

26 Rural and remote residents

Australia's rural and remote population has poorer health than the metropolitan population with respect to several health outcomes (AIHW 1998). Many factors contribute to the health disadvantage in rural and remote areas, including geographic isolation and problems of access to care, socio-economic disparities, shortage of providers, greater exposure to injury (particularly among those employed in farming and mining) and Indigenous health. (AIHW 1998)

This chapter presents data on mortality and morbidity using the three zone/ seven category Rural, Remote and Metropolitan Area (RRMA) classification, detailed in Table 26.1 below.

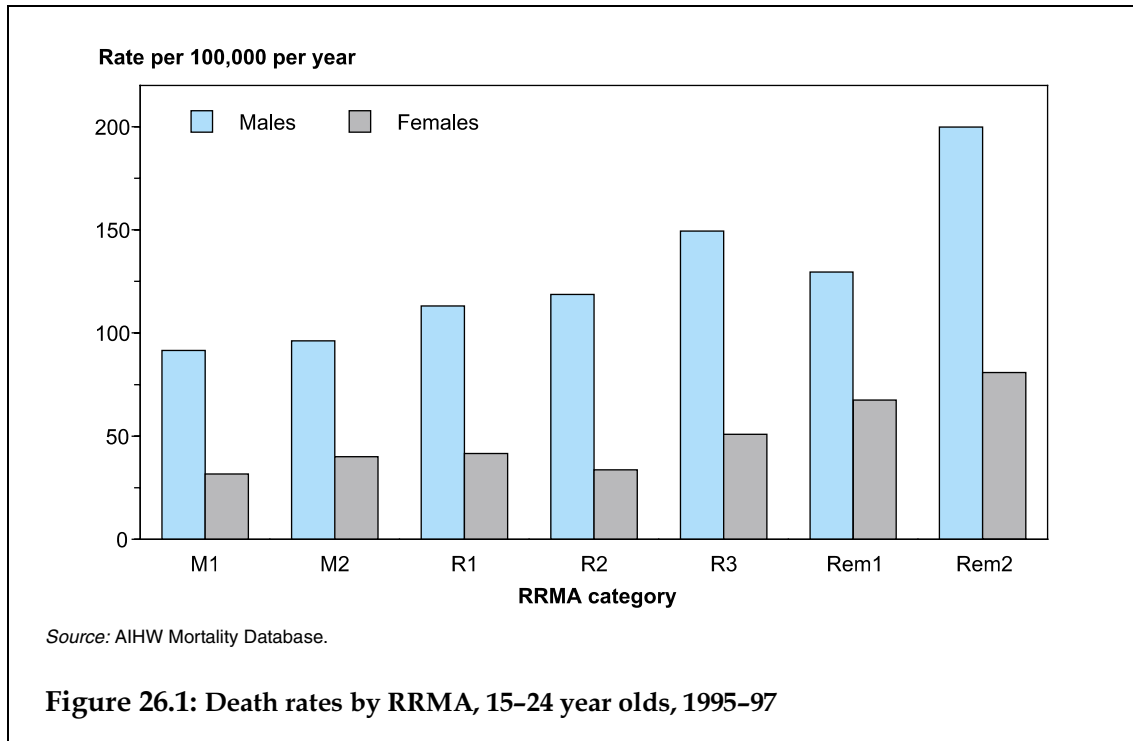
Table 26.1: Structure of the Rural, Remote and Metropolitan Areas (RRMA) classification

Zone	Category
Metropolitan zone	M1 Capital cities
	M2 Other metropolitan centres, (urban centre population \geq 100,000)
Rural zone	R1 Large rural centres, (urban centre population 25,000–99,999)
	R2 Small rural centres, (urban centre population 10,000–24,999)
	R3 Other rural areas, (urban centre population $<$ 10,000)
Remote zone	Rem1 Remote centres, (urban centre population \geq 5,000)
	Rem2 Other remote areas, (urban centre population $<$ 5,000)

To illustrate the impact of Indigenous health on differences in health status across RRMA categories, analysis of mortality data for the period 1992–1996 was examined for the three States and Territories considered to have the most complete registration of Indigenous deaths. Western Australia, South Australia and the Northern Territory have identified more than 90% of their Indigenous deaths over this period. The resulting analysis shows that:

- the proportion of Indigenous people is not high enough in the rural zone to have an impact on differences in health status between people living in metropolitan and rural zones
- the substantially higher proportion of Indigenous people living in the remote zone means that the Indigenous population does statistically lower the health status of people in the remote zone compared to metropolitan and rural zones (AIHW 1998).

Mortality



- It was shown in Chapter 5 that the death rate for males aged 15–24 years was higher than for females of the same age. The pattern of higher death rates for young males was consistent across all RRMA categories (Figure 26.1).
- The death rates for both males and females in the most remote areas (Rem2) were more than double those experienced in capital cities (M1), with rates for both sexes tending to rise with increasing remoteness.
- Death rates for subgroups described in this chapter are all less than 200 per 100,000 per year. These rates are much smaller than for children in their first year of life, considerably greater than for 5–14 year olds, smaller than but similar to rates for 25–34 and 35–44 year olds, and much less than for those over 80 years (generally greater than 10,000 per 100,000 population per year).

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Table 26.2: Selected causes of death, males aged 15–24 years, 1995–97 (rate per 100,000 population)

Underlying cause of death/ external cause (ICD-9)	RRMA Area						
	M1	M2	R1	R2	R3	Rem1	Rem2
Mental disorders (290.0–316.9)							
Number	219	16	7	13	15	n.p.	n.p.
Rate	8.10	5.10	2.78	5.40	3.32		
Cancer (neoplasms 140.0–239.9)							
Number	159	22	18	20	23	n.p.	n.p.
Rate	5.88	7.01	7.14	8.30	5.09		
Nervous system and sense organs (320.0–389.9)							
Number	96	17	10	12	21	n.p.	n.p.
Rate	3.55	5.42	3.97	4.98	4.65		
Motor vehicle accidents (see Appendix 4)							
Number	407	54	71	57	217	17	34
Rate	15.05	17.21	28.16	23.66	48.04	32.40	44.41
Violence (see Appendix 4)							
Number	78	7	n.p.	n.p.	13	n.p.	9
Rate	2.88	2.23			2.88		11.76
Suicide (E950.0–959.9)							
Number	649	87	78	84	171	16	33
Rate	24.00	27.73	30.94	34.87	37.86	30.50	43.11
All injury (E800.0–E999.9)							
Number	1765	223	219	212	567	57	111
Rate	65.26	71.08	86.86	88.01	125.53	108.65	145.00
All causes							
Number	2475	302	285	286	675	68	153
Rate	91.51	96.26	113.04	118.74	149.44	129.61	199.87

Note: n.p. (not published) is used for cells containing numbers of 5 or less.

Source: AIHW Mortality Database.

- The male death rate due to motor vehicle accidents tended to rise with increasing remoteness to almost three times the capital city rate (Table 26.2).
- The male death rate from suicide tended to rise with increasing remoteness. The rate in 'other remote areas' (Rem2: 43 per 100,000) was almost twice as high as in capital cities (M1: 24 per 100,000).
- Male death rates due to 'all injury' also showed a general trend to rise with increasing remoteness. The death rate for 'all injury' in 'other remote centres' (Rem2: 145 per 100,000) was more than twice as high as in capital cities (M1: 65 per 100,000).

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Table 26.3: Selected causes of death, females aged 15–24 years, 1995–97 (number of deaths, and rate per 100,000 population)

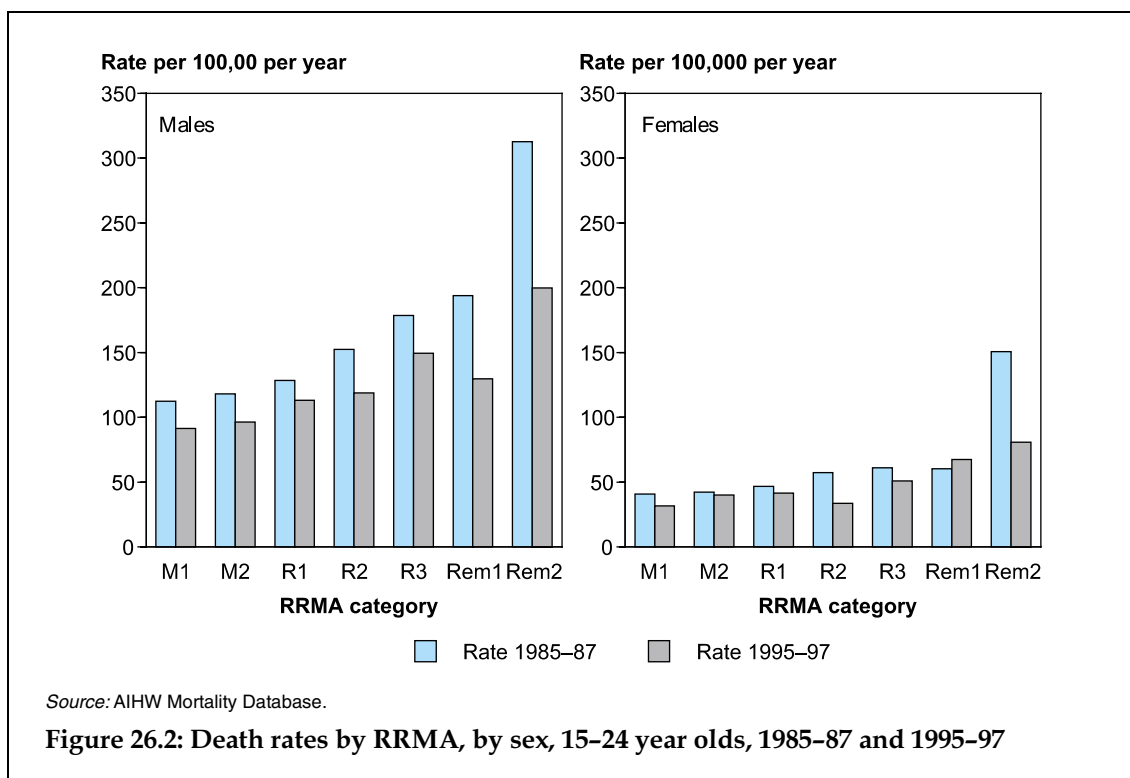
Underlying cause of death/ external cause (ICD-9)	RRMA Area						
	M1	M2	R1	R2	R3	Rem1	Rem2
Mental disorders (290.0–316.9)							
Number	75	8	n.p.	n.p.	9	n.p.	n.p.
Rate	2.84	2.65			2.01		
Cancer (neoplasms 140.0–239.9)							
Number	100	10	9	10	19	n.p.	n.p.
Rate	3.78	3.31	3.56	4.37	4.79		
Nervous system and sense organs (320.0–389.9)							
Number	45	6	6	n.p.	8	n.p.	n.p.
Rate	1.70	1.99	2.37		2.02		
Motor vehicle accidents (see Appendix 4)							
Number	152	25	23	26	74	10	15
Rate	5.75	8.28	9.10	11.36	18.63	21.79	23.76
Suicide (E950.0–959.9)							
Number	153	17	17	9	29	n.p.	n.p.
Rate	5.78	5.63	6.73	3.93	7.30		
Violence (see Appendix 4)							
Number	35	8	n.p.	n.p.	n.p.	n.p.	n.p.
Rate	1.32	2.65					
All injury (E800.0–E999.9)							
Number	460	69	60	48	130	19	32
Rate	17.39	22.84	23.74	20.98	32.74	41.39	50.70
All causes							
Number	837	121	105	77	202	31	51
Rate	31.65	40.06	41.54	33.65	50.87	67.53	80.80

Note: n.p. (not published) is used for cells containing numbers of 5 or less.

Source: AIHW Mortality Database.

- Although lower than for males, the death rate for females due to motor vehicle accidents showed the same trend to rise with increasing remoteness.
- The female death rate from suicide was with similar across RRMA. The female suicide rates were much lower than for males.
- Similar to the trend for males, the female death rate due to all injury, although smaller, rose to three times the capital city rate (M1: 17 per 100,000) in 'other remote areas' (Rem2: 51 per 100,000).

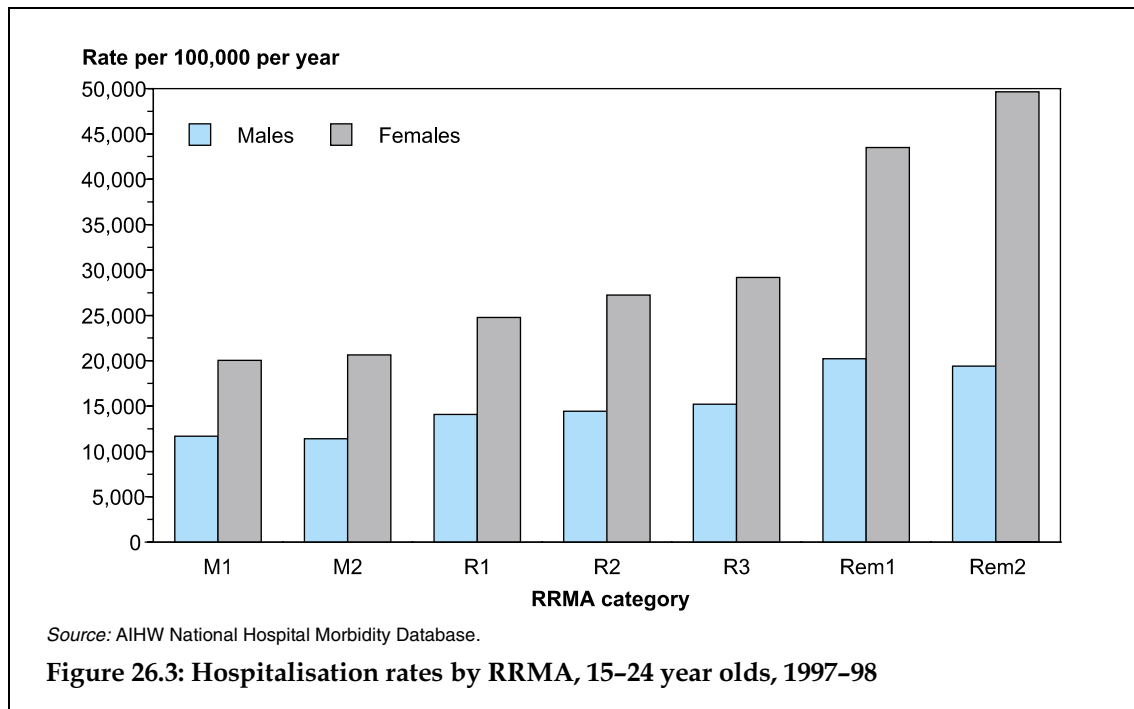
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- Death rates for this age group have decreased during the period from 1985-87 to 1995-97. Death rates have decreased particularly for males and for those in more remote areas (where rates for both sexes decreased to approximately 60% of the 1985-87 rate). The death rate in capital cities and for much of rural Australia appears to have decreased generally to between 90% and 60% of the corresponding 1985-87 value.
- As a general statement, the death rates of the non metropolitan areas tended to become more like those of metropolitan centres during this period. It is possible that the trend could continue until rates for these areas are indistinguishable (Figure 26.2).
- Approximately 50% of the decrease in death rates for males in remote areas are attributable to a decrease in motor vehicle (including motor cycle) accidents, while for females, significant contributors are less obvious (although reduced rates of death due to motor vehicle accidents and murder have clearly contributed in the remote zone).

Morbidity

This section presents information on hospitalisation rates by RRMA category. Due to missing data of either sex or RRMA category, 1.5% of separations are missing from the following analyses.



- It was shown in Chapter 6 that the hospitalisation rate for young females exceeded that of young males from age 15 years, and that females had higher hospitalisation rates than males (see Figure 6.3)
- Hospitalisation rates increased with increasing remoteness. The rate for male hospitalisation in 'other remote areas' (Rem2: 19,415 per 100,000) was one and a half times higher than the rate in capital cities (M1: 11,668 per 100,000).
- The rate for female hospitalisations in 'other remote areas' (Rem2: 49,651 per 100,000) was two and a half times higher than the rate in capital cities (M1: 20,058 per 100,000).
- Hospitalisation rates for this age group are higher than for children (approximately 10,000 separations per 100,000 population) with rates then generally increasing with age to approximately 80,000–100,000 per 100,000 for people older than 75 years.

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Table 26.4: Selected reasons for hospitalisation, males aged 15–24 years, 1997–98 (number and rate per 100,000 population)

Principal diagnosis (ICD-9-CM)	RRMA Area						
	M1	M2	R1	R2	R3	Rem1	Rem2
Endocrine (240.0–279.9)							
Number	1,320	161	192	129	320	52	33
Rate	146	152	227	160	212	298	133
Mental disorders (290.0–316.9)							
Number	11,614	887	806	1009	1,489	214	296
Rate	1284	840	954	1,248	985	1,225	1,190
Circulatory system (390.0–459.9)							
Number	1,428	157	132	130	262	50	65
Rate	158	149	156	161	173	286	261
Respiratory system (460.0–519.9)							
Number	6,476	721	677	708	1,551	203	303
Rate	716	683	801	876	1,026	1,162	1,218
Motor vehicle accidents (see Appendix 4)							
Number	1,900	206	227	264	755	93	177
Rate	210	195	269	327	500	532	712
<i>All transport (E800.0–849.9)</i>							
Number	4,778	624	692	739	1,950	289	488
Rate	528	591	819	914	1,290	1,654	1,962
Self-inflicted injuries (E950.0–E959.9)							
Number	1,193	157	145	148	216	39	58
Rate	132	149	172	183	143	223	233
Violence (E960.0–E969.9)							
Number	2,905	269	330	320	571	204	303
Rate	321	255	391	396	378	1,168	1,218
<i>All injuries (E800.0–E999.9)</i>							
Number	25,380	3,092	3,546	3,373	7,484	1,412	2,028
Rate	2,807	2,927	4,197	4,172	4,952	8,081	8,154
All causes							
Number	105,515	12,052	11,886	11,663	23,006	3,535	4,829
Rate	11,668	11,410	14,069	14,424	15,221	20,231	19,415

Source: AIHW National Hospital Morbidity Database.

- The hospitalisation rates due to violence were similar for the metropolitan and rural zones at approximately 250 to 400 per 100,000, however, in the remote zone, the rate rose to over 1,100 per 100,000.
- Male hospitalisation rates due to all injury showed a strong trend to rise with increasing remoteness. The rate in capital cities (M1) was 2,807 per 100,000, rising to 4,952 per 100,000 in 'other rural areas' (R3) and more than 8,000 per 100,000 population in the remote zone (Rem1 and Rem2).
- Hospitalisation rates due to motor vehicle accidents also tended to rise with increasing remoteness. Rates for young males in capital cities (M1) were 210 per 100,000, increasing to 532 per 100,000 in 'other rural centres' (R3) and 712 per 100,000 in 'other remote areas' (Rem2).
- Hospitalisation rates for males tended to rise with increasing remoteness for self-inflicted injuries, 'all transport' and 'other causes'.

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Table 26.5: Selected reasons for hospitalisation, females aged 15–24 years, 1997–98 (number and rate per 100,000 population)

Principal diagnosis (ICD-9-CM)	RRMA Area						
	M1	M2	R1	R2	R3	Rem1	Rem2
Endocrine (240.0–279.9)							
Number	1,924	228	232	201	405	37	63
Rate	219.2	226.4	274.8	262.5	304.8	245.9	305.4
Mental disorders (290.0–316.9)							
Number	12,810	835	772	876	1,647	158	270
Rate	1,459.3	829.1	914.6	11,44.1	1,239.4	1,050.0	1,308.8
Circulatory system (390.0–459.9)							
Number	1,040	124	122	111	216	49	63
Rate	118.5	123.1	144.5	145.0	162.5	325.6	305.4
Respiratory system (460.0–519.9)							
Number	8129	986	999	1,119	2,245	293	411
Rate	926.1	979.1	1,183.5	1,461.5	1,689.4	1,947.1	1,992.2
Obstetrics (630.0–677.9)							
Number	62,790	8,595	9,395	8,896	15,492	2,763	4,044
Rate	7,153.2	8,534.5	11,129.8	11,618.9	11,658.0	18,361.2	19,602.5
Motor vehicle accidents (see Appendix 4)							
Number	1,224	105	124	126	431	38	80
Rate	139.4	104.3	146.9	164.6	324.3	252.5	387.8
All transport (E800.0–849.9)							
Number	1,937	193	226	223	737	74	171
Rate	220.7	191.6	267.7	291.3	554.6	491.8	828.9
Self-inflicted injuries (E950.0–E959.9)							
Number	2,222	267	191	208	313	40	56
Rate	253.1	265.1	226.3	271.7	235.5	265.8	271.4
Violence (E960.0–E969.9)							
Number	442	34	63	89	182	131	281
Rate	50.4	33.8	74.6	116.2	137.0	870.5	1,362.1
All injury (E800.0–E999.9)							
Number	10,512	1,156	1,316	1,237	2,757	526	937
Rate	1,197.6	11,47.9	1,559.0	1,615.6	2,074.7	3,495.5	4,541.9
All causes							
Number	176,063	20,773	20,898	20,869	38,795	6,545	10,243
Rate	20,058	20,627	24,757	27,257	29,194	43,494	49,651

Source: AIHW National Hospital Morbidity Database.

- The cause of hospitalisation with the largest difference in hospitalisation rate between capital cities and remote areas was hospitalisation for a pregnancy-related cause. Capital city (M1) and other metropolitan (M2) hospitalisation rates were 7,153 and 8,535 per 100,000 population respectively; the hospitalisation rate for rural females was higher to 11,658 per 100,000, while the rate for remote zone females was higher again to just less than 20,000 per 100,000 population.
- The female hospitalisation rate due to violence followed the same pattern as that for young males. The rates in metropolitan centres and the rural zone increased to a level of less than 140 per 100,000. The rates in the remote zone were significantly

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higher at 870 per 100,000 in remote centres (Rem1) and 1,362 per 100,000 in 'other remote areas' (Rem2).

- As was the trend with males, hospitalisation rates for young females due to all injury rose with increasing remoteness. Rates in 'other remote areas' (Rem2: 4,542 per 100,000) were 3.8 times higher than the rates in capital cities (M1: 1,198 per 100,000). Rates for young females were approximately half those for young males in all RRMA categories.
- Female hospitalisation rates due to motor vehicle accidents also tended to rise with increasing remoteness. Rates for young females in capital cities (M1) were around 139 per 100,000, increasing to 324 per 100,000 in 'other rural centres' (R3) and 388 per 100,000 in 'other remote areas' (Rem2).
- Hospitalisation rates due to 'other causes' also followed the trend for rates to increase with remoteness, while hospitalisation rates for mental disorders were high in capital cities, then low in 'other metropolitan centres' rising to high rates again in 'other remote areas'.

References

Australian Institute of Health and Welfare (AIHW) 1998. Health in rural and remote Australia. AIHW Cat. No. PHE 6. Canberra: AIHW.