	<b>15</b>	<b>9</b>	<b>11</b>

**Table 6.3: Average annual deaths and 'excess' deaths for non-Indigenous Australians, by type of respiratory disease, 2002-04**

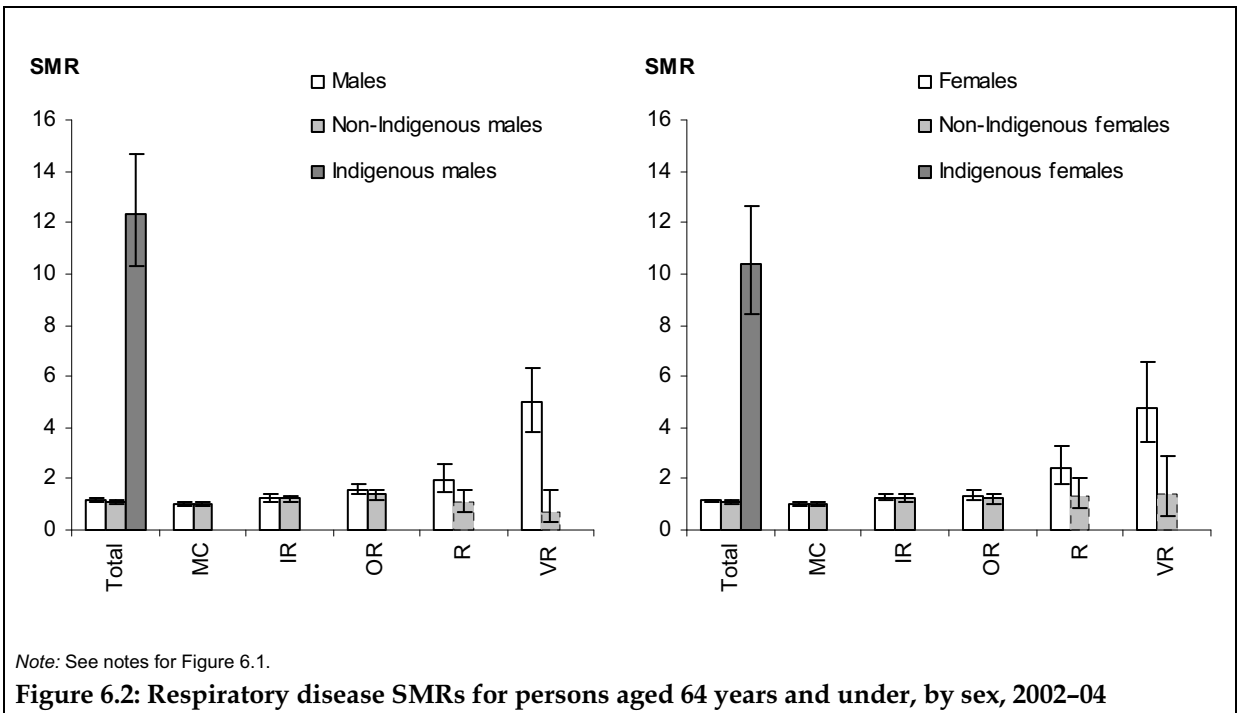
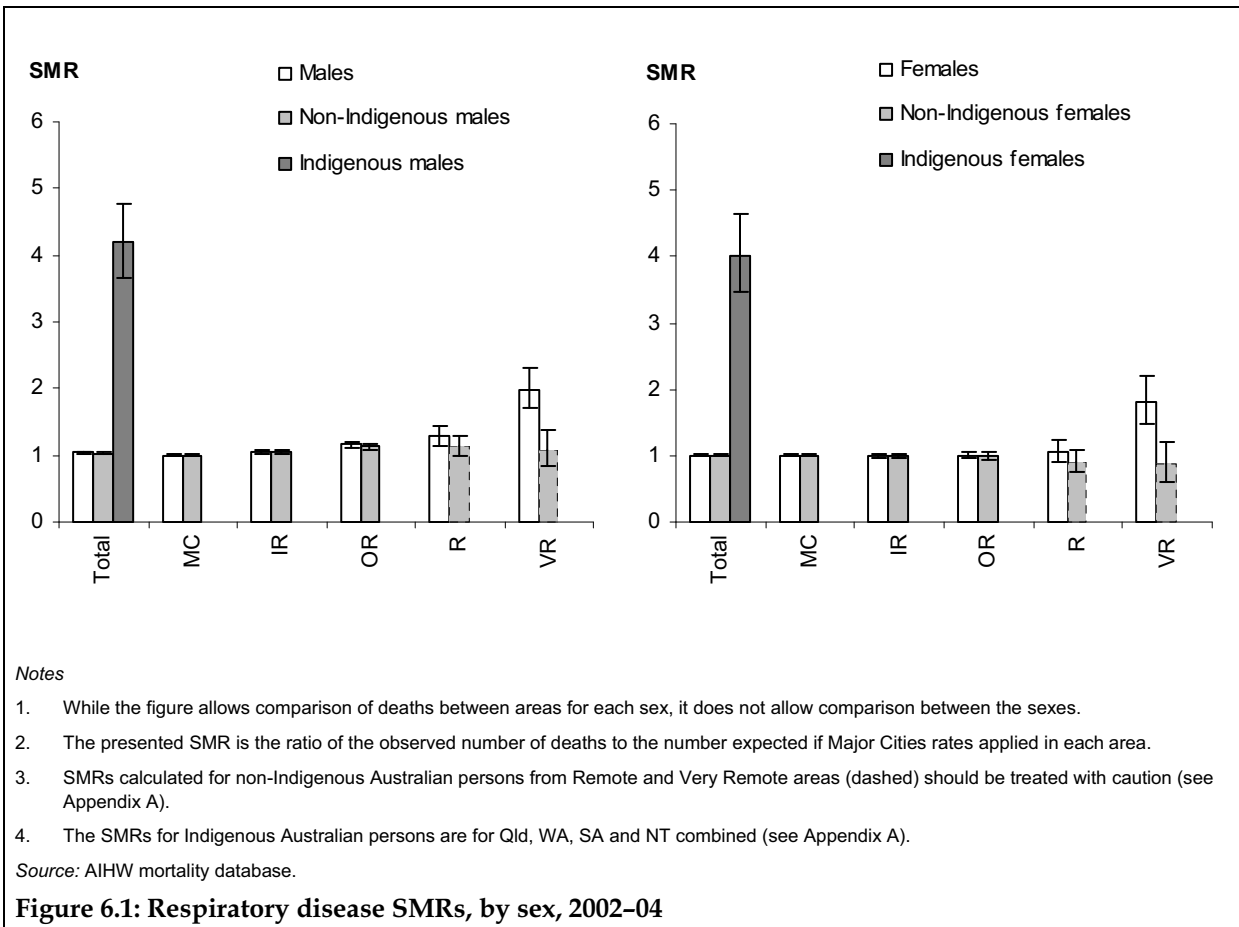
Cause of death	Males					Females				
	MC	IR	OR	R	VR	MC	IR	OR	R	VR
<b>Deaths</b>										
Pneumonia and flu	914	317	142	14	4	1,206	407	166	13	2
Asthma	68	33	14	2	0	133	51	18	1	1
COPD	1,769	783	409	48	17	1,368	507	221	23	6
Other	918	278	122	13	3	866	238	107	8	3
<b>Total</b>	<b>3,669</b>	<b>1,411</b>	<b>686</b>	<b>77</b>	<b>23</b>	<b>3,573</b>	<b>1,203</b>	<b>512</b>	<b>45</b>	<b>11</b>
<b>Excess deaths</b>										
Pneumonia and flu	0	-13	-6	-2	-2	0	8	-4	-3	-2
Asthma	0	9	3	0	0	0	7	-1	-1	0
COPD	0	132	113	15	6	0	41	21	3	1
Other	0	-56	-29	-4	-3	0	-52	-17	-4	0
<b>Total</b>	<b>0</b>	<b>72</b>	<b>80</b>	<b>9</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>-1</b>	<b>-4</b>	<b>-2</b>

**Table 6.4: Average annual deaths and 'excess' deaths for non-Indigenous Australians aged 64 years and under, by type of respiratory disease, 2002-04**

Cause of death	Males					Females				
	MC	IR	OR	R	VR	MC	IR	OR	R	VR
<b>Deaths</b>										
Pneumonia and flu	70	26	14	1	0	45	18	8	2	0
Asthma	31	11	5	1	0	41	16	6	0	0
COPD	128	64	40	5	2	110	55	28	4	1
Other	93	34	17	2	0	61	20	8	1	1
<b>Total</b>	<b>323</b>	<b>135</b>	<b>76</b>	<b>9</b>	<b>2</b>	<b>257</b>	<b>110</b>	<b>50</b>	<b>7</b>	<b>2</b>
<b>Excess deaths</b>										
Pneumonia and flu	0	2	2	-1	-1	0	4	1	1	0
Asthma	0	1	0	0	0	0	3	0	-1	0
COPD	0	19	17	2	1	0	17	10	2	1
Other	0	2	2	0	-1	0	0	-2	0	0
<b>Total</b>	<b>0</b>	<b>25</b>	<b>21</b>	<b>1</b>	<b>-1</b>	<b>0</b>	<b>23</b>	<b>9</b>	<b>2</b>	<b>1</b>

**Table 6.5: Average annual deaths and 'excess' deaths of Indigenous Australians in Qld, WA, SA and NT, by type of respiratory disease, 2002-04**

Cause of death	Males		Females	
	Total population	0-64 years	Total population	0-64 years
<b>Deaths</b>				
Pneumonia and flu	24	16	20	13
Asthma	2	2	4	3
COPD	29	12	25	9
Other	19	13	10	7
<b>Total</b>	<b>74</b>	<b>44</b>	<b>60</b>	<b>32</b>
<b>Excess deaths</b>				
Pneumonia and flu	19	15	16	13
Asthma	2	2	4	3
COPD	21	11	20	8
Other	14	12	7	6
<b>Total</b>	<b>56</b>	<b>40</b>	<b>45</b>	<b>29</b>



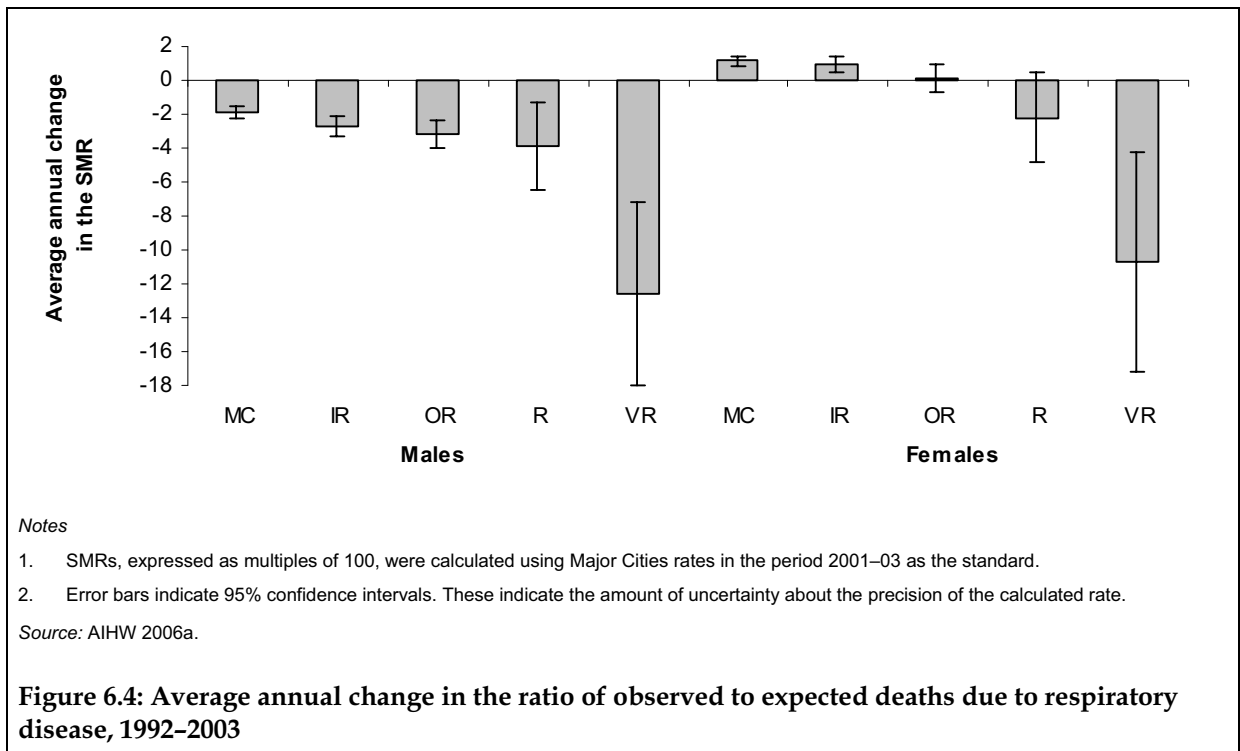
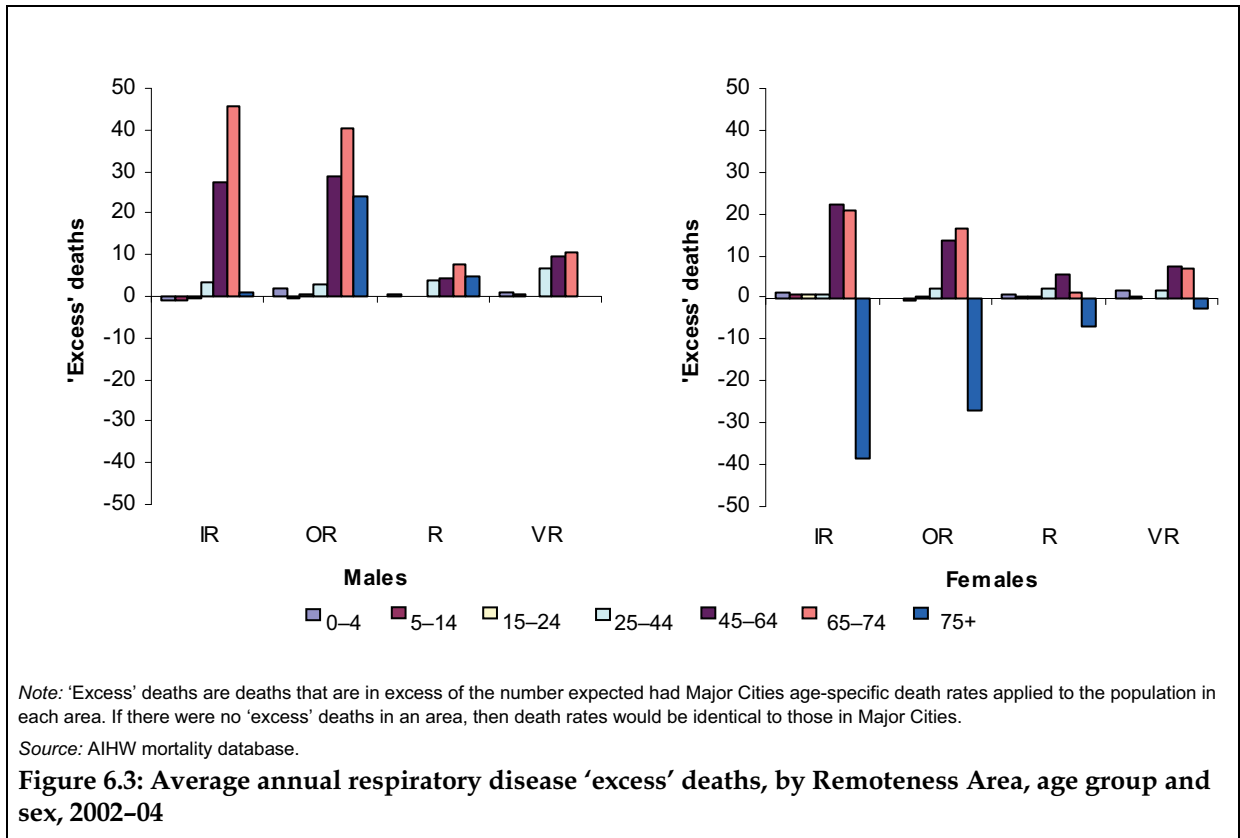


Table 6.6: SMRs, average annual deaths and 'excess' deaths due to respiratory disease, 2002-04 and 1997-99

	Males						Females						Persons					
	MC	IR	OR	R	VR		MC	IR	OR	R	VR		MC	IR	OR	R	VR	
	Rate					Rate	Rate					Rate	Rate					Rate
<b>2002-04</b>																		
0-4	4	0.82	1.75	1.98	<b>*4.33</b>	2	1.34	0.97	2.81	2.81	<b>*10.18</b>	3	1.00	1.47	2.27	2.27	<b>*6.38</b>	
5-14	1	0.57	0.35	1.94	3.56	0	1.74	0.00	2.29	2.29	1.81	0	1.02	0.22	2.07	2.07	2.90	
15-24	1	0.89	1.50	0.26	2.52	0	1.53	1.28	3.98	3.98	0.00	1	1.10	1.43	1.40	1.40	1.72	
25-44	2	1.34	<b>*1.59</b>	<b>*5.05</b>	<b>*13.34</b>	2	1.09	1.49	<b>*4.05</b>	<b>*4.05</b>	<b>*5.08</b>	2	1.22	<b>*1.54</b>	<b>*4.62</b>	<b>*4.62</b>	<b>*9.81</b>	
45-64	18	<b>*1.28</b>	<b>*1.58</b>	<b>*1.60</b>	<b>*3.83</b>	15	<b>*1.28</b>	<b>*1.37</b>	<b>*2.17</b>	<b>*2.17</b>	<b>*4.50</b>	16	<b>*1.28</b>	<b>*1.49</b>	<b>*1.83</b>	<b>*1.83</b>	<b>*4.09</b>	
65-74	162	<b>*1.18</b>	<b>*1.33</b>	<b>*1.51</b>	<b>*2.80</b>	106	<b>*1.12</b>	<b>*1.21</b>	1.16	1.16	<b>*3.18</b>	133	<b>*1.15</b>	<b>*1.28</b>	<b>*1.39</b>	<b>*1.39</b>	<b>*2.93</b>	
75+	908	1.00	1.05	1.09	1.01	617	<b>*0.96</b>	<b>*0.94</b>	0.82	0.82	0.81	730	0.98	1.00	0.97	0.97	0.93	
Total	58	<b>*1.05</b>	<b>*1.16</b>	<b>*1.29</b>	<b>*1.98</b>	55	1.01	1.01	1.06	1.06	<b>*1.80</b>	57	<b>*1.03</b>	<b>*1.09</b>	<b>*1.19</b>	<b>*1.19</b>	<b>*1.91</b>	
Total<64	6	<b>*1.24</b>	<b>*1.57</b>	<b>*1.96</b>	<b>*4.96</b>	5	<b>*1.27</b>	<b>*1.35</b>	<b>*2.45</b>	<b>*2.45</b>	<b>*4.80</b>	5	<b>*1.26</b>	<b>*1.47</b>	<b>*2.16</b>	<b>*2.16</b>	<b>*4.90</b>	
<b>1997-99</b>																		
Total	54	<b>*1.08</b>	<b>*1.24</b>	<b>*1.30</b>	<b>*2.14</b>	47	0.99	<b>*1.07</b>	<b>*1.37</b>	<b>*1.37</b>	<b>*2.06</b>	50	<b>*1.04</b>	<b>*1.16</b>	<b>*1.33</b>	<b>*1.33</b>	<b>*2.11</b>	
Total <65	6	<b>*1.23</b>	<b>*1.72</b>	<b>*2.09</b>	<b>*5.57</b>	5	<b>*1.14</b>	<b>*1.39</b>	<b>*2.52</b>	<b>*2.52</b>	<b>*5.25</b>	6	<b>*1.19</b>	<b>*1.58</b>	<b>*2.27</b>	<b>*2.27</b>	<b>*5.44</b>	
Total†	<b>*1.03</b>	<b>*1.12</b>	<b>*1.29</b>	<b>*1.36</b>	<b>*2.22</b>	<b>*0.92</b>	<b>*0.91</b>	0.99	<b>*1.28</b>	<b>*1.28</b>	<b>*1.96</b>	<b>*0.98</b>	1.02	<b>*1.15</b>	<b>*1.32</b>	<b>*1.32</b>	<b>*2.12</b>	
Total <65†	<b>*1.08</b>	<b>*1.34</b>	<b>*1.88</b>	<b>*2.26</b>	<b>*6.00</b>	<b>*1.12</b>	<b>*1.27</b>	<b>*1.56</b>	<b>*2.85</b>	<b>*2.85</b>	<b>*6.11</b>	<b>*1.10</b>	<b>*1.31</b>	<b>*1.74</b>	<b>*2.49</b>	<b>*2.49</b>	<b>*6.04</b>	

(continued)

**Table 6.6 (continued): SMRs, average annual deaths and 'excess' deaths due to respiratory disease, 2002-04 and 1997-99**

	Males						Females						Persons					
	MC	IR	OR	R	VR		MC	IR	OR	R	VR		MC	IR	OR	R	VR	
<b>Average annual number of excess deaths</b>																		
<b>2002-04</b>																		
0-4	0	-1	2	1	1	1	0	1	0	0	1	2	0	0	2	1	3	
5-14	0	-1	-1	0	0	0	0	1	-1	0	0	0	0	0	-1	0	0	
15-24	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	
25-44	0	3	3	4	7	0	0	1	2	2	2	2	0	4	5	6	8	
45-64	0	28	29	4	10	0	0	22	14	6	7	7	0	50	43	10	17	
65-74	0	46	41	8	10	0	0	21	16	1	7	7	0	67	57	9	17	
75+	0	1	24	5	0	0	0	-39	-27	-7	-2	-2	0	-38	-3	-2	-2	
Excess total	0	76	99	21	28	0	0	8	5	3	15	15	0	83	103	24	43	
Deaths total	3,788	1,460	730	95	57	3,700	1,252	541	57	57	34	34	7,488	2,712	1,271	153	91	
Excess <65	0	29	34	9	18	0	0	25	15	9	11	11	0	54	49	18	29	
Deaths <65	344	147	94	18	22	275	119	60	15	15	14	14	618	265	153	33	36	
<b>1997-99</b>																		
Excess total	0	98	134	20	29	0	-12	28	16	16	16	16	0	86	161	36	45	
Excess total†	109	140	155	22	30	-248	-90	-6	13	13	15	15	-139	50	149	35	45	
Deaths total	3,303	1,275	691	85	55	2,942	942	453	60	60	31	31	6,245	2,217	1,144	145	86	
Excess <65	0	25	43	10	20	0	12	18	10	10	12	12	0	37	60	20	32	
Excess <65†	25	34	48	11	20	30	22	22	10	10	12	12	56	56	70	21	32	
Deaths <65	330	135	102	19	24	275	102	62	16	16	15	15	605	237	164	35	39	

**Notes**

- The first half of the table reports death rates (as SMRs) for the period 2002-04. The first two rows (shaded) in this section use Major Cities age-and sex-specific rates in 1997-99 as the standard and compare death rates in each of the areas with those in Major Cities in the same year (1997-99). The second two (unshaded) rows (marked with a †) use Major Cities age-and sex-specific rates in 2002-04 as the standard and compare death rates in each of the areas (including Major Cities) in 1997-99 with death rates in Major Cities in 2002-04.
- The second half of the table describes the actual number of deaths and 'excess deaths' that occurred in each population. Shaded rows 1 and 4 have used 1997-99 Major Cities rates of death as the basis for calculating the number of excess deaths. Unshaded rows 2 and 5 (marked with a †) have used 2002-04 Major Cities rates of death as the basis for calculating the number of excess deaths in 1997-99.
- For further explanation, refer to section 2.3.

Table 6.7: SMRs, average annual deaths and 'excess' deaths due to respiratory disease, for Indigenous Australians and non-Indigenous Australians, 2002-04 and 1997-99

	Males						Females						Persons						
	Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			
	MC	IR	OR	R	VR	Rate	MC	IR	OR	R	VR	Rate	MC	IR	OR	R	VR	Rate	
<b>2002-04</b>																			
0-4	3	0.73	1.60	0.57	0.00	<b>*7.96</b>	2	1.05	1.12	0.02	0.00	<b>*7.89</b>	3	0.85	1.42	0.37	0.00	<b>*7.93</b>	
5-14	1	0.69	0.46	2.94	<b>*0.55</b>	<b>*5.53</b>	0	1.51	0.00	3.54	5.45	5.34	0	1.00	0.29	3.17	2.38	<b>*5.48</b>	
15-24	1	0.86	1.80	0.35	0.00	<b>*8.29</b>	1	1.56	1.37	0.00	0.00	3.41	1	1.11	1.65	0.23	0.00	<b>*6.11</b>	
25-44	2	1.24	1.20	1.55	0.32	<b>*32.69</b>	1	1.16	1.09	0.91	0.04	<b>*15.47</b>	2	1.20	1.15	1.28	0.21	<b>*23.10</b>	
45-64	17	<b>*1.26</b>	<b>*1.39</b>	1.02	0.84	<b>*10.43</b>	14	<b>*1.27</b>	<b>*1.26</b>	1.45	1.67	<b>*9.97</b>	16	<b>*1.27</b>	<b>*1.34</b>	1.19	1.13	<b>*10.21</b>	
65-74	156	<b>*1.18</b>	<b>*1.31</b>	1.30	<b>*1.77</b>	<b>*4.72</b>	102	<b>*1.11</b>	<b>*1.17</b>	1.05	1.65	<b>*5.32</b>	128	<b>*1.15</b>	<b>*1.26</b>	1.21	<b>*1.73</b>	<b>*4.99</b>	
75+	886	1.00	1.05	1.09	0.95	1.34	599	<b>*0.96</b>	<b>*0.94</b>	0.82	<b>*0.59</b>	<b>*1.44</b>	711	0.98	1.00	0.97	0.81	<b>*1.38</b>	
Total	57	<b>*1.05</b>	<b>*1.13</b>	1.13	1.09	<b>*4.19</b>	54	1.00	1.00	0.91	0.86	<b>*4.02</b>	56	<b>*1.03</b>	<b>*1.07</b>	1.04	1.00	<b>*4.11</b>	
Total <65	6	<b>*1.22</b>	<b>*1.38</b>	1.07	0.74	<b>*12.36</b>	5	<b>*1.26</b>	<b>*1.23</b>	1.34	1.42	<b>*10.37</b>	5	<b>*1.24</b>	<b>*1.31</b>	1.18	0.98	<b>*11.43</b>	
<b>1997-99</b>																			
Total	53	<b>*1.09</b>	<b>*1.22</b>	1.14	<b>*1.36</b>	<b>*4.35</b>	46	1.00	1.05	<b>*1.22</b>	0.96	<b>*4.62</b>	50	<b>*1.05</b>	<b>*1.15</b>	<b>*1.17</b>	1.21	<b>*4.46</b>	
Total <65	6	<b>*1.22</b>	<b>*1.52</b>	1.36	<b>*2.08</b>	<b>*12.21</b>	5	<b>*1.13</b>	<b>*1.24</b>	<b>*1.82</b>	1.66	<b>*10.86</b>	5	<b>*1.18</b>	<b>*1.40</b>	<b>*1.54</b>	<b>*1.93</b>	<b>*11.58</b>	
Total†	<b>*1.07</b>	<b>*1.18</b>	<b>*1.32</b>	<b>*1.24</b>	<b>*1.47</b>	<i>n.p.</i>	<b>*0.93</b>	<b>*0.91</b>	0.96	1.13	0.89	<i>n.p.</i>	1.00	<b>*1.05</b>	<b>*1.15</b>	<b>*1.19</b>	<b>*1.24</b>	<i>n.p.</i>	
Total <65†	<b>*1.13</b>	<b>*1.39</b>	<b>*1.74</b>	<b>*1.52</b>	<b>*2.31</b>	<i>n.p.</i>	<b>*1.17</b>	<b>*1.32</b>	<b>*1.45</b>	<b>*2.15</b>	1.97	<i>n.p.</i>	<b>*1.15</b>	<b>*1.36</b>	<b>*1.61</b>	<b>*1.76</b>	<b>*2.19</b>	<i>n.p.</i>	

(continued)

**Table 6.7 (continued): SMRs, average annual deaths and 'excess' deaths due to respiratory disease, for Indigenous Australians and non-Indigenous Australians, 2002-04 and 1997-99**

	Males						Females						Persons						
	Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			
	MC	IR	OR	R	VR	Indigenous	MC	IR	OR	R	VR	Indigenous	MC	IR	OR	R	VR	Indigenous	
<b>Average annual number of excess deaths</b>																			
<b>2002-04</b>																			
0-4	0	-1	1	0	0	4	0	0	0	0	0	3	0	-1	1	0	0	0	7
5-14	0	0	0	0	0	1	0	0	0	0	0	0	0	0	-1	0	0	0	1
15-24	0	0	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	1
25-44	0	2	1	0	0	14	0	1	0	0	8	0	0	3	1	0	0	0	21
45-64	0	24	18	0	0	20	0	20	9	2	18	1	0	45	27	2	1	39	39
65-74	0	44	37	4	3	13	0	19	12	0	12	1	0	63	49	5	5	25	25
75+	0	3	23	4	-1	4	0	-38	-23	-6	4	-4	0	-35	0	-2	-4	8	8
Excess total	0	72	80	9	2	56	0	3	-1	-4	45	-2	0	75	79	5	0	101	101
Deaths total	3,669	1,411	686	77	23	74	3,573	1,203	512	45	60	11	7,242	2,613	1,198	122	34	134	134
Excess <65	0	25	21	1	-1	40	0	23	9	2	29	1	0	48	30	2	0	69	69
Deaths <65	323	135	76	9	2	44	257	110	50	7	32	2	579	244	125	16	5	76	76
<b>1997-99</b>																			
Excess total	0	105	119	8	7	53	0	-3	21	9	42	0	101	141	17	6	6	94	94
Excess total†	212	190	161	13	8	n.p.	-199	-91	-17	6	n.p.	-1	13	99	145	19	7	n.p.	n.p.
Deaths total	3,232	1,255	660	69	25	69	2,864	924	431	50	53	10	6,095	2,180	1,091	119	35	122	122
Excess <65	0	23	29	3	3	37	0	11	10	5	28	1	0	34	39	7	4	65	65
Excess <65†	36	36	36	4	4	n.p.	38	23	16	5	n.p.	1	74	60	52	9	5	n.p.	n.p.
Deaths <65	318	129	85	11	6	40	261	96	51	10	31	3	579	225	137	21	9	72	72

**Notes**

1. The first half of the table reports death rates (as SMRs) for the period 2002-04. The first two rows (shaded) in this section use Major Cities age-and sex-specific rates in 1997-99 as the standard and compare death rates in each of the areas with those in Major Cities in the same year (1997-99). The second two (unshaded) rows (marked with a †) use Major Cities age-and sex-specific rates in 2002-04 as the standard and compare death rates in each of the areas (including Major Cities) in 1997-99 with death rates in Major Cities in 2002-04.
2. The second half of the table describes the actual number of deaths and 'excess deaths' that occurred in each population. Shaded rows 1 and 4 have used 1997-99 Major Cities rates of death as the basis for calculating the number of excess deaths. Unshaded rows 2 and 5 (marked with a †) have used 2002-04 Major Cities rates of death as the basis for calculating the number of excess deaths in 1997-99.
3. For further explanation, refer to section 2.3.

## 6.1 Pneumonia and influenza

### Highlights

*Pneumonia and influenza were responsible for 3% of all deaths and about 2% of all excess deaths in remote areas. There were fewer deaths from this cause than expected in regional areas.*

*Death rates for Indigenous Australians were five times higher than the rates for non-Indigenous Australians in Major Cities.*

*SMRs in most areas were close to 1.0, but in Very Remote areas the SMR was 1.9. Death rates in the oldest age groups, particularly in remote areas, tended to be lower than in Major Cities. SMRs for the population younger than 65 years were 1.0, 1.4, 2.8 and 7.8 in the four areas.*

*For non-Indigenous Australians, SMRs were not significantly different from 1.0 in most areas (except Very Remote areas where the SMR was 0.6).*

*Since 1992, death rates increased in Major Cities and Inner Regional areas, showed little change in Outer Regional and Remote areas, and declined quite strongly in Very Remote areas.*

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).

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.

On average during the period, influenza and pneumonia were responsible for 3,344 deaths annually – this is 2.5% of all deaths. Half (44%) were male; 66% were in Major Cities, 32% in regional areas and 2% in remote areas.

Overall death rates due to influenza and pneumonia for Indigenous Australians were five times higher than the rates for non-Indigenous Australians in Major Cities. For Indigenous Australians younger than 65 years, death rates were 19 times those rates for similarly aged non-Indigenous Australians in Major Cities.

### **In regional areas:**

Death rates were not significantly different from those in Major Cities.

Death rates for 0–64 year olds in Inner Regional areas were not significantly different from those in Major Cities, but rates in Outer Regional areas were 1.4 times those in Major Cities.

The inter-regional pattern for non-Indigenous Australians was similar to that above.

Annually there are 750 and 327 deaths in Inner Regional and Outer Regional areas; about 45% were male.

Annually there were 7 and 6 fewer deaths in Inner Regional and Outer Regional areas than expected. It was mainly amongst the older (75+) males that there were fewer deaths than expected, while there tended to be slightly more deaths than expected in the younger age groups (as indicated by 13 more deaths than expected annually for people younger than 65 years in regional areas). Compared with the previous reporting period (1997–99), there were 214 more deaths of males and 221 more deaths of females annually in 2002–04.

The 12-year trend (AIHW 2006a) is for death rates to increase in Inner Regional areas and to remain relatively unchanged in Outer Regional areas.

#### **In remote areas:**

While death rates in Remote areas were not significantly different from those in Major Cities, death rates in Very Remote areas were 1.9 times those in Major Cities.

For 0–64 year olds death rates were 1.4 and 2.7 times those in Major Cities.

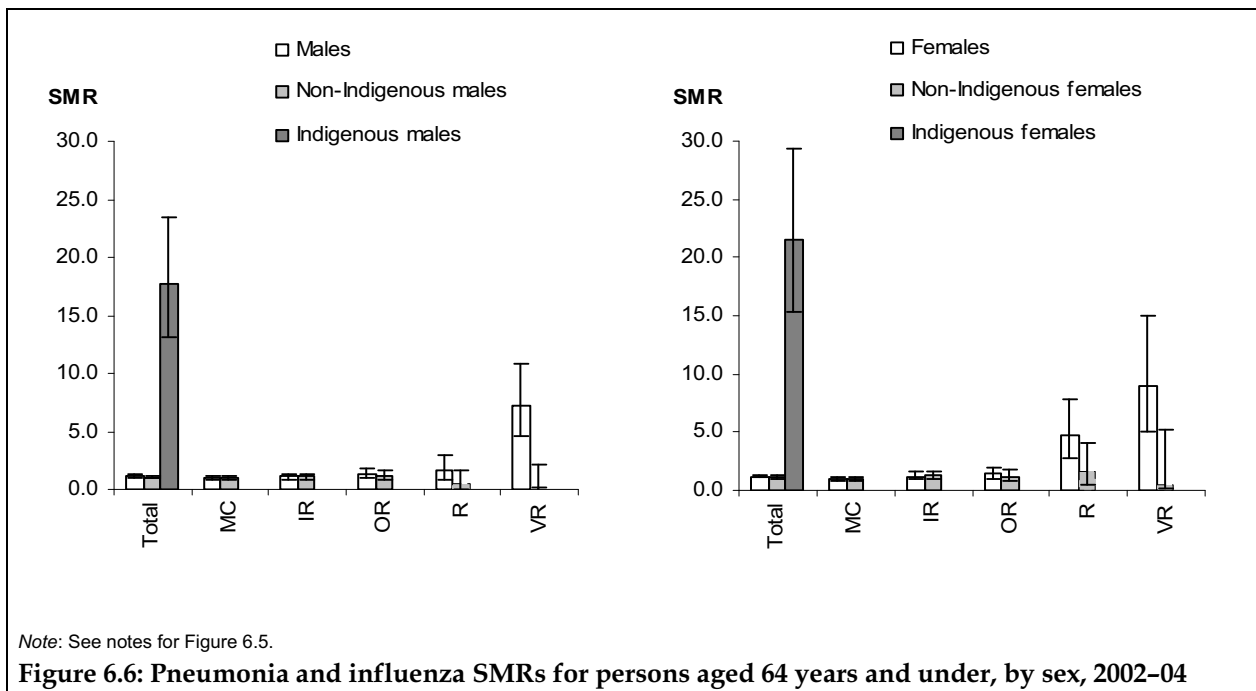
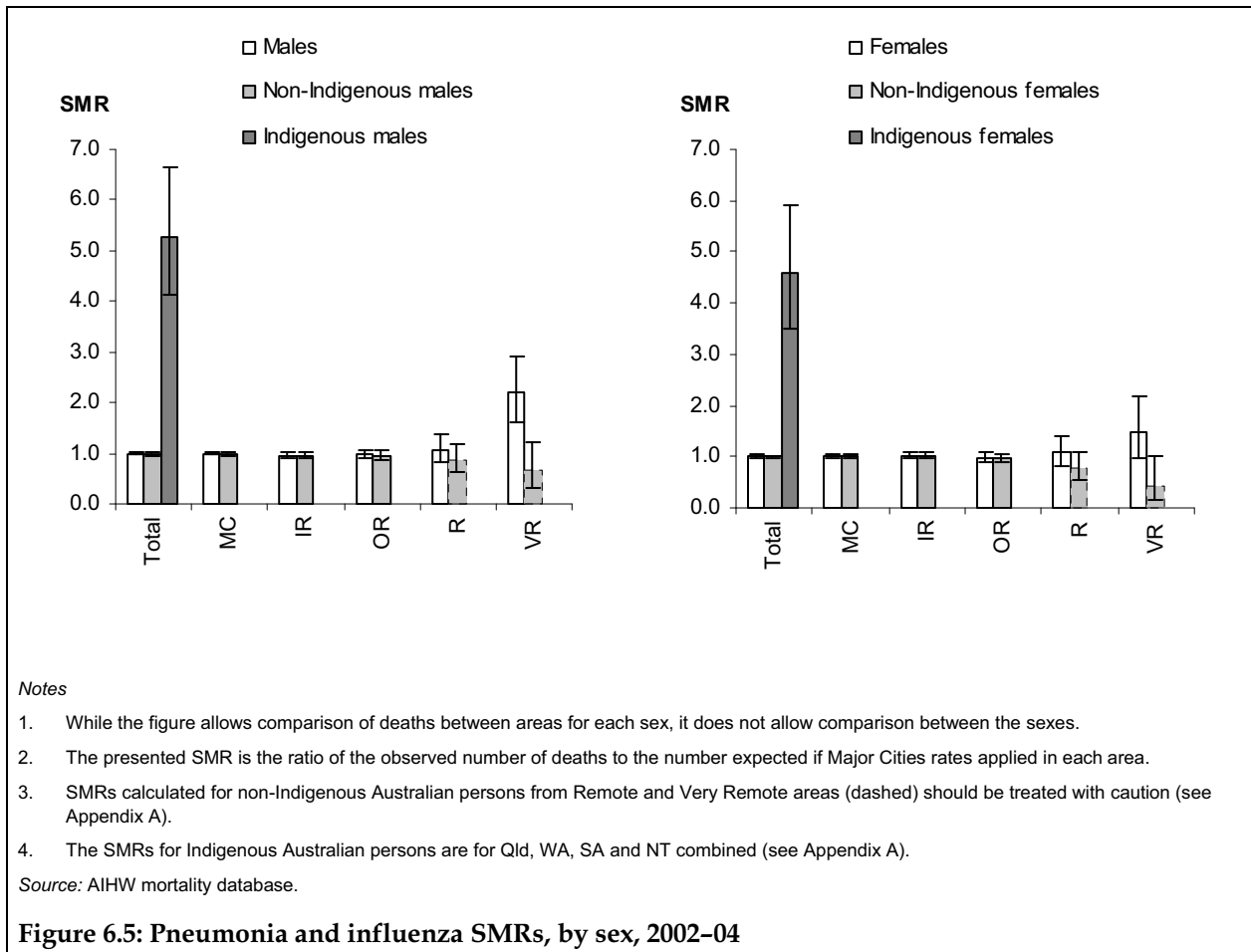
Death rates for non-Indigenous Australians in Remote areas were indistinguishable from those in Major Cities while rates for those in Very Remote areas were 0.6 times those in Major Cities. For those younger than 65 years, rates were indistinguishable from those in Major Cities.

Annually there are 38 and 24 deaths in Remote and Very Remote areas; about 56% were male.

Annually there were 2 and 11 'excess' deaths in Remote and Very Remote areas; this is 1% and 3% of all 'excess' deaths in Remote and Very Remote areas. There were fewer deaths than expected amongst those 75 years and older, with the bulk of the excess deaths amongst 25–64 year olds.

Compared with the previous reporting period (1997–99), there were 8 more deaths of males and 1 fewer deaths of females annually in 2002–04.

The 12-year trend (AIHW 2006a) is for death rates to decrease, especially in Very Remote areas where, compared to other areas, declines appear to have been substantial.



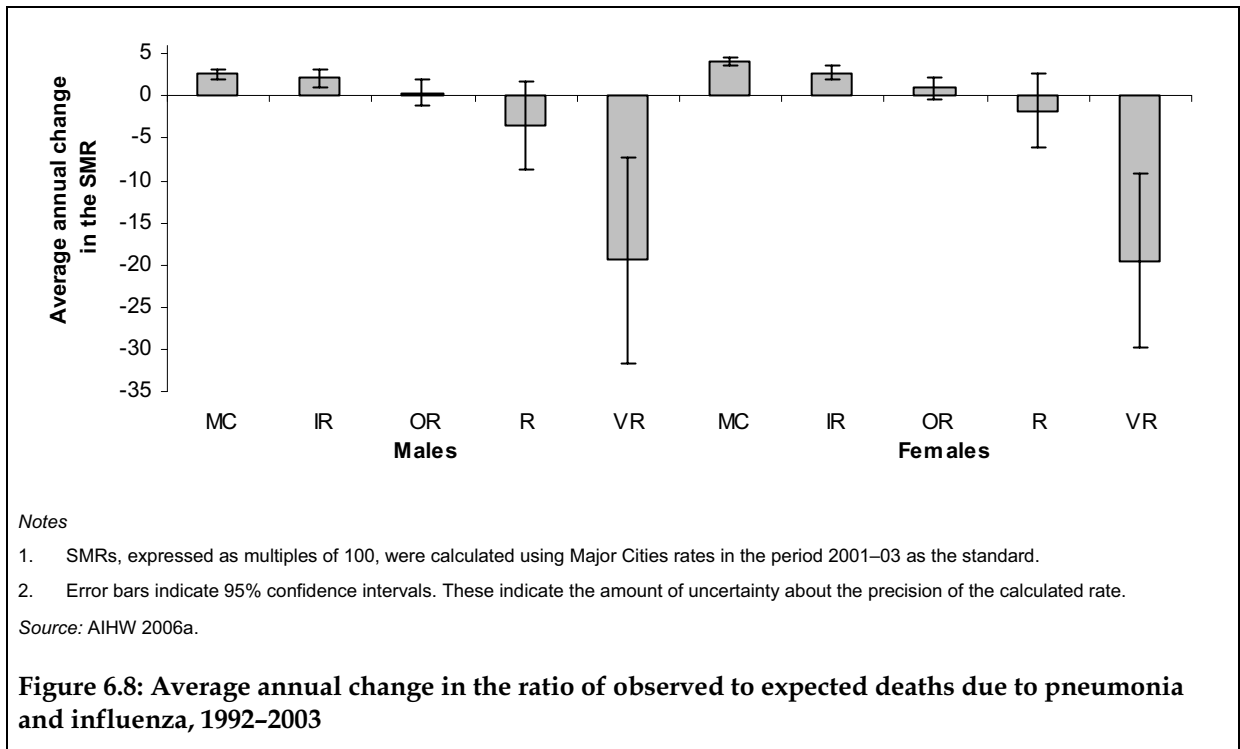
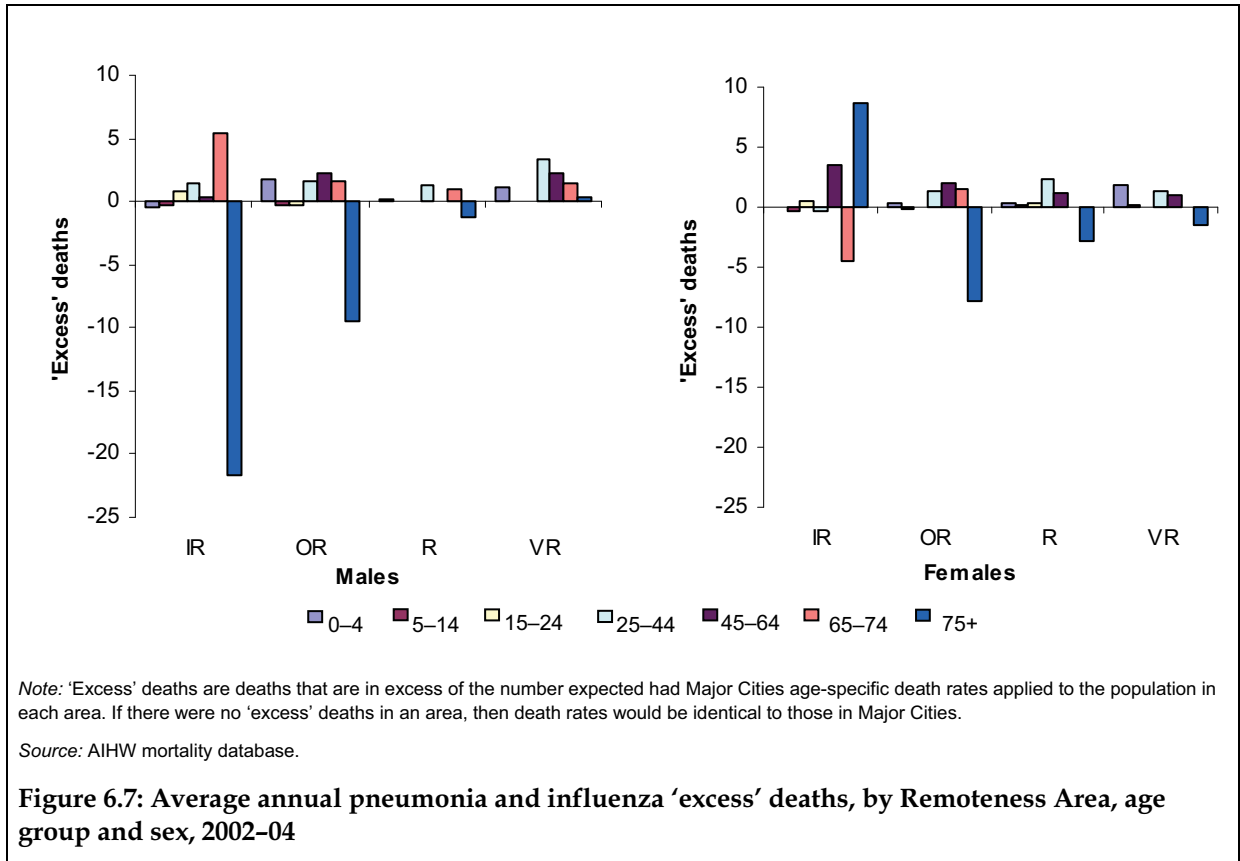


Table 6.8: SMRs, average annual deaths and 'excess' deaths due to pneumonia and influenza, 2002-04 and 1997-99

	Males						Females						Persons					
	MC	IR	OR	R	VR		MC	IR	OR	R	VR		MC	IR	OR	R	VR	
	Rate		Ratio			Rate	Rate		Ratio			Rate	Rate		Ratio			
<b>2002-04</b>																		
0-4	2	0.80	<b>*2.34</b>	1.56	8.68	1	0.95	1.64	4.21	<b>*26.08</b>	1	0.85	<b>*2.12</b>	2.39	<b>*14.21</b>			
5-14	0	0.58	0.00	0.00	0.00	0	0.00	0.00	7.12	5.38	0	0.36	0.00	2.70	2.06			
15-24	0	2.33	0.00	0.00	0.00	0	3.96	0.00	27.51	0.00	0	2.71	0.00	5.47	0.00			
25-44	1	1.44	1.98	<b>*5.20</b>	<b>*20.98</b>	0	0.86	2.06	<b>*12.30</b>	<b>*13.76</b>	0	1.19	<b>*2.01</b>	<b>*8.00</b>	<b>*18.14</b>			
45-64	4	1.02	1.22	1.05	<b>*4.23</b>	2	1.29	1.36	2.43	<b>*4.21</b>	3	1.12	1.27	1.52	<b>*4.22</b>			
65-74	23	1.15	1.09	1.46	<b>*2.71</b>	15	0.81	1.14	0.95	0.87	19	1.01	1.11	1.28	2.07			
75+	254	<b>*0.92</b>	0.92	0.91	1.06	236	1.02	0.95	0.81	0.69	243	0.98	0.94	0.86	0.88			
Total	15	0.96	0.98	1.06	<b>*2.19</b>	19	1.02	0.98	1.07	1.47	17	0.99	0.98	1.07	<b>*1.87</b>			
Total <65	1	1.07	<b>*1.37</b>	1.66	<b>*7.25</b>	1	1.20	1.44	<b>*4.79</b>	<b>*9.03</b>	1	1.12	<b>*1.40</b>	<b>*2.74</b>	<b>*7.84</b>			
<b>1997-99</b>																		
Total	9	<b>*0.89</b>	1.05	<b>*1.49</b>	<b>*2.63</b>	13	0.99	1.06	<b>*1.53</b>	<b>*2.77</b>	10	0.95	1.06	<b>*1.51</b>	<b>*2.69</b>			
Total <65	1	1.06	<b>*1.59</b>	<b>*2.95</b>	<b>*9.34</b>	1	<b>*1.63</b>	<b>*1.64</b>	<b>*4.67</b>	<b>*13.71</b>	1	<b>*1.27</b>	<b>*1.61</b>	<b>*3.54</b>	<b>*10.85</b>			
Total†	<b>*0.72</b>	<b>*0.64</b>	<b>*0.76</b>	1.07	<b>*1.90</b>	<b>*0.76</b>	<b>*0.75</b>	<b>*0.80</b>	1.16	<b>*2.11</b>	<b>*0.74</b>	<b>*0.70</b>	<b>*0.78</b>	1.12	<b>*2.00</b>			
Total <65†	<b>*0.71</b>	<b>*0.75</b>	1.14	<b>*2.12</b>	<b>*6.88</b>	<b>*0.62</b>	0.99	1.01	<b>*3.03</b>	<b>*9.70</b>	<b>*0.67</b>	0.85	1.09	<b>*2.46</b>	<b>*7.88</b>			

(continued)

**Table 6.8 (continued): SMRs, average annual deaths and 'excess' deaths due to pneumonia and influenza, 2002-04 and 1997-99**

	Males					Females					Persons				
	MC	IR	OR	R	VR	MC	IR	OR	R	VR	MC	IR	OR	R	VR
<b>Average annual number of excess deaths</b>															
<b>2002-04</b>															
0-4	0	0	2	0	1	0	0	0	0	2	0	0	0	0	2
5-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-24	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0
25-44	0	1	2	1	3	0	0	1	2	1	0	1	3	4	5
45-64	0	0	2	0	2	0	4	2	1	1	0	4	4	1	3
65-74	0	5	2	1	1	0	-5	1	0	0	0	1	3	1	1
75+	0	-22	-9	-1	0	0	9	-8	-3	-2	0	-13	-17	-4	-1
Excess total	0	-14	-3	1	8	0	7	-3	1	3	0	-7	-6	2	11
Deaths total	951	329	153	19	16	1,247	421	174	19	9	2,198	750	327	38	24
Excess <65	0	2	5	1	7	0	3	3	4	4	0	5	8	6	11
Deaths <65	78	28	18	4	8	49	20	11	5	5	127	48	30	9	13
<b>1997-99</b>															
Excess total	0	-21	5	5	7	0	-2	6	6	7	0	-23	11	11	14
Excess total†	-213	-96	-31	1	5	-253	-83	-30	2	6	-465	-179	-60	4	11
Deaths total	547	172	96	16	11	805	254	120	18	11	1,352	426	216	33	22
Excess <65	0	1	5	3	6	0	6	3	3	4	0	6	8	5	10
Excess <65†	-19	-5	2	2	5	-17	0	0	2	4	-36	-5	2	4	10
Deaths <65	47	16	13	4	6	28	15	7	3	5	75	31	21	7	11

**Notes**

- The first half of the table reports death rates (as SMRs) for the period 2002-04. The first two rows (shaded) in this section use Major Cities age-and sex-specific rates in 1997-99 as the standard and compare death rates in each of the areas with those in Major Cities in the same year (1997-99). The second two (unshaded) rows (marked with a †) use Major Cities age-and sex-specific rates in 2002-04 as the standard and compare death rates in each of the areas (including Major Cities) in 1997-99 with death rates in Major Cities in 2002-04.
- The second half of the table describes the actual number of deaths and 'excess deaths' that occurred in each population. Shaded rows 1 and 4 have used 1997-99 Major Cities rates of death as the basis for calculating the number of excess deaths. Unshaded rows 2 and 5 (marked with a †) have used 2002-04 Major Cities rates of death as the basis for calculating the number of excess deaths in 1997-99.
- For further explanation, refer to section 2.3.

Table 6.9: SMRs, average annual deaths and 'excess' deaths due to pneumonia and influenza, for Indigenous Australians and non-Indigenous Australians, 2002-04 and 1997-99

	Males						Females						Persons					
	Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			Non-Indigenous			Indigenous		
	MC	IR	OR	R	VR	Rate	MC	IR	OR	R	VR	Rate	MC	IR	OR	R	VR	Rate
<b>2002-04</b>																		
0-4	1	0.74	2.29	0.32	0.00	<b>*14.77</b>	1	0.45	1.91	0.00	0.00	1	0.63	2.15	0.21	0.00	0.00	<b>*16.05</b>
5-14	0	0.98	0.00	0.00	0.00	11.27	0	0.00	0.00	13.19	19.18	0	0.59	0.00	5.36	8.00	0.00	11.27
15-24	0	2.08	0.00	0.00	0.00	8.82	0	4.03	0.00	0.00	0.00	0	2.59	0.00	0.00	0.00	0.00	<b>*14.78</b>
25-44	1	1.41	1.78	1.29	0.44	<b>*35.69</b>	0	1.01	1.27	3.33	0.15	0	1.25	1.58	2.05	0.34	0.00	<b>*36.11</b>
45-64	3	1.05	0.99	0.38	0.00	<b>*13.73</b>	2	1.33	1.12	1.20	0.14	3	1.16	1.04	0.66	0.04	0.00	<b>*14.52</b>
65-74	21	1.17	1.09	1.07	0.08	<b>*6.64</b>	14	0.80	1.11	0.74	0.13	18	1.02	1.10	0.95	0.09	0.00	<b>*5.59</b>
75+	247	<b>*0.92</b>	0.92	0.89	0.88	1.47	229	1.02	0.96	0.73	0.45	236	0.98	0.94	0.81	0.68	0.00	<b>*1.52</b>
Total	14	0.96	0.96	0.87	0.68	<b>*5.28</b>	18	1.02	0.97	0.79	<b>*0.43</b>	16	0.99	0.97	0.83	<b>*0.57</b>	0.00	<b>*4.94</b>
Total <65	1	1.10	1.16	0.50	0.07	<b>*17.74</b>	1	1.24	1.17	1.67	0.48	1	1.15	1.16	0.90	0.20	0.00	<b>*19.26</b>
<b>1997-99</b>																		
Total	9	<b>*0.89</b>	1.00	1.12	1.16	<b>*7.62</b>	13	1.00	1.06	1.34	1.03	11	0.95	1.03	1.24	1.10	0.00	<b>*6.74</b>
Total <65	1	1.08	1.17	0.86	1.55	<b>*24.49</b>	0	<b>*1.62</b>	1.29	1.10	3.65	1	<b>*1.28</b>	1.21	0.94	2.19	0.00	<b>*24.58</b>
Total†	<b>*0.73</b>	<b>*0.61</b>	<b>*0.69</b>	0.77	0.80	n.p.	<b>*0.78</b>	<b>*0.78</b>	<b>*0.82</b>	1.04	0.81	<b>*0.76</b>	<b>*0.70</b>	<b>*0.76</b>	0.91	0.80	0.00	n.p.
Total <65†	<b>*0.71</b>	<b>*0.69</b>	0.75	0.55	1.00	n.p.	<b>*0.68</b>	1.26	1.02	0.93	3.25	<b>*0.70</b>	0.88	0.83	0.66	1.54	0.00	n.p.

(continued)

**Table 6.9 (continued): SMRs, average annual deaths and 'excess' deaths due to pneumonia and influenza, for Indigenous Australians and non-Indigenous Australians, 2002-04 and 1997-99**

	Males						Females						Persons						
	Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			
	MC	IR	OR	R	VR	Indigenous	MC	IR	OR	R	VR	Indigenous	MC	IR	OR	R	VR	Indigenous	
<b>Average annual number of excess deaths</b>																			
<b>2002-04</b>																			
0-4	0	0	1	0	0	3	0	-1	0	0	0	3	0	0	2	0	0	0	6
5-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-24	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1
25-44	0	1	1	0	0	6	0	0	0	0	0	5	0	1	1	0	0	0	11
45-64	0	1	0	-1	0	6	0	4	1	0	0	5	0	5	1	-1	-1	10	10
65-74	0	6	2	0	-1	3	0	-5	1	0	0	1	0	1	3	0	0	-1	4
75+	0	-21	-10	-1	0	1	0	9	-7	-4	-2	2	0	-12	-16	-5	-2	3	3
Excess total	0	-13	-6	-2	-2	19	0	8	-4	-3	-2	16	0	-5	-10	-6	-4	35	35
Deaths total	914	317	142	14	4	24	1,206	407	166	13	2	20	2,120	723	308	27	5	44	44
Excess <65	0	2	2	-1	-1	15	0	4	1	1	0	13	0	6	3	0	0	-1	28
Deaths <65	70	26	14	1	0	16	45	18	8	2	0	13	115	44	22	2	0	30	30
<b>1997-99</b>																			
Excess total	0	-21	0	1	0	19	0	1	7	4	0	13	0	-20	6	5	1	32	32
Excess total†	-196	-106	-40	-3	-1	n.p.	-218	-71	-25	1	-1	n.p.	-414	-176	-65	-3	-2	n.p.	n.p.
Deaths total	536	167	88	11	4	21	787	251	117	14	3	16	1323	419	205	25	6	37	37
Excess <65	0	1	1	0	0	13	0	5	1	0	1	10	0	6	2	0	1	22	22
Excess <65†	-18	-7	-3	-1	0	n.p.	-12	3	0	0	0	n.p.	-30	-4	-3	-1	0	n.p.	n.p.
Deaths <65	44	15	9	1	1	13	26	13	5	1	1	10	70	29	14	2	1	23	23

**Notes**

- The first half of the table reports death rates (as SMRs) for the period 2002-04. The first two rows (shaded) in this section use Major Cities age-and sex-specific rates in 1997-99 as the standard and compare death rates in each of the areas with those in Major Cities in the same year (1997-99). The second two (unshaded) rows (marked with a †) use Major Cities age-and sex-specific rates in 2002-04 as the standard and compare death rates in each of the areas (including Major Cities) in 1997-99 with death rates in Major Cities in 2002-04.
- The second half of the table describes the actual number of deaths and 'excess deaths' that occurred in each population. Shaded rows 1 and 4 have used 1997-99 Major Cities rates of death as the basis for calculating the number of excess deaths. Unshaded rows 2 and 5 (marked with a †) have used 2002-04 Major Cities rates of death as the basis for calculating the number of excess deaths in 1997-99.
- For further explanation, refer to section 2.3.

## 6.2 Asthma

### Highlights

*Asthma was responsible for 0.3% of all deaths and less than 1% of all excess deaths in regional and remote areas.*

*Death rates for Indigenous Australians were 11 times higher than the rates for non-Indigenous Australians in Major Cities.*

*The SMR in Inner Regional areas was 1.3. In the other areas, SMRs were not significantly different from 1.00 (although there was a tendency for SMRs for males to be 1.3–1.4 in Outer Regional and remote areas).*

*For non-Indigenous Australians, SMRs were 1.3 in Inner Regional areas and not significantly different from 1.0 in the other areas.*

*Since 1992, death rates decreased in all areas (but the decrease in Very Remote areas was not statistically significant).*

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 2002). Asthma symptoms can vary from mild and intermittent to chronic and life-threatening.

Asthma attacks can be brought on after exposure to triggers such as environmental irritants (for example, tobacco smoke and allergens such as fine organic dusts), viral infections and exercise. Predisposing factors include family history, age and overweight. Prevention involves drug therapy and avoiding triggers (AIHW 2002).

On average during the period, asthma was responsible for 341 deaths annually – this is 0.3% of all deaths. Two-fifths (37%) were male; 62% were in Major Cities, 36% in regional areas and 2% in remote areas.

Overall asthma death rates for Indigenous Australians were 11 times higher than the rates for non-Indigenous Australians in Major Cities.

### **In regional areas:**

Death rates in Inner Regional areas were 25% higher than in Major Cities, but rates in Outer Regional areas were not significantly different from those in Major Cities.

For 0–64 year olds, death rates were not significantly different from those in Major Cities.

The inter-regional pattern for non-Indigenous Australians was similar to that above.

Annually there were 89 and 35 deaths in Inner Regional and Outer Regional areas; about 40% were male.

Annually there were 19 and 3 'excess' deaths in Inner Regional and Outer Regional areas; this is 1% and about 0.2% of all 'excess' deaths in Inner Regional and Outer Regional areas. About two-thirds (64%) of the 'excess' deaths were male. The bulk of the 'excess' deaths were from 45 years, but particularly concentrated in those aged 65–74 and 75 years and older.

Compared with the previous reporting period (1997–99), there were 17 fewer deaths of males and 19 fewer deaths of females annually in 2002–04.

The 12-year trend (AIHW 2006a) is for asthma death rates to decline. For males there is a suggestion that rates are declining faster than in Major Cities, while for females the rate of decline is not significantly different from that in Major Cities.

**In remote areas:**

Death rates in remote areas were not significantly different from those in Major Cities.

For 0–64 year olds, death rates in remote areas were not significantly different from those in Major Cities.

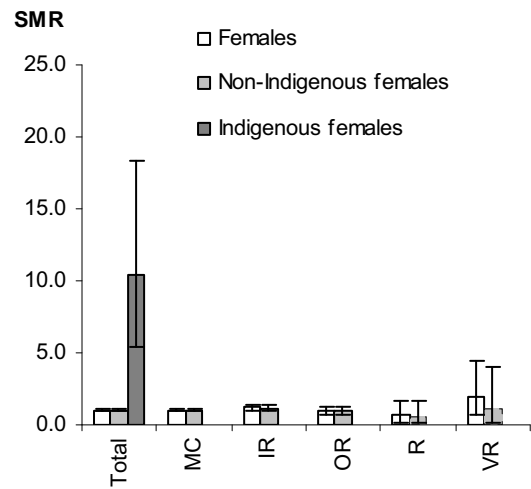
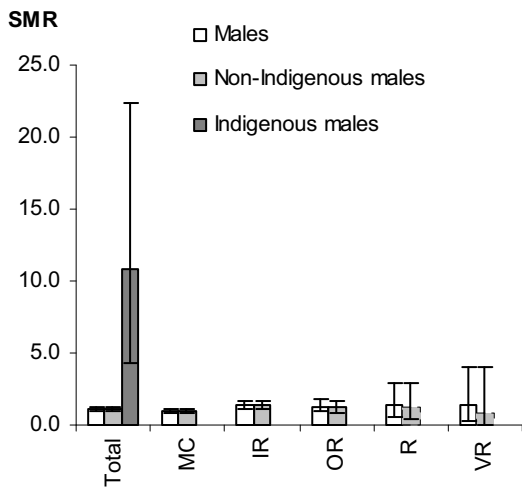
Death rates for remote area non-Indigenous Australians were not significantly different from those in Major Cities.

Annually there are 4 and 3 deaths in Remote and Very Remote areas; about 43% were male.

Annually there were 0 and 1 ‘excess’ deaths in Remote and Very Remote areas; this is 0% and about 0.2% of all ‘excess’ deaths in Remote and Very Remote areas.

Compared with the previous reporting period (1997–99), there were 3 fewer deaths of males and 1 fewer deaths of females annually in 2002–04.

The 12-year trend (AIHW 2006a) is for decreasing death rates in remote areas. Rates for Remote area males declined faster than in Major Cities.

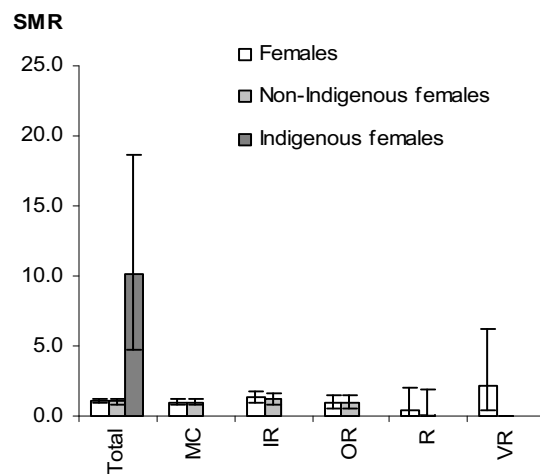
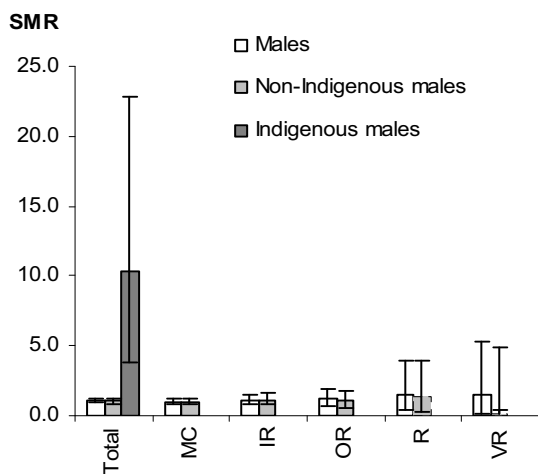


**Notes**

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 Australian persons from Remote and Very Remote areas (dashed) should be treated with caution (see Appendix A).
4. The SMRs for Indigenous Australian persons are for Qld, WA, SA and NT combined (see Appendix A).

Source: AIHW mortality database.

**Figure 6.9: Asthma SMRs, by sex, 2002-04**



Note: See notes for Figure 6.9.

**Figure 6.10: Asthma SMRs for persons aged 64 years and under, by sex, 2002-04**

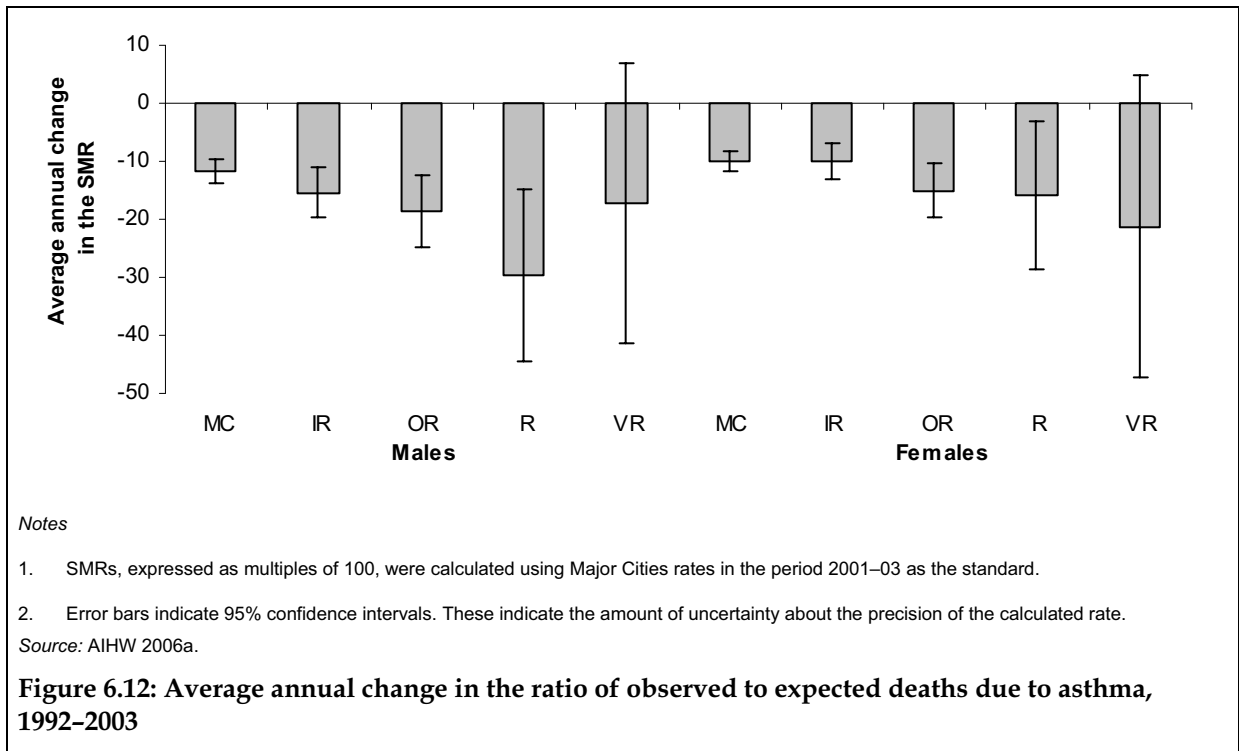
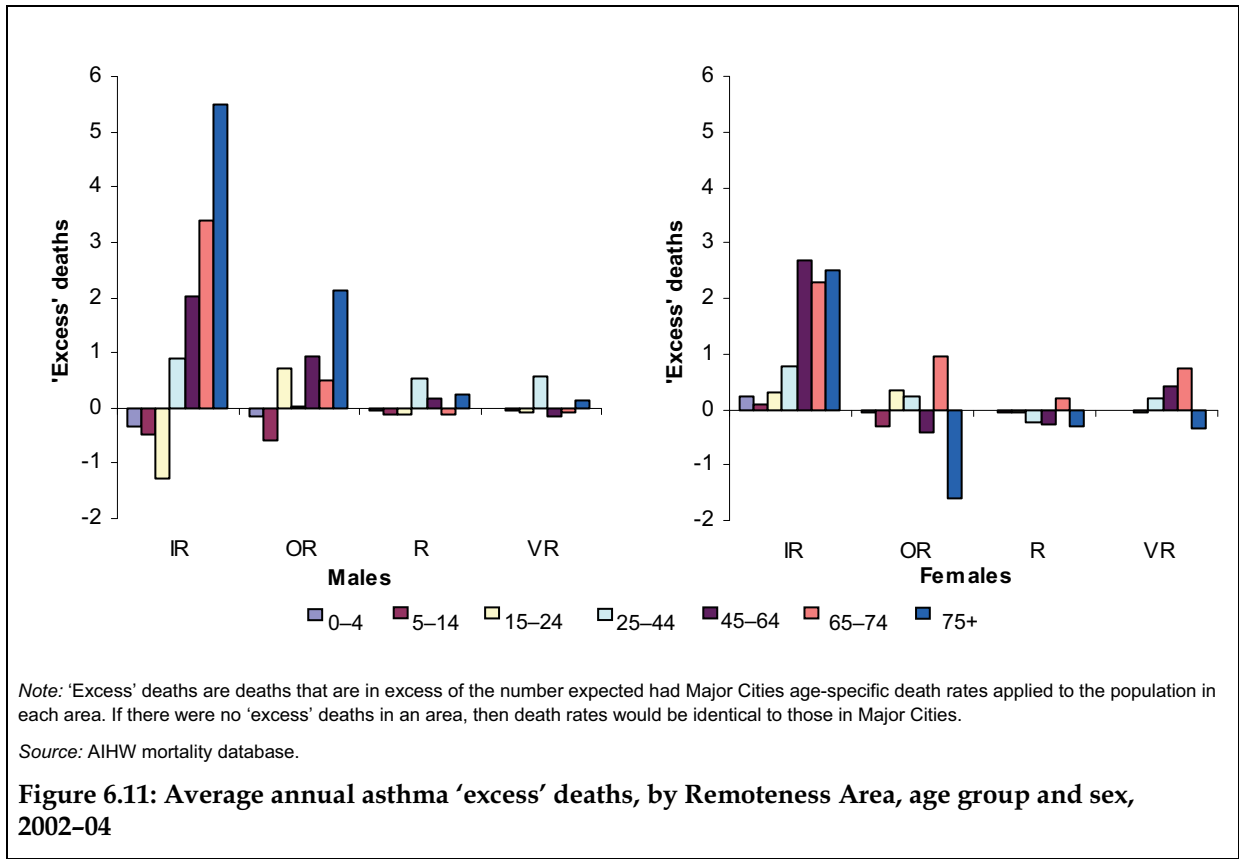


Table 6.10: SMIRs, average annual deaths and 'excess' deaths due to asthma, 2002-04 and 1997-99

	Males						Females						Persons					
	MC	IR	OR	R	VR		MC	IR	OR	R	VR		MC	IR	OR	R	VR	
	Rate		Ratio			Rate	Rate		Ratio			Rate	Rate		Ratio			
<b>2002-04</b>																		
0-4	0	0.00	0.00	0.00	0.00	0	3.12	0.00	0.00	0.00	0.00	0	0.78	0.00	0.00	0.00	0.00	0.00
5-14	0	0.60	0.00	0.00	0.00	0	1.15	0.00	0.00	0.00	0.00	0	0.79	0.00	0.00	0.00	0.00	0.00
15-24	0	0.03	2.14	0.00	0.00	0	1.42	2.00	0.00	0.00	0.00	0	0.52	2.09	0.00	0.00	0.00	0.00
25-44	0	1.35	1.01	3.01	4.72	0	1.27	1.17	0.03	2.50	2.50	0	1.31	1.09	1.58	1.58	3.69	3.69
45-64	1	1.41	1.37	1.46	0.03	2	1.28	0.90	0.53	2.48	2.48	1	<b>*1.33</b>	1.07	0.89	0.89	1.50	1.50
65-74	2	<b>*1.90</b>	1.28	0.52	0.00	4	1.38	1.36	1.66	7.73	7.73	3	<b>*1.58</b>	1.33	1.16	1.16	4.35	4.35
75+	9	<b>*1.53</b>	1.46	1.45	1.77	17	1.10	0.85	0.70	0.00	0.00	14	<b>*1.22</b>	1.03	0.94	0.94	0.64	0.64
Total	1	<b>*1.40</b>	1.30	1.36	1.41	2	<b>*1.19</b>	0.96	0.68	1.99	1.99	2	<b>*1.26</b>	1.08	0.96	0.96	1.73	1.73
Total <65	1	1.08	1.17	1.54	1.52	1	1.30	0.97	0.35	2.10	2.10	1	1.21	1.06	0.91	0.91	1.81	1.81
<b>1997-99</b>																		
Total	2	1.08	<b>*1.31</b>	<b>*2.14</b>	1.17	3	1.06	1.18	1.03	1.67	1.67	2	1.07	<b>*1.23</b>	1.52	1.52	1.44	1.44
Total <65	1	1.31	<b>*1.84</b>	2.26	1.58	1	1.10	1.31	1.39	2.41	2.41	1	1.19	<b>*1.54</b>	1.79	1.79	2.03	2.03
Total†	<b>*1.69</b>	<b>*1.87</b>	<b>*2.23</b>	<b>*3.53</b>	1.83	<b>*1.49</b>	<b>*1.58</b>	<b>*1.76</b>	1.54	2.59	2.59	<b>*1.56</b>	<b>*1.68</b>	<b>*1.94</b>	<b>*2.37</b>	<b>*2.37</b>	<b>*2.24</b>	<b>*2.24</b>
Total <65†	<b>*1.36</b>	<b>*1.80</b>	<b>*2.53</b>	<b>*3.07</b>	2.14	<b>*1.48</b>	<b>*1.59</b>	<b>*1.91</b>	2.07	<b>*3.81</b>	<b>*3.81</b>	<b>*1.43</b>	<b>*1.68</b>	<b>*2.18</b>	<b>*2.55</b>	<b>*2.55</b>	<b>*2.97</b>	<b>*2.97</b>

(continued)

**Table 6.10 (continued): SMRs, average annual deaths and 'excess' deaths due to asthma, 2002-04 and 1997-99**

	Males						Females						Persons								
	MC	IR	OR	R	VR	MC	IR	OR	R	VR	MC	IR	OR	R	VR	MC	IR	OR	R	VR	
<b>Average annual number of excess deaths</b>																					
<b>2002-04</b>																					
0-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-14	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0
15-24	0	-1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	1	0	0	0
25-44	0	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	1
45-64	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	5	1	0	0	0
65-74	0	3	1	0	0	0	2	1	0	0	0	1	0	0	0	0	6	1	0	0	1
75+	0	5	2	0	0	0	2	-2	0	0	0	0	0	0	0	0	8	0	0	0	0
Excess total	0	10	4	1	0	0	9	-1	-1	1	0	0	0	0	0	0	19	3	0	0	1
Deaths total	71	34	15	2	1	138	55	20	2	2	210	89	35	4	3						
Excess <65	0	1	1	0	0	0	4	0	-1	1	0	5	1	0	1						
Deaths <65	33	11	6	1	1	43	18	6	0	1	76	29	13	2	2						
<b>1997-99</b>																					
Excess total	0	3	6	3	0	0	4	5	0	1	0	7	11	3	1						
Excess total†	46	19	14	4	1	60	23	14	1	1	106	42	27	5	2						
Deaths total	112	41	25	5	1	183	62	32	3	2	294	103	57	9	3						
Excess <65	0	4	6	1	0	0	2	3	1	1	0	6	9	2	1						
Excess <65†	11	8	8	2	1	20	8	6	1	1	31	16	14	3	2						
Deaths <65	43	18	13	3	1	61	21	12	2	2	104	38	26	5	3						

**Notes**

1. The first half of the table reports death rates (as SMRs) for the period 2002-04. The first two rows (shaded) in this section use Major Cities age-and sex-specific rates in 1997-99 as the standard and compare death rates in each of the areas with those in Major Cities in the same year (1997-99). The second two (unshaded) rows (marked with a †) use Major Cities age-and sex-specific rates in 2002-04 as the standard and compare death rates in each of the areas (including Major Cities) in 1997-99 with death rates in Major Cities in 2002-04.
2. The second half of the table describes the actual number of deaths and 'excess deaths' that occurred in each population. Shaded rows 1 and 4 have used 1997-99 Major Cities rates of death as the basis for calculating the number of excess deaths. Unshaded rows 2 and 5 (marked with a †) have used 2002-04 Major Cities rates of death as the basis for calculating the number of excess deaths in 1997-99.
3. For further explanation, refer to section 2.3.

Table 6.11: SMIRs, average annual deaths and 'excess' deaths due to asthma for Indigenous Australians and non-Indigenous Australians, 2002-04 and 1997-99

	Males						Females						Persons						
	Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			
	MC	IR	OR	R	VR	Rate	MC	IR	OR	R	VR	Rate	MC	IR	OR	R	VR	Rate	
<b>2002-04</b>																			
0-4	0	0.00	0.00	0.00	0.00	0.00	0	3.21	0.00	0.00	0.00	0.00	0	0.80	0.00	0.00	0.00	0.00	0.00
5-14	0	0.65	0.00	0.00	0.00	7.52	0	0.77	0.00	0.00	0.00	6.55	0	0.69	0.00	0.00	0.00	7.00	7.00
15-24	0	0.03	2.66	0.00	0.00	0.00	0	1.44	2.15	0.00	0.00	0.00	0	0.59	2.47	0.00	0.00	0.00	0.00
25-44	0	1.40	1.11	3.58	0.61	8.80	0	1.36	1.29	0.04	0.00	8.49	0	1.38	1.20	1.90	0.34	<b>*8.64</b>	<b>*8.64</b>
45-64	1	1.38	1.02	0.63	0.00	<b>*13.81</b>	2	1.13	0.78	0.27	0.00	<b>*11.58</b>	1	1.21	0.87	0.41	0.00	<b>*12.17</b>	<b>*12.17</b>
65-74	2	<b>*1.90</b>	1.11	0.54	0.00	13.76	3	1.45	1.34	1.34	9.52	<b>*13.01</b>	3	<b>*1.63</b>	1.24	0.98	4.84	<b>*13.25</b>	<b>*13.25</b>
75+	9	<b>*1.50</b>	1.46	1.59	2.41	0.00	16	1.08	0.87	0.76	0.00	0.00	13	<b>*1.20</b>	1.04	1.03	0.88	0.00	0.00
Total	1	<b>*1.40</b>	1.24	1.31	0.80	<b>*10.77</b>	2	1.16	0.95	0.60	1.11	<b>*10.47</b>	2	<b>*1.25</b>	1.05	0.89	0.97	<b>*10.58</b>	<b>*10.58</b>
Total <65	1	1.11	1.08	1.36	0.20	<b>*10.39</b>	1	1.19	0.92	0.19	0.00	<b>*10.07</b>	1	1.16	0.99	0.74	0.10	<b>*10.19</b>	<b>*10.19</b>
<b>1997-99</b>																			
Total	2	1.09	1.18	<b>*2.18</b>	0.85	<b>*15.14</b>	3	1.08	1.14	0.94	0.84	<b>*6.63</b>	2	1.08	1.16	1.49	0.84	<b>*9.07</b>	<b>*9.07</b>
Total <65	1	1.34	<b>*1.56</b>	2.23	0.81	<b>*15.14</b>	1	1.13	1.23	1.34	0.89	<b>*7.67</b>	1	<b>*1.22</b>	<b>*1.37</b>	1.75	0.85	<b>*10.53</b>	<b>*10.53</b>
Total†	<b>*1.86</b>	<b>*2.38</b>	<b>*2.55</b>	<b>*4.52</b>	1.68	n.p.	<b>*1.53</b>	<b>*1.67</b>	<b>*1.79</b>	1.50	1.35	n.p.	<b>*1.64</b>	<b>*1.89</b>	<b>*2.04</b>	<b>*2.66</b>	1.50	n.p.	n.p.
Total <65†	<b>*1.48</b>	<b>*2.29</b>	<b>*2.65</b>	<b>*3.66</b>	1.31	n.p.	<b>*1.56</b>	<b>*2.05</b>	<b>*2.24</b>	2.43	1.59	n.p.	<b>*1.53</b>	<b>*2.15</b>	<b>*2.42</b>	<b>*3.03</b>	1.45	n.p.	n.p.

(continued)

**Table 6.11 (continued): SMRs, average annual deaths and 'excess' deaths due to asthma for Indigenous Australians and non-Indigenous Australians, 2002-04 and 1997-99**

	Males						Females						Persons								
	Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			Non-Indigenous			Indigenous					
	MC	IR	OR	R	VR	MC	IR	OR	R	VR	MC	IR	OR	R	VR	MC	IR	OR	R	VR	
<b>Average annual number of excess deaths</b>																					
<b>2002-04</b>																					
0-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-14	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	1
15-24	0	-1	1	0	0	0	0	0	0	0	0	0	0	0	0	-1	1	0	0	0	0
25-44	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	2	1	1	0	0	1
45-64	0	2	0	0	0	1	0	-1	0	0	2	0	3	-1	0	3	-1	-1	0	0	3
65-74	0	3	0	0	0	0	0	3	1	0	1	0	6	1	0	1	0	1	0	1	1
75+	0	5	2	0	0	0	0	-1	0	0	2	0	7	1	0	7	1	1	0	0	0
Excess total	0	9	3	0	0	2	0	7	-1	0	4	0	17	2	0	2	0	2	0	0	6
Deaths total	68	33	14	2	0	2	133	51	18	1	4	201	84	32	3	1	84	32	3	1	6
Excess <65	0	1	0	0	0	2	0	3	0	-1	0	0	4	0	0	0	4	0	0	0	-1
Deaths <65	31	11	5	1	0	2	41	16	6	0	3	72	27	11	1	0	27	11	1	0	5
<b>1997-99</b>																					
Excess total	0	3	3	3	0	3	0	4	4	0	4	0	8	7	3	0	8	7	3	0	7
Excess total†	51	24	13	4	0	n.p.	61	24	13	1	0	n.p.	112	48	26	5	48	26	5	0	n.p.
Deaths total	109	41	21	5	1	4	177	61	30	3	1	4	287	102	51	8	102	51	8	1	8
Excess <65	0	4	4	1	0	3	0	2	2	0	0	3	0	7	6	2	7	6	2	0	6
Excess <65†	14	10	7	2	0	n.p.	21	10	6	1	0	n.p.	34	20	12	3	20	12	3	0	n.p.
Deaths <65	42	17	10	2	0	4	58	20	11	2	0	3	99	37	21	4	37	21	4	1	7

**Notes**

- The first half of the table reports death rates (as SMRs) for the period 2002-04. The first two rows (shaded) in this section use Major Cities age-and sex-specific rates in 1997-99 as the standard and compare death rates in each of the areas with those in Major Cities in the same year (1997-99). The second two (unshaded) rows (marked with a †) use Major Cities age-and sex-specific rates in 2002-04 as the standard and compare death rates in each of the areas (including Major Cities) in 1997-99 with death rates in Major Cities in 2002-04.
- The second half of the table describes the actual number of deaths and 'excess deaths' that occurred in each population. Shaded rows 1 and 4 have used 1997-99 Major Cities rates of death as the basis for calculating the number of excess deaths. Unshaded rows 2 and 5 (marked with a †) have used 2002-04 Major Cities rates of death as the basis for calculating the number of excess deaths in 1997-99.
- For further explanation, refer to section 2.3.

## 6.3 Chronic obstructive pulmonary disease

### Highlights

*Chronic obstructive pulmonary disease was responsible for 4% of all deaths and about 10% and 6–9% of all excess deaths in regional and remote areas respectively.*

*Death rates for Indigenous Australians were four times higher than the rates for non-Indigenous Australians in Major Cities.*

*Death rates increased with remoteness; SMRs were 1.2, 1.3, 1.5 and 2.4 in the four areas.*

*For non-Indigenous Australians, death rates also increased with remoteness; SMRs were 1.15, 1.3, 1.4 and 1.5 in the four areas.*

*Since 1992, death rates decreased for males in all areas and decreased slightly for females in Major Cities, but there was no significant change for females in the other areas.*

Chronic obstructive pulmonary disease (COPD) (ICD-10 codes J41–J44) is a long-term disease that causes continual and increasing shortness of breath.

Chronic bronchitis and emphysema are the two main forms of chronic obstructive pulmonary disease. The main risk factor for chronic obstructive pulmonary disease is tobacco smoking, with heredity predisposing some people. The disease takes many years to develop and cannot be cured. Symptoms vary, but they typically include breathlessness, a productive cough and wheezing (AIHW 2002).

On average during the period, COPD was responsible for 5,391 deaths annually – this is 4.1% of all deaths. Over half (59%) were male; 60% were in Major Cities, 37% in regional areas and 2% in remote areas.

Overall COPD death rates for Indigenous Australians were four times higher than the rates for non-Indigenous Australians living in Major Cities.

### In regional areas:

Death rates were 20% (1.2 times) and 40% (1.4 times) higher for males and 10% (1.1 times) and 15% (1.15 times) higher for females in Inner Regional and Outer Regional areas compared with Major Cities.

For 0–64 year olds, death rates were 1.5 and 2.0 times higher for males and 1.5 and 1.7 times higher for females than in Major Cities.

The inter-regional pattern for non-Indigenous Australians was similar to that above.

Annually there are 1,341 and 669 deaths in Inner Regional and Outer Regional areas; about 62% were male.

Annually there were 183 and 152 ‘excess’ deaths in Inner Regional and Outer Regional areas; this is 9% and 10% of all ‘excess’ deaths in Inner Regional and Outer Regional areas. About four-fifths (78%) of the ‘excess’ were male. The bulk of the excess was among males older than 65 years, with the excess for females amongst those 45–74 years (with fewer deaths than expected amongst females older than 75 years).

Compared with the previous reporting period (1997–99), there were 104 fewer deaths of males and 68 more deaths of females annually in 2002–04.

The 12-year trend (AIHW 2006a) is for decreasing death rates for males, while rates for females appear not to have changed at all.

**In remote areas:**

Death rates in Remote and Very Remote areas were 1.5 and 2.2 times those in Major Cities.

For 0–64 year olds, death rates in Remote and Very Remote areas were 2.2 and 4.4 times those in Major Cities.

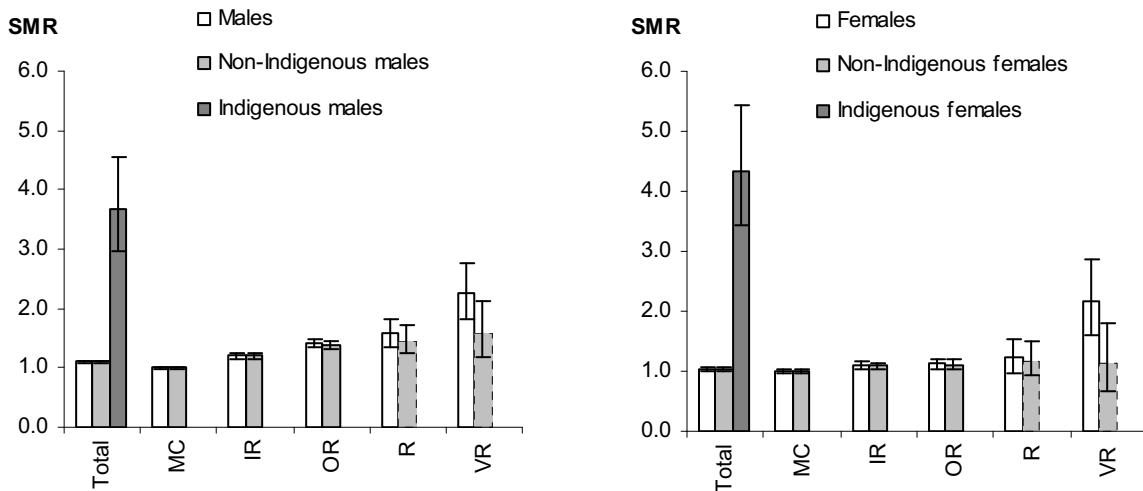
Death rates for remote area non-Indigenous Australians were lower than for the total population in these areas. However, rates for males were about 1.5 times those in Major Cities while rates for females were not significantly different from those in Major Cities. High rates for the total population in remote areas appear to be strongly influenced by the relatively large numbers of Indigenous Australians living in remote areas and the very high death rates for Indigenous Australians generally.

Annually there are 83 and 47 deaths in Remote and Very Remote areas; about 68% were male.

Annually there were 21 and 17 ‘excess’ deaths of males and 5 and 9 excess deaths of females in Remote and Very Remote areas; this is 9% and 6% of all ‘excess’ deaths in Remote and Very Remote areas. The bulk of the excess was in those older than 65 years, although there was some contribution from those 45–64 years.

Compared with the previous reporting period (1997–99), there were 3 more deaths of males and 2 fewer deaths of females annually in 2002–04.

The 12-year trend (AIHW 2006a) is for decreasing death rates for males, while rates for females show little change.

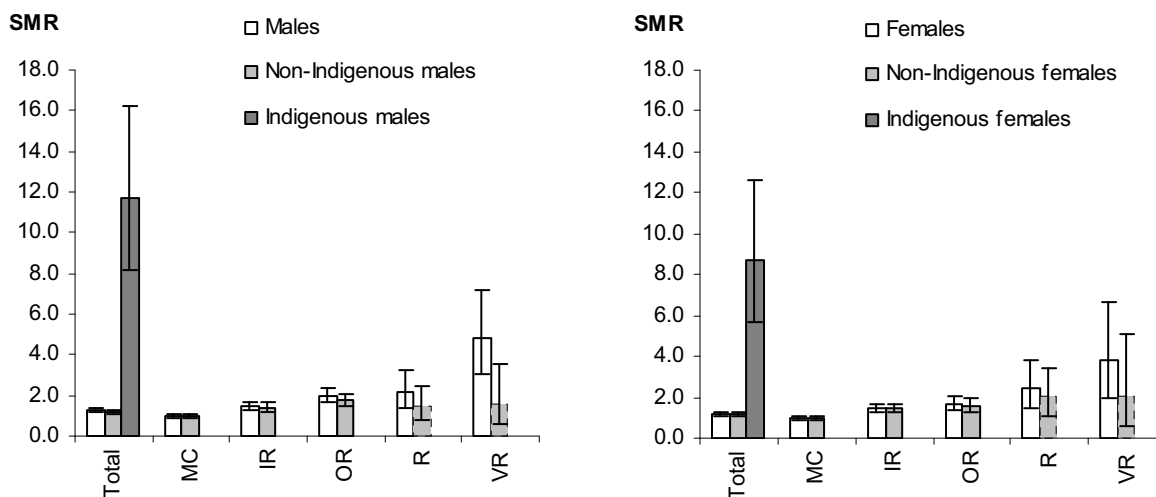


**Notes**

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 Australian persons from Remote and Very Remote areas (dashed) should be treated with caution (see Appendix A).
4. The SMRs for Indigenous Australian persons are for Qld, WA, SA and NT combined (see Appendix A).

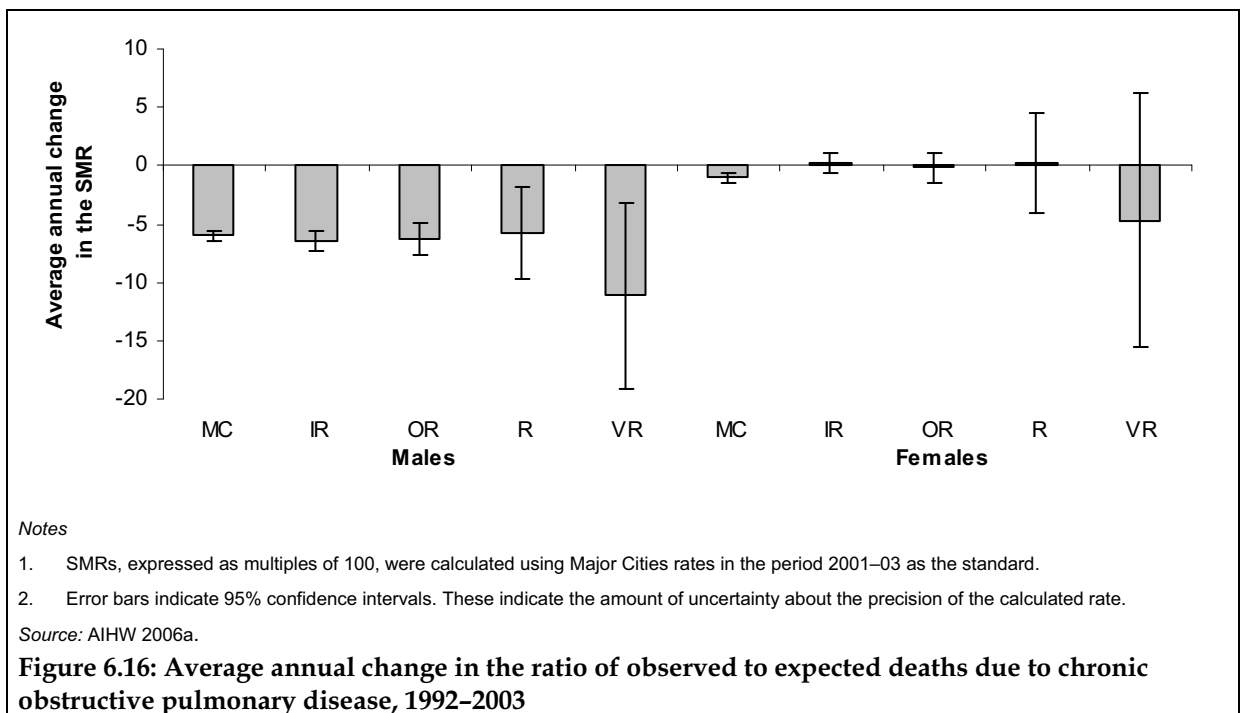
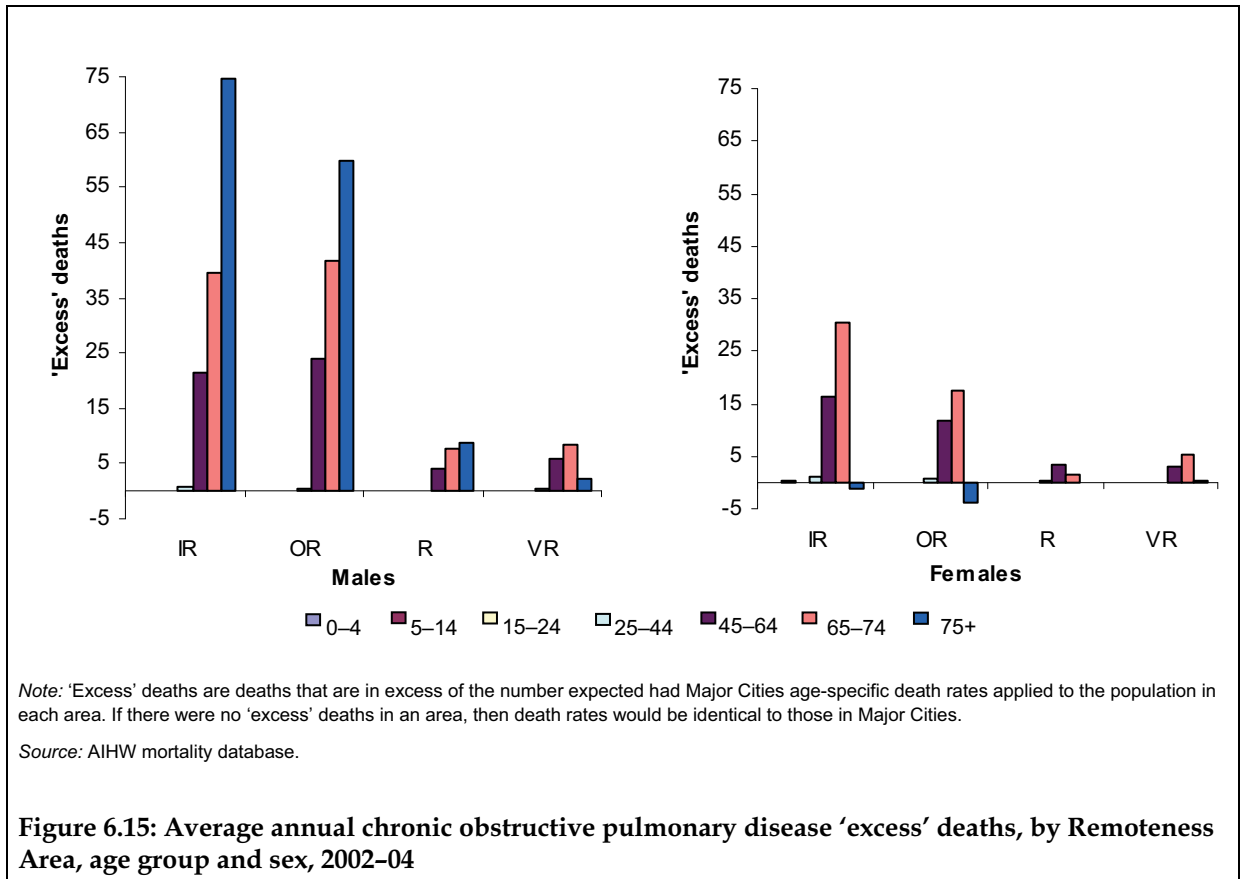
Source: AIHW mortality database.

**Figure 6.13: Chronic obstructive pulmonary disease SMRs, by sex, 2002-04**



Note: See notes for Figure 6.13.

**Figure 6.14: Chronic obstructive pulmonary disease SMRs for persons aged 64 years and under, by sex, 2002-04**





**Table 6.12 (continued): SMRs, average annual deaths and 'excess' deaths due to chronic obstructive pulmonary disease, 2002-04 and 1997-99**

	Males				Females				Persons			
	MC	IR	OR	VR	MC	IR	OR	VR	MC	IR	OR	VR
<b>Average annual number of excess deaths</b>												
<b>2002-04</b>												
0-4	0	0	0	0	0	0	0	0	0	0	0	0
5-14	0	0	0	0	0	0	0	0	0	0	0	0
15-24	0	0	0	0	0	0	0	0	0	0	0	0
25-44	0	1	0	0	0	1	1	0	0	2	1	0
45-64	0	22	24	4	0	16	12	3	0	38	36	9
65-74	0	39	42	8	0	30	18	2	0	70	59	14
75+	0	74	60	9	0	-1	-4	0	0	73	56	3
Excess total	0	136	126	21	0	47	26	5	0	183	152	26
Deaths total	1,825	810	433	31	1,421	532	235	26	16	1,341	669	47
Excess <65	0	22	25	4	0	18	13	4	0	40	37	9
Deaths <65	135	70	49	8	117	59	32	6	252	129	81	12
<b>1997-99</b>												
Excess total	0	148	134	12	0	20	24	9	0	168	158	21
Excess total†	423	300	207	21	124	62	43	11	547	363	250	32
Deaths total	2,016	871	476	52	1,381	474	225	30	3,397	1,344	701	82
Excess <65	0	23	27	3	0	8	8	5	0	31	35	8
Excess <65†	42	37	35	5	28	17	13	6	70	55	47	10
Deaths <65	163	78	57	8	124	50	29	8	287	128	85	15

**Notes**

- The first half of the table reports death rates (as SMRs) for the period 2002-04. The first two rows (shaded) in this section use Major Cities age-and sex-specific rates in 1997-99 as the standard and compare death rates in each of the areas with those in Major Cities in the same year (1997-99). The second two (unshaded) rows (marked with a †) use Major Cities age-and sex-specific rates in 2002-04 as the standard and compare death rates in each of the areas (including Major Cities) in 1997-99 with death rates in Major Cities in 2002-04.
- The second half of the table describes the actual number of deaths and 'excess deaths' that occurred in each population. Shaded rows 1 and 4 have used 1997-99 Major Cities rates of death as the basis for calculating the number of excess deaths. Unshaded rows 2 and 5 (marked with a †) have used 2002-04 Major Cities rates of death as the basis for calculating the number of excess deaths in 1997-99.
- For further explanation, refer to section 2.3.

Table 6.13: SMRs, average annual deaths and 'excess' deaths due to chronic obstructive pulmonary disease for Indigenous Australians and non-Indigenous Australians, 2002-04 and 1997-99

	Males						Females						Persons					
	Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			Non-Indigenous			Indigenous		
	MC	IR	OR	R	VR	Rate	MC	IR	OR	R	VR	Rate	MC	IR	OR	R	VR	Rate
<b>2002-04</b>																		
0-4	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
5-14	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
15-24	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
25-44	0	1.52	0.17	0.05	0.00	<b>*46.69</b>	0	2.97	0.09	0.00	0.00	<b>*50.01</b>	0	2.03	0.14	0.03	0.00	<b>*48.29</b>
45-64	8	<b>*1.42</b>	<b>*1.78</b>	<b>*1.65</b>	1.52	1.63	7	<b>*1.41</b>	<b>*1.58</b>	<b>*2.06</b>	2.09	<b>*7.58</b>	8	<b>*1.41</b>	<b>*1.69</b>	<b>*1.74</b>	1.80	<b>*9.14</b>
65-74	96	<b>*1.25</b>	<b>*1.53</b>	<b>*1.65</b>	<b>*2.43</b>	<b>*4.78</b>	59	<b>*1.29</b>	<b>*1.36</b>	1.19	1.66	<b>*6.50</b>	77	<b>*1.27</b>	<b>*1.47</b>	<b>*1.50</b>	<b>*2.20</b>	<b>*5.52</b>
75+	408	<b>*1.16</b>	<b>*1.29</b>	<b>*1.38</b>	1.25	1.48	209	<b>*1.29</b>	<b>*1.36</b>	1.19	1.66	<b>*1.87</b>	286	<b>*1.09</b>	<b>*1.16</b>	<b>*1.25</b>	1.08	<b>*1.64</b>
Total	27	<b>*1.20</b>	<b>*1.38</b>	<b>*1.46</b>	<b>*1.60</b>	<b>*3.69</b>	21	<b>*1.09</b>	<b>*1.11</b>	1.18	1.13	<b>*4.34</b>	24	<b>*1.15</b>	<b>*1.27</b>	<b>*1.36</b>	<b>*1.44</b>	<b>*3.97</b>
Total <65	2	<b>*1.42</b>	<b>*1.75</b>	1.49	1.59	<b>*11.72</b>	2	<b>*1.43</b>	<b>*1.56</b>	<b>*2.02</b>	2.05	<b>*8.67</b>	2	<b>*1.42</b>	<b>*1.67</b>	<b>*1.70</b>	1.76	<b>*10.19</b>
<b>1997-99</b>																		
Total	33	<b>*1.22</b>	<b>*1.39</b>	<b>*1.23</b>	<b>*1.67</b>	<b>*3.11</b>	22	1.05	<b>*1.11</b>	<b>*1.32</b>	1.10	<b>*3.91</b>	27	<b>*1.15</b>	<b>*1.29</b>	<b>*1.26</b>	<b>*1.49</b>	<b>*3.41</b>
Total <65	3	<b>*1.40</b>	<b>*1.80</b>	1.45	<b>*3.16</b>	<b>*9.30</b>	2	1.15	<b>*1.32</b>	<b>*2.54</b>	2.39	<b>*9.27</b>	3	<b>*1.29</b>	<b>*1.60</b>	<b>*1.85</b>	<b>*2.91</b>	<b>*9.28</b>
Total†	<b>*1.34</b>	<b>*1.73</b>	<b>*1.99</b>	<b>*1.77</b>	<b>*2.41</b>	<i>n.p.</i>	<b>*1.12</b>	<b>*1.17</b>	<b>*1.23</b>	<b>*1.47</b>	1.23	<i>n.p.</i>	<b>*1.24</b>	<b>*1.48</b>	<b>*1.67</b>	<b>*1.65</b>	<b>*1.98</b>	<i>n.p.</i>
Total <65†	<b>*1.45</b>	<b>*2.17</b>	<b>*2.79</b>	<b>*2.24</b>	<b>*4.85</b>	<i>n.p.</i>	<b>*1.27</b>	<b>*1.32</b>	<b>*1.52</b>	<b>*2.96</b>	2.85	<i>n.p.</i>	<b>*1.37</b>	<b>*1.75</b>	<b>*2.18</b>	<b>*2.56</b>	<b>*4.09</b>	<i>n.p.</i>

(continued)

**Table 6.13 (continued): SMRs, average annual deaths and 'excess' deaths due to chronic obstructive pulmonary disease for Indigenous Australians and non-Indigenous Australians, 2002-04 and 1997-99**

	Males						Females						Persons						
	Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			
	MC	IR	OR	R	VR	Indigenous	MC	IR	OR	R	VR	Indigenous	MC	IR	OR	R	VR	Indigenous	
<b>Average annual number of excess deaths</b>																			
<b>2002-04</b>																			
0-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25-44	0	0	0	0	0	1	0	1	0	0	0	1	0	1	-1	0	0	0	3
45-64	0	18	17	2	1	10	0	16	10	2	1	7	0	34	28	4	2	16	16
65-74	0	39	39	6	4	8	0	27	15	1	1	9	0	66	54	6	5	17	17
75+	0	74	58	8	2	2	0	-3	-4	0	-1	3	0	71	54	8	1	5	5
Excess total	0	132	113	15	6	21	0	41	21	3	1	20	0	173	135	19	7	41	41
Deaths total	1,769	783	409	48	17	29	1,368	507	221	23	6	25	3,137	1,290	629	71	22	54	54
Excess <65	0	19	17	2	1	11	0	17	10	2	1	8	0	36	27	4	1	19	19
Deaths <65	128	64	40	5	2	12	110	55	28	4	1	9	238	120	68	9	3	21	21
<b>1997-99</b>																			
Excess total	0	152	130	8	7	19	0	22	21	6	1	15	0	174	151	14	8	34	34
Excess total†	502	364	230	20	11	n.p.	145	65	41	8	1	n.p.	647	429	271	28	12	n.p.	n.p.
Deaths total	1,974	860	462	45	18	27	1,342	462	216	25	5	21	3,316	1,322	677	71	24	48	48
Excess <65	0	21	23	2	3	10	0	6	6	4	1	8	0	27	29	6	4	18	18
Excess <65†	49	41	33	3	4	n.p.	25	11	9	4	1	n.p.	74	52	42	7	5	n.p.	n.p.
Deaths <65	158	75	51	6	5	11	119	46	26	6	2	9	276	121	77	12	6	20	20

**Notes**

- The first half of the table reports death rates (as SMRs) for the period 2002-04. The first two rows (shaded) in this section use Major Cities age-and sex-specific rates in 1997-99 as the standard and compare death rates in each of the areas with those in Major Cities in the same year (1997-99). The second two (unshaded) rows (marked with a †) use Major Cities age-and sex-specific rates in 2002-04 as the standard and compare death rates in each of the areas (including Major Cities) in 1997-99 with death rates in Major Cities in 2002-04.
- The second half of the table describes the actual number of deaths and 'excess deaths' that occurred in each population. Shaded rows 1 and 4 have used 1997-99 Major Cities rates of death as the basis for calculating the number of excess deaths. Unshaded rows 2 and 5 (marked with a †) have used 2002-04 Major Cities rates of death as the basis for calculating the number of excess deaths in 1997-99.
- For further explanation, refer to section 2.3.

## 6.4 All other diseases of the respiratory system

### Highlights

*All other diseases of the respiratory system were responsible for 2% of all deaths. Annually, in regional and remote areas there were fewer deaths than expected, if Major Cities rates had applied there.*

*Death rates for Indigenous Australians were 3.5 times higher than the rates for non-Indigenous Australians in Major Cities.*

*Death rates in regional areas were lower than in Major Cities, and SMRs in remote areas were about the same as in Major Cities. For people younger than 65 years, SMRs in regional areas were not significantly different from 1.00 while those in Remote and Very Remote areas were 2.1 and 4.6 respectively. Death rates in the elderly living in regional and remote areas tend to be lower than in Major Cities.*

*For non-Indigenous Australians, death rates in regional and remote areas appeared to be about 0.8 times those in Major Cities, again influenced by relatively low rates in the elderly. SMRs for people younger than 65 years in all areas tended to be not significantly different from 1.0.*

*Since 1992, death rates have tended to increase in Major Cities and regional areas, and to have shown little change in remote areas.*

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).

On average during the period, all other diseases of the respiratory system were responsible for 2,657 deaths annually – this is 2% of all deaths. Half (52%) were male; 69% were in Major Cities, 29% in regional areas and 2% in remote areas.

Overall, death rates for Indigenous Australians were 3.5 times higher than the rates for non-Indigenous Australians living in Major Cities.

### **In regional areas:**

Death rates were 0.9 times those in Major Cities (that is, they were lower than in Major Cities).

For 0–64 year olds, death rates were not significantly different from those in Major Cities.

The inter-regional pattern for non-Indigenous Australians was similar to that above.

Annually there are 531 and 240 deaths in Inner Regional and Outer Regional areas; about 54% were male.

Annually there were 112 and 46 fewer deaths in Inner Regional and Outer Regional areas than expected. About half (52%) of these were male and the bulk were 75 years or older.

Compared with the previous reporting period (1997–99), there were 130 more deaths of males and 130 more deaths of females annually in 2002–04.

The 12-year trend (AIHW 2006a) is for increasing death rates for males and females.

**In remote areas:**

Death rates in Remote areas were not significantly different from those in Major Cities, while rates in Very Remote areas were 1.4 times those in Major Cities.

For 0–64 year olds, death rates in Remote and Very Remote areas were 2.1 and 4.6 times those in Major Cities.

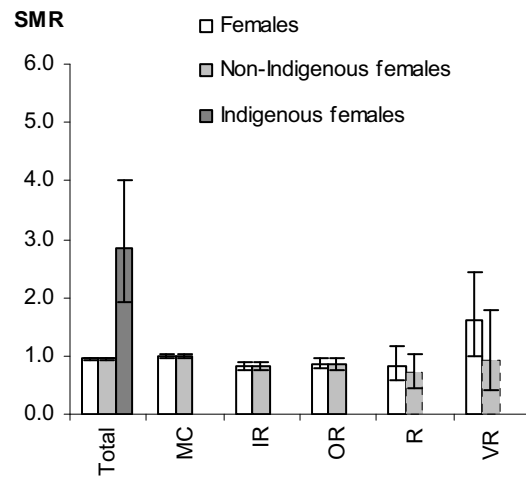
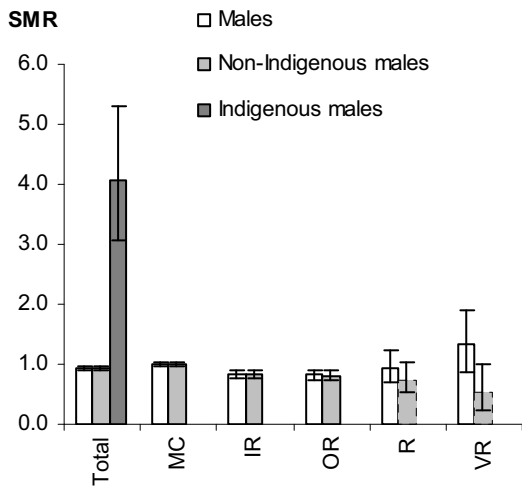
Death rates for remote area non-Indigenous Australians were 0.75 times (that is, lower than) those in Major Cities, while rates in Very Remote areas were lower, but not significantly lower, than those in Major Cities.

Annually there are 28 and 17 deaths in Remote and Very Remote areas; about 60% were male.

Annually there were 3 fewer and 5 more deaths than expected in Remote and Very Remote areas; this is about –1% and 1% of all ‘excess’ deaths in Remote and Very Remote areas.

Compared with the previous reporting period (1997–99), there were 6 more deaths of males and 4 more deaths of females annually in 2002–04.

Over the 12-year period 1992–2003 (AIHW 2006a), there did not appear to be any significant change in death rates, although rates for males in Very Remote areas suggested an improvement over this period.

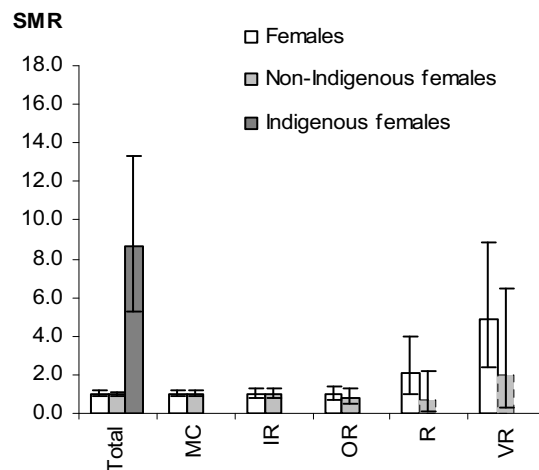
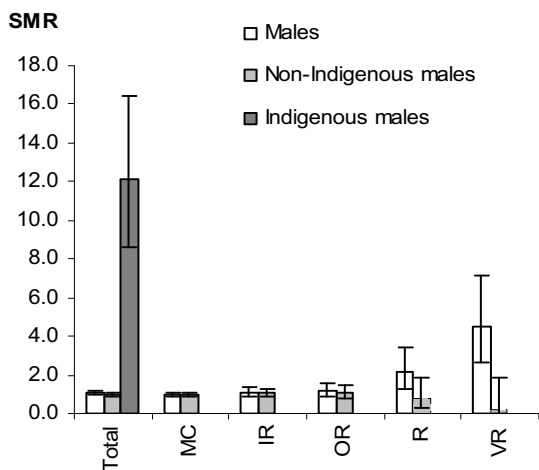


**Notes**

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 Australian persons from Remote and Very Remote areas (dashed) should be treated with caution (see Appendix A).
4. The SMRs for Indigenous Australian persons are for Qld, WA, SA and NT combined (see Appendix A).

Source: AIHW mortality database.

**Figure 6.17: All other diseases of the respiratory system SMRs, by sex, 2002-04**



Note: See notes for Figure 6.17.

**Figure 6.18: All other diseases of the respiratory system SMRs for persons aged 64 years and under, by sex, 2002-04**

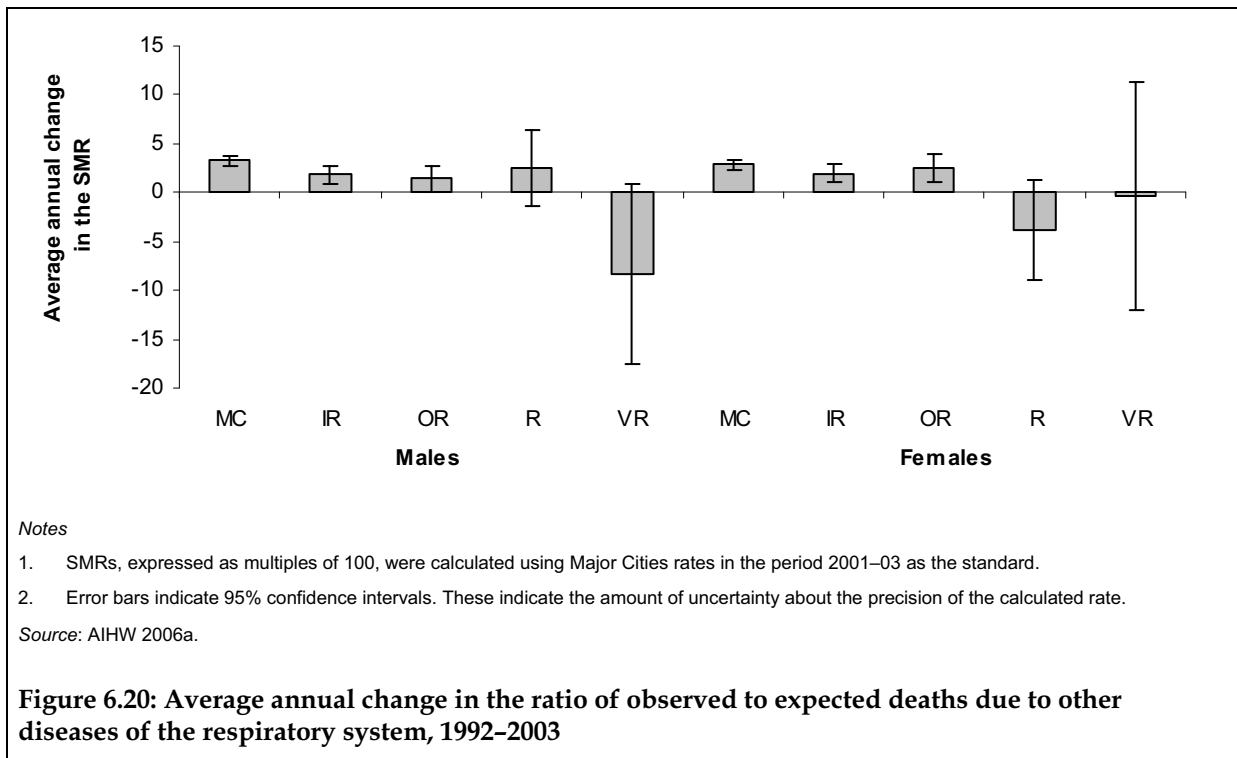
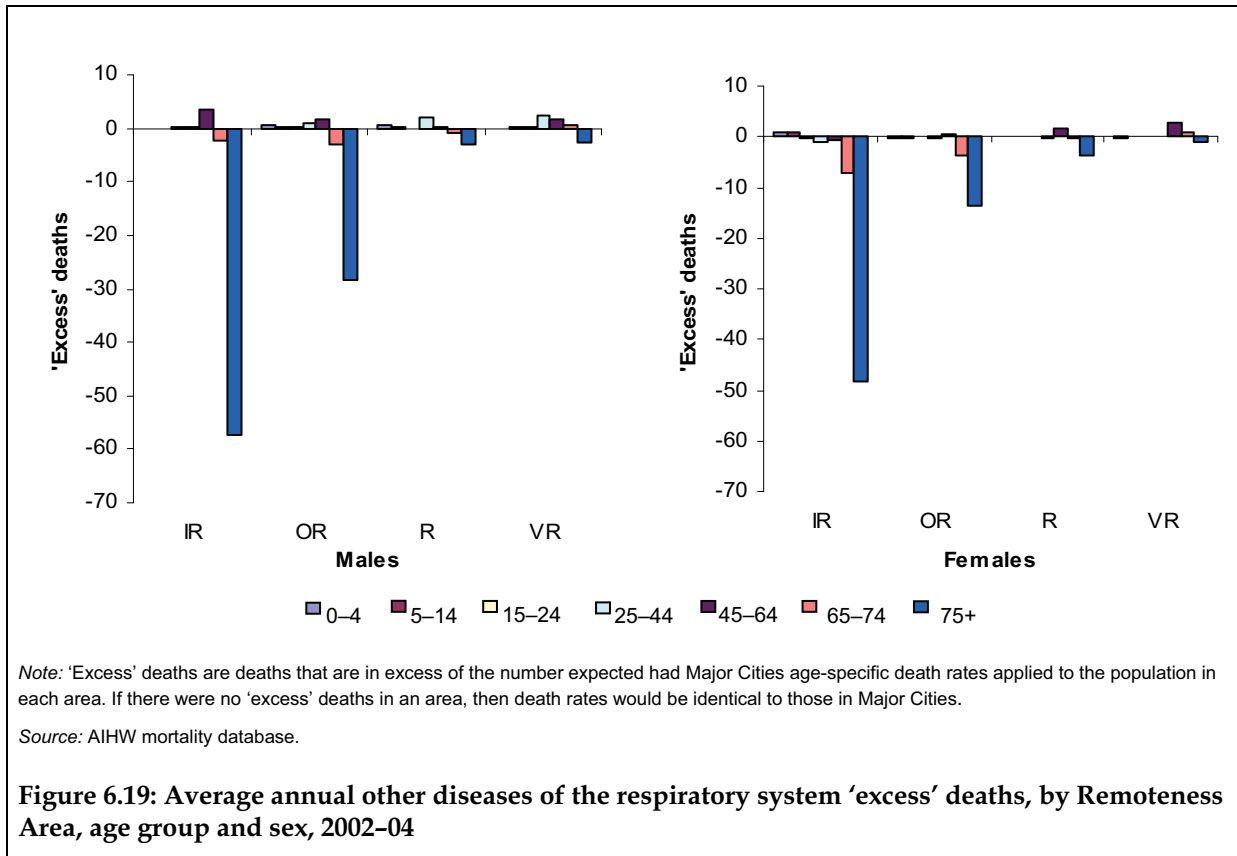


Table 6.14 SMRs, average annual deaths and 'excess' deaths due to other diseases of the respiratory system, 2002-04 and 1997-99

	Males						Females						Persons					
	MC	IR	OR	R	VR		MC	IR	OR	R	VR		MC	IR	OR	R	VR	
	Rate		Ratio			Rate	Rate		Ratio			Rate	Rate		Ratio			
<b>2002-04</b>																		
0-4	2	0.94	1.42	2.60	0.85	1	1.49	0.57	2.04	0.05	0.05	2	1.16	1.09	1.09	2.39	0.54	
5-14	0	0.14	5.83	31.22	56.01	0	4.55	0.00	0.00	0.00	0.00	0	3.09	1.96	1.96	10.77	19.61	
15-24	0	1.45	1.63	1.23	12.00	0	0.00	0.00	0.00	0.00	0.00	0	1.11	1.26	1.26	0.95	9.07	
25-44	1	1.08	1.57	*7.48	*14.9	1	0.70	0.89	0.57	1.36	1.36	1	0.89	1.25	1.25	*4.34	*8.82	
45-64	5	1.13	1.12	1.13	*2.68	3	0.96	1.04	*2.56	*7.29	*7.29	4	1.07	1.09	1.09	1.61	*4.19	
65-74	37	0.96	0.89	0.74	1.40	26	0.83	0.80	0.83	2.24	2.24	31	0.91	0.85	0.85	0.77	1.71	
75+	226	*0.77	*0.74	0.74	*0.39	149	*0.79	*0.86	*0.63	0.67	0.67	179	*0.78	*0.80	*0.80	*0.69	*0.51	
Total	14	*0.84	*0.82	0.94	1.32	13	*0.81	*0.86	0.83	1.60	1.60	14	*0.83	*0.84	*0.84	0.89	*1.43	
Total <65	2	1.12	1.21	*2.12	*4.49	1	1.00	0.96	2.11	*4.88	*4.88	1	1.07	1.11	1.11	*2.12	*4.63	
<b>1997-99</b>																		
Total	10	*0.86	0.89	0.95	*1.88	9	*0.82	0.91	1.09	1.45	1.45	9	*0.84	*0.90	*0.90	1.01	*1.72	
Total <65	1	0.89	*1.37	*2.12	*5.83	1	0.85	1.36	2.04	*3.09	*3.09	1	0.87	*1.37	*1.37	*2.08	*4.76	
Total†	*0.81	*0.70	*0.73	0.78	*1.54	*0.76	*0.62	*0.70	0.85	1.16	1.16	*0.79	*0.66	*0.71	*0.71	0.81	*1.39	
Total <65†	0.90	0.81	1.25	*1.91	*5.26	1.06	0.89	*1.44	2.20	*3.48	*3.48	0.96	0.84	*1.32	*1.32	*2.01	*4.66	

(continued)

**Table 6.14 (continued): SMRs, average annual deaths and 'excess' deaths due to other diseases of the respiratory system, 2002-04 and 1997-99**

	Males						Females						Persons					
	MC	IR	OR	R	VR		MC	IR	OR	R	VR		MC	IR	OR	R	VR	
	Average annual number of excess deaths																	
<b>2002-04</b>																		
0-4	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	1	0	
5-14	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	
15-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
25-44	0	0	1	2	2	0	-1	-1	0	0	0	0	0	-1	1	2	2	
45-64	0	4	2	0	2	0	-1	-1	0	2	3	0	0	3	2	2	4	
65-74	0	-2	-3	-1	1	0	-7	-7	-4	0	1	0	0	-10	-7	-1	1	
75+	0	-57	-28	-3	-3	0	-48	-48	-14	-4	-1	0	0	-106	-42	-7	-4	
Excess total	0	-56	-28	-1	2	0	-56	-56	-18	-2	3	0	0	-112	-46	-3	5	
Deaths total	941	287	129	17	10	893	245	245	112	11	7	1,834	531	240	240	28	17	
Excess <65	0	4	4	3	5	0	0	0	0	2	3	0	4	3	3	5	7	
Deaths <65	98	37	20	6	6	66	22	22	10	3	4	164	59	31	31	9	9	
<b>1997-99</b>																		
Excess total	0	-32	-11	-1	4	0	-34	-34	-7	1	1	0	-66	-19	-19	0	6	
Excess total†	-146	-83	-35	-3	3	-176	-91	-91	-33	-2	1	-322	-174	-68	-68	-5	4	
Deaths total	628	191	95	12	9	573	152	152	75	10	4	1,201	343	170	170	21	14	
Excess <65	0	-3	5	2	5	0	-3	-3	4	2	1	0	-6	9	9	4	7	
Excess <65†	-8	-5	4	2	5	3	-2	-2	4	2	1	-5	-7	8	8	4	6	
Deaths <65	78	23	19	5	6	61	17	17	14	3	2	139	40	33	33	8	8	

**Notes**

- The first half of the table reports death rates (as SMRs) for the period 2002-04. The first two rows (shaded) in this section use Major Cities age-and sex-specific rates in 1997-99 as the standard and compare death rates in each of the areas with those in Major Cities in the same year (1997-99). The second two (unshaded) rows (marked with a †) use Major Cities age-and sex-specific rates in 2002-04 as the standard and compare death rates in each of the areas (including Major Cities) in 1997-99 with death rates in Major Cities in 2002-04.
- The second half of the table describes the actual number of deaths and 'excess deaths' that occurred in each population. Shaded rows 1 and 4 have used 1997-99 Major Cities rates of death as the basis for calculating the number of excess deaths. Unshaded rows 2 and 5 (marked with a †) have used 2002-04 Major Cities rates of death as the basis for calculating the number of excess deaths in 1997-99.
- For further explanation, refer to section 2.3.

Table 6.15: SMRs, average annual deaths and 'excess' deaths due to other diseases of the respiratory system, for Indigenous Australians and non-Indigenous Australians, 2002-04 and 1997-99

	Males						Females						Persons						
	Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			Non-Indigenous			Indigenous			
	MC	IR	OR	R	VR	Rate	MC	IR	OR	R	VR	Rate	MC	IR	OR	R	VR	Rate	
<b>2002-04</b>																			
0-4	2	0.83	1.29	0.83	0.00	<b>*3.97</b>	1	1.30	0.67	0.04	0.00	1.52	2	1.01	1.05	0.53	0.00	3.00	
5-14	0	0.15	6.32	38.64	6.98	0.00	0	3.16	0.00	0.00	0.00	0.00	0	2.16	2.12	13.26	2.42	0.00	
15-24	0	1.47	1.73	1.47	0.00	<b>*23.11</b>	0	0.00	0.00	0.00	0.00	0.00	0	1.13	1.34	1.14	0.00	<b>*23.11</b>	
25-44	0	0.79	0.95	0.40	0.00	<b>*50.79</b>	0	0.75	0.91	0.00	0.00	<b>*8.36</b>	0	0.77	0.93	0.22	0.00	<b>*29.45</b>	
45-64	5	1.12	1.06	0.70	0.27	<b>*8.07</b>	3	0.99	0.86	0.92	2.83	<b>*12.31</b>	4	1.07	0.99	0.77	1.02	<b>*9.81</b>	
65-74	36	0.93	0.87	0.56	1.10	<b>*3.36</b>	25	0.84	0.75	0.86	1.38	<b>*2.91</b>	31	0.89	<b>*0.83</b>	0.67	1.19	<b>*3.75</b>	
75+	222	<b>*0.78</b>	<b>*0.75</b>	0.78	0.42	0.99	145	<b>*0.80</b>	0.89	0.67	0.64	0.76	175	<b>*0.79</b>	<b>*0.81</b>	<b>*0.73</b>	<b>*0.51</b>	0.89	
Total	14	<b>*0.83</b>	<b>*0.81</b>	0.74	0.52	<b>*4.07</b>	13	<b>*0.82</b>	<b>*0.86</b>	0.70	0.94	<b>*2.83</b>	14	<b>*0.83</b>	<b>*0.83</b>	<b>*0.73</b>	0.67	<b>*3.52</b>	
Total <65	2	1.07	1.10	0.82	0.23	<b>*12.09</b>	1	1.00	0.84	0.68	2.02	<b>*8.64</b>	1	1.05	1.00	0.77	0.80	<b>*10.67</b>	
<b>1997-99</b>																			
Total	10	<b>*0.86</b>	<b>*0.87</b>	<b>*0.66</b>	0.67	<b>*5.96</b>	9	<b>*0.83</b>	<b>*0.87</b>	0.93	0.60	<b>*5.51</b>	10	<b>*0.85</b>	<b>*0.87</b>	0.77	0.64	<b>*5.75</b>	
Total <65	1	0.86	1.11	0.99	0.94	<b>*14.37</b>	1	0.87	1.04	1.27	0.22	<b>*13.09</b>	1	0.87	1.08	1.10	0.69	<b>*13.81</b>	
Total†	<b>*0.81</b>	<b>*0.67</b>	<b>*0.68</b>	<b>*0.52</b>	0.53	<i>n.p.</i>	<b>*0.75</b>	<b>*0.58</b>	<b>*0.61</b>	<b>*0.66</b>	0.42	<i>n.p.</i>	<b>*0.78</b>	<b>*0.63</b>	<b>*0.64</b>	<b>*0.58</b>	<b>*0.49</b>	<i>n.p.</i>	
Total <65†	0.92	<b>*0.75</b>	0.96	0.85	0.80	<i>n.p.</i>	1.13	0.94	1.11	1.30	0.21	<i>n.p.</i>	1.00	<b>*0.82</b>	1.02	1.01	0.61	<i>n.p.</i>	

(continued)

**Table 6.15 (continued): SMRs, average annual deaths and 'excess' deaths due to other diseases of the respiratory system for Indigenous Australians and non-Indigenous Australians, 2002-04 and 1997-99**

	Males						Females						Persons								
	Non-Indigenous			Indige- nous	Non-Indigenous			Indige- nous	Non-Indigenous			Indige- nous	Non-Indigenous			Indige- nous					
	MC	IR	OR	R	VR	MC	IR	OR	R	VR	MC	IR	OR	R	VR	MC	IR	OR	R	VR	
<b>Average annual number of excess deaths</b>																					
<b>2002-04</b>																					
0-4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-24	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
25-44	0	-1	0	0	0	6	0	-1	0	0	0	0	-1	0	0	0	0	0	0	0	7
45-64	0	3	1	-1	-1	4	0	0	-1	0	1	5	0	0	3	0	0	-1	0	0	9
65-74	0	-4	-3	-1	0	2	0	-7	-5	0	0	1	0	0	-11	-8	-2	0	0	0	3
75+	0	-55	-28	-3	-2	0	0	-46	-11	-3	-1	-1	0	-101	-39	-5	-3	-1	0	0	-1
Excess total	0	-56	-29	-4	-3	14	0	-52	-17	-4	0	7	0	-109	-47	-8	-3	21	0	0	21
Deaths total	918	278	122	13	3	19	866	238	107	8	3	10	1,784	516	229	21	6	29	0	0	29
Excess <65	0	2	2	0	-1	12	0	0	-2	0	0	6	0	2	0	-1	0	18	0	0	18
Deaths <65	93	34	17	2	0	13	61	20	8	1	1	7	154	54	25	3	1	20	0	0	20
<b>1997-99</b>																					
Excess total	0	-30	-13	-4	-1	14	0	-31	-10	-1	-1	10	0	-60	-24	-4	-2	24	0	0	24
Excess total†	-142	-92	-42	-7	-2	n.p.	-186	-110	-45	-4	-2	n.p.	-328	-202	-87	-11	-4	n.p.	0	0	n.p.
Deaths total	613	187	89	8	2	16	557	149	69	7	1	13	1,170	337	158	15	4	29	0	0	29
Excess <65	0	-3	2	0	0	12	0	-2	0	0	0	8	0	-6	2	0	0	20	0	0	20
Excess <65†	-7	-7	-1	0	0	n.p.	7	-1	1	0	0	n.p.	0	-8	0	0	0	n.p.	0	0	n.p.
Deaths <65	75	21	15	2	1	13	59	17	10	2	0	9	134	38	24	4	1	22	0	0	22

**Notes**

1. The first half of the table reports death rates (as SMRs) for the period 2002-04. The first two rows (shaded) in this section use Major Cities age-and sex-specific rates in 1997-99 as the standard and compare death rates in each of the areas with those in Major Cities in the same year (1997-99). The second two (unshaded) rows (marked with a †) use Major Cities age-and sex-specific rates in 2002-04 as the standard and compare death rates in each of the areas (including Major Cities) in 1997-99 with death rates in Major Cities in 2002-04.
2. The second half of the table describes the actual number of deaths and 'excess deaths' that occurred in each population. Shaded rows 1 and 4 have used 1997-99 Major Cities rates of death as the basis for calculating the number of excess deaths. Unshaded rows 2 and 5 (marked with a †) have used 2002-04 Major Cities rates of death as the basis for calculating the number of excess deaths in 1997-99.
3. For further explanation, refer to section 2.3.