9 Coastal/inland supplement

9.1 Introduction

This chapter briefly compares mortality in coastal and inland regional and remote areas with mortality in Major Cities. The nine non-contiguous geographic areas used here as the basis for reporting are Major Cities, Inland Inner Regional, Inland Outer Regional, Inland Remote, Inland Very Remote, Coastal Inner Regional, Coastal Outer Regional, Coastal Remote and Coastal Very Remote.

As demonstrated in the main body of this report, death rates can differ substantially within broad geographic (for example, Inner Regional) areas. The aim of this work is to uncover any substantial differences in health outcomes for people living in inland compared to coastal regional and remote areas. Identification of substantial differences may suggest further work in this area.

In this exploratory work, it has been important to be economic. Consequently, analysis has been restricted to 2001 and to 'all causes'.

This approach:

- capitalises on the existing 2001 SLA to ASGC Remoteness concordance made available by ABS, and avoids the need to map non-matching SLAs
- requires the development of population data for one year only (the year for which ABS SLA maps were available) (ABS 2001c).

From this work, there appear to be differences in the rate of death in coastal and inland areas (notably in those areas classified as Inner Regional and Remote). While some of the difference may be influenced by truly geographic factors, some may reflect retirement migration, differences in socioeconomic conditions and the percentage of the population who are Indigenous Australian.

SMRs for coastal and inland analysis were calculated using the same method as in the rest of the report (described in Appendix A), but utilising age-specific rates in the 2001 Major Cities population as the standard. Consequently, SMRs and excess deaths for the coastal/inland analysis are not strictly comparable to those described in the rest of this report.

Confidence intervals presented in the figures indicate whether SMRs are significantly different from 1.00 (that is, from Major Cities), and do not strictly allow inter-regional comparisons (for example, between inland Inner Regional and Coastal Very Remote areas). SMRs based on less than 20 observed deaths have been presented as shaded rather than solid bars.

To allow for any possible effect of migration, rates have also been calculated for that part of the population younger than 65 years.

Further work would include:

- validation of the areas selected to represent coastal and inland areas (that is, are the SLAs selected appropriate and do they have broad consensus)
- consideration of the use of meshblocks in the identification of coastal and inland areas (which would provide much tighter definition of coastal/inland)

- exploration of a range of specific causes of death, socioeconomic status and Indigenous Australian status contributing to inter-regional differences.

9.2 Coastal classifications

A coastal/inland classification was specifically developed at the AIHW for this report. Other coastal classifications have previously been developed by others, but they were not considered appropriate for this work. The ABS had previously identified all SLAs that 'touched' the coastline and had also identified those parts of the coast that had experienced population growth (pers. comm. Frank Blanchfield). The Bureau of Rural Sciences (BRS) had developed a coastal classification; however it classified some coastal areas (for example, in Western and Northern Australia) as inland (pers. comm. Frank Blanchfield).

The coastal classification used in this exploratory work has been developed without consultation, and so the results should be viewed as indicative of the sorts of differences that would be apparent under a more tightly defined and widely accepted coastal/inland definition (rather than definitive).

This classification attempts to identify all coastal fringe statistical local areas (SLAs) that occur in Inner Regional, Outer Regional, Remote and Very Remote areas. The balance of SLAs in Inner Regional, Outer Regional, Remote and Very Remote areas are classified as 'inland'. Areas that are classified as Major Cities are included in a separate 'Major Cities' category (that is, Major Cities are considered neither coastal nor inland).

The classification uses 2001 SLAs as its geographic basis.

Coastal SLAs were identified by eye from the ABS publication *ASGC 2001, Chapter 14 maps, geographic Australia* (ABS 2001c).

As it is based on SLAs, the boundary between coast and inland is necessarily ragged. Criteria for selection were:

- Coastal/inland boundary was targeted at 80 km from the coast wherever possible.
- Where they exist, the boundary follows natural breaks (for example, escarpments) and Major Cities boundaries. Escarpments had a substantial effect in New South Wales—consequently highland SLAs like Wingecarribee were excluded from coastal (and included in inland) categories even though they were relatively close to the coast.
- Where SLAs were large and extend large distances into the hinterland, they have been included or excluded on the basis of where the bulk of the people appear to live (that is, if major population centres were predominantly on the coast, then the SLA has been included as coastal).
- Hinterland SLAs have been included, particularly where the littoral SLAs (that is, those bounding the sea) fall far short of the target 80 km, and where the geography suggests or allows a degree of continuity between the immediate coastal SLA and the hinterland SLA.
- Major Cities SLAs have not been allocated to the 'inland' or 'coastal' grouping, even though most Major Cities SLAs in Australia are close to the coast (for example, Sydney) or distinctly inland (for example, Canberra). Instead, data for such SLAs have been reported in the third major group in this preliminary classification, 'Major Cities'.
- Some SLAs may contain areas classified as Inner Regional and other areas classified as Major Cities. The Inner Regional parts of such SLAs have been classified as coastal or

inland Inner Regional areas (as appropriate). Those parts of such SLAs that are classified as Major Cities areas have been allocated to the Major Cities group (that is, not to the coastal or to the inland group).

The SLAs identified as coastal in this classification have been included in Appendix D. All other SLAs are classified as inland or Major Cities. Some of the SLAs classified as coastal contain areas that are classified as Major Cities. This is because the ABS-defined boundaries of Remoteness Areas do not necessarily conform to SLA boundaries.

It is likely that the approximate and tentative nature of this preliminary classification will partially cloud mortality differences between inland and coastal areas, but that reported differences between these two areas are indicative of true differences.

9.3 Demographic characteristics of coastal and inland populations

In 2001, there are about 6.5 million people living outside Major Cities. According to the definition used in this report, 53% of these people live in coastal areas and 47% live in inland areas. These proportions differ from state to state (see Table 9.1).

Table 9.1: Percentage of the non-Major Cities population in each jurisdiction living in coastal and inland areas, 2001

Jurisdiction	Inland	Coastal
	Per cent	
NSW	56	44
Vic	79	21
Qld	32	68
WA	30	70
SA	46	54
Tas	5	95
ACT	100	0
NT	30	70
Other territories	0	100
Australia	**47**	**53**

Because of Tasmania's small geographical size relative to the size of its SLAs, most of this state is classified as coastal. At the other extreme, non-Major Cities parts of the Australian Capital Territory (except for Jervis Bay which is included under 'other territories') are classified as inland.

About 53%, 56%, 45% and 52% respectively of the populations living in Inner Regional, Outer Regional, Remote and Very Remote areas are classified as coastal (Figure 9.2).

The population in coastal Inner Regional areas tends to have proportionally fewer younger people and proportionally more old people than populations in inland Inner Regional areas (Figure 9.3).

The population in coastal Outer Regional areas tends to have proportionally more people of working age and fewer older people than inland Outer Regional areas (Figure 9.4).

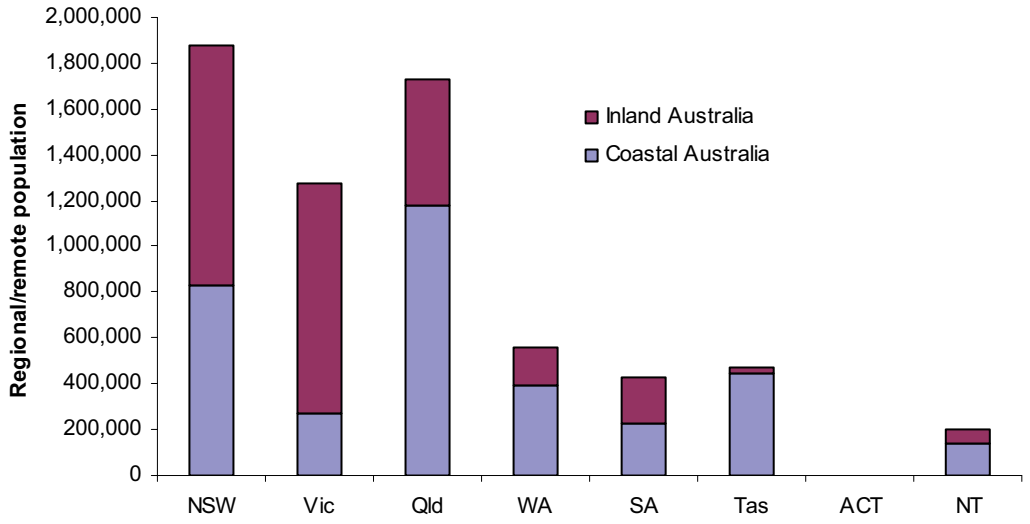
The population in coastal Remote areas tends to have fewer younger people and greater numbers of older people than inland Remote areas (similar to the coastal/inland comparison for Inner Regional areas) (Figure 9.5).

The age structure of the population in coastal Very Remote areas tends to have proportionally more children and fewer older people than inland Very Remote areas (Figure 9.6).

To date, population data for coastal and inland Remoteness Areas have been developed only for 2001.

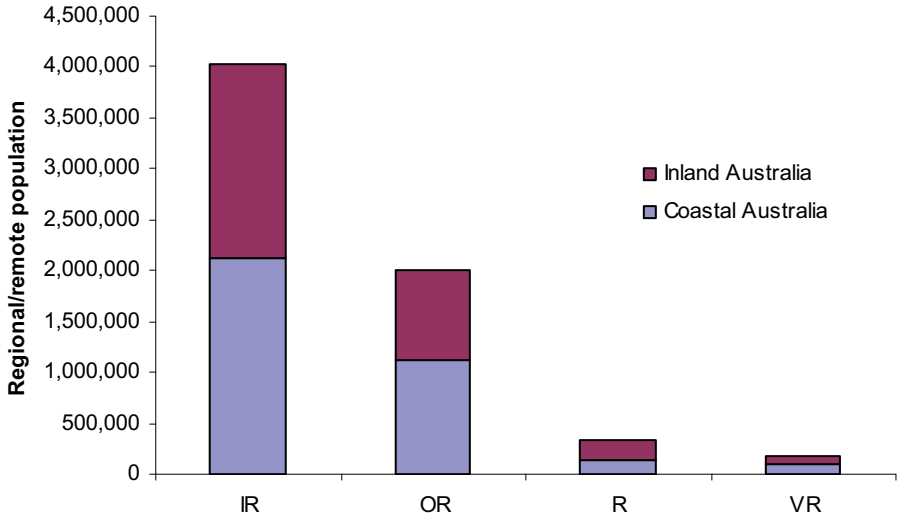
Table 9.2: Population in each inland and coastal Remoteness Area, by jurisdiction, 2001

	MC	IR	OR	R	VR	Regional and remote	Australia
Inland							
NSW	n.a.	652,055	348,014	38,813	7,631	1,046,513	n.a.
Vic	n.a.	815,981	187,656	3,533	n.a.	1,007,170	n.a.
Qld	n.a.	287,866	168,447	63,475	28,992	548,779	n.a.
WA	n.a.	38,618	85,223	24,205	19,438	167,483	n.a.
SA	n.a.	101,738	74,252	11,056	9,060	196,106	n.a.
Tas	n.a.	1,635	23,919	226	n.a.	25,780	n.a.
ACT	n.a.	657	n.a.	n.a.	n.a.	657	n.a.
NT	n.a.	n.a.	n.a.	37,952	20,977	58,929	n.a.
Other	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Australia	*n.a.*	*1,898,549*	*887,511*	*179,259*	*86,098*	*3,051,417*	*n.a.*
Coastal							
NSW	n.a.	696,568	134,902	467	366	832,303	n.a.
Vic	n.a.	201,937	65,065	2,436	n.a.	269,438	n.a.
Qld	n.a.	650,662	477,049	28,979	23,729	1,180,418	n.a.
WA	n.a.	193,607	100,946	66,533	29,937	391,023	n.a.
SA	n.a.	85,466	104,623	34,553	5,718	230,360	n.a.
Tas	n.a.	298,359	136,899	8,146	2,611	446,015	n.a.
ACT	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
NT	n.a.	n.a.	106,842	3,956	28,041	138,839	n.a.
Other	n.a.	542	n.a.	n.a.	2,042	2,584	n.a.
Australia	*n.a.*	*2,127,141*	*1,126,326*	*145,069*	*92,444*	*3,490,980*	*n.a.*
Total							
NSW	4,696,401	1,348,623	482,916	39,280	7,997	1,878,816	6,575,217
Vic	3,528,119	1,017,917	252,721	5,969	n.a.	1,276,607	4,804,726
Qld	1,899,749	938,527	645,495	92,454	52,721	1,729,197	3,628,946
WA	1,342,653	232,225	186,169	90,738	49,375	558,506	1,901,159
SA	1,085,262	187,204	178,876	45,608	14,778	426,466	1,511,728
Tas	n.a.	299,994	160,818	8,372	2,611	471,795	471,795
ACT	318,660	657	n.a.	n.a.	n.a.	657	319,317
NT	n.a.	n.a.	106,842	41,908	49,018	197,768	197,768
Other	n.a.	542	n.a.	n.a.	2,042	2,584	2,584
Australia	**12,870,844**	**4,025,689**	**2,013,837**	**324,329**	**178,542**	**6,542,396**	**19,413,240**



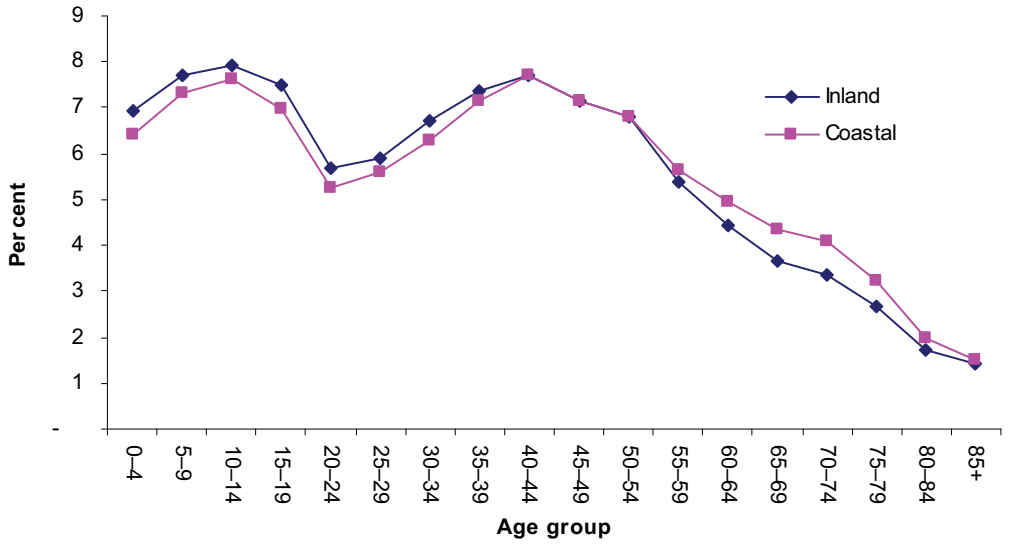
Source: AIHW national population databases.

Figure 9.1: Population in each state living in coastal and inland areas (excludes Major Cities) 2001



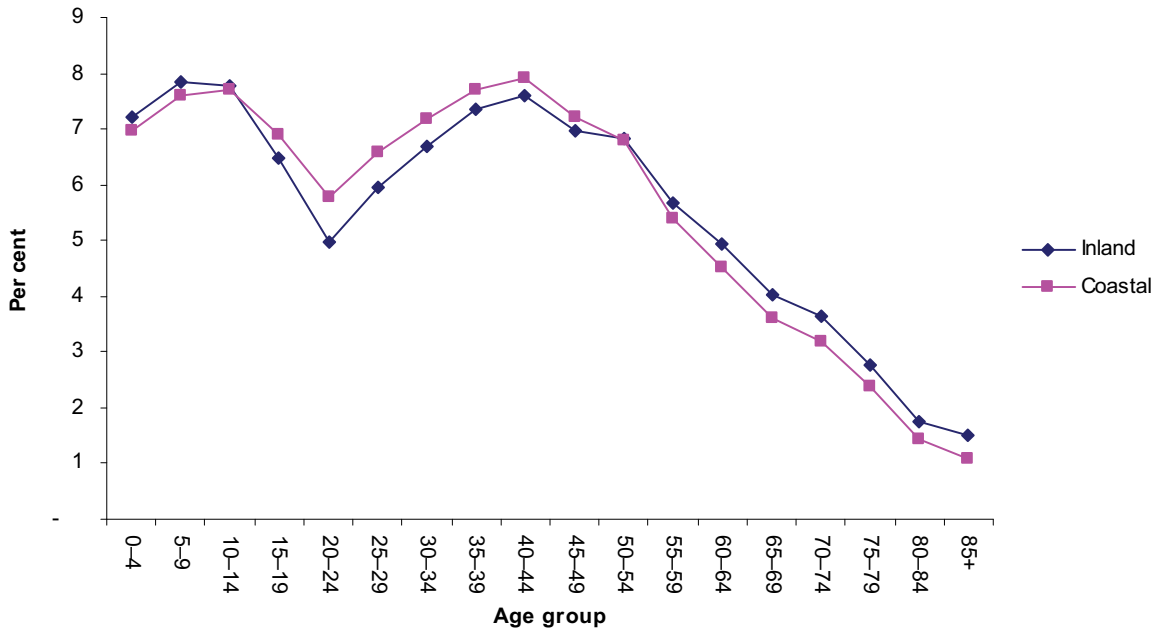
Source: AIHW national population databases.

Figure 9.2: Population in each remoteness category living in coastal and inland areas (excludes Major Cities) 2001



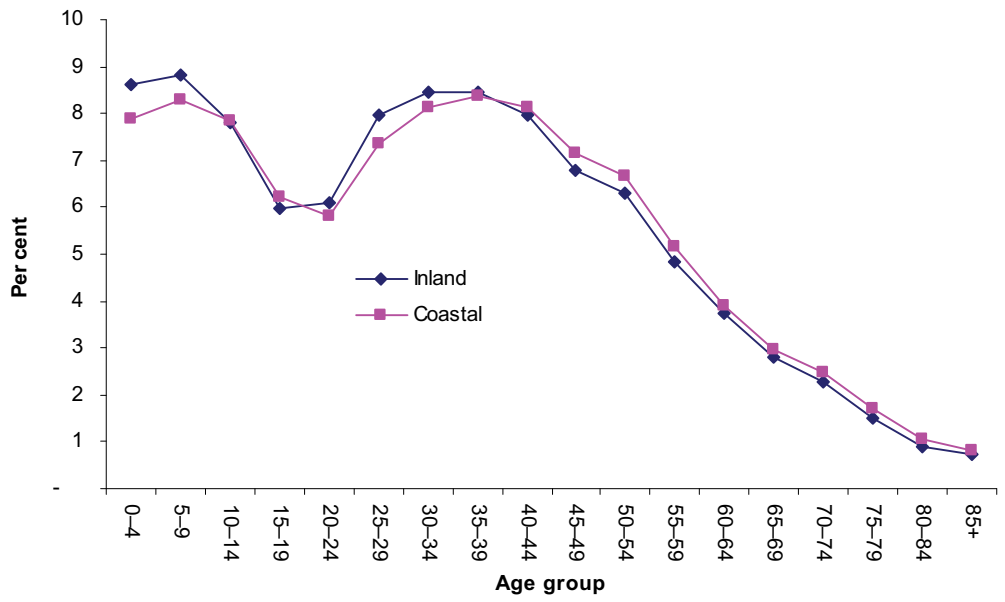
Source: AIHW national population databases.

Figure 9.3: Age structure of the population in inland and coastal Inner Regional areas, 2001



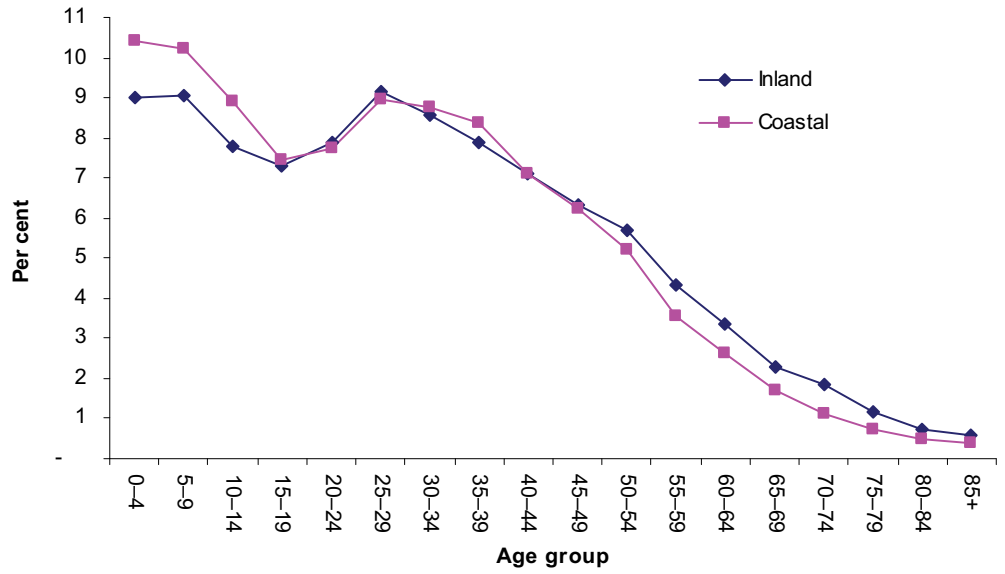
Source: AIHW national population databases.

Figure 9.4: Age structure of the population in inland and coastal Outer Regional areas, 2001



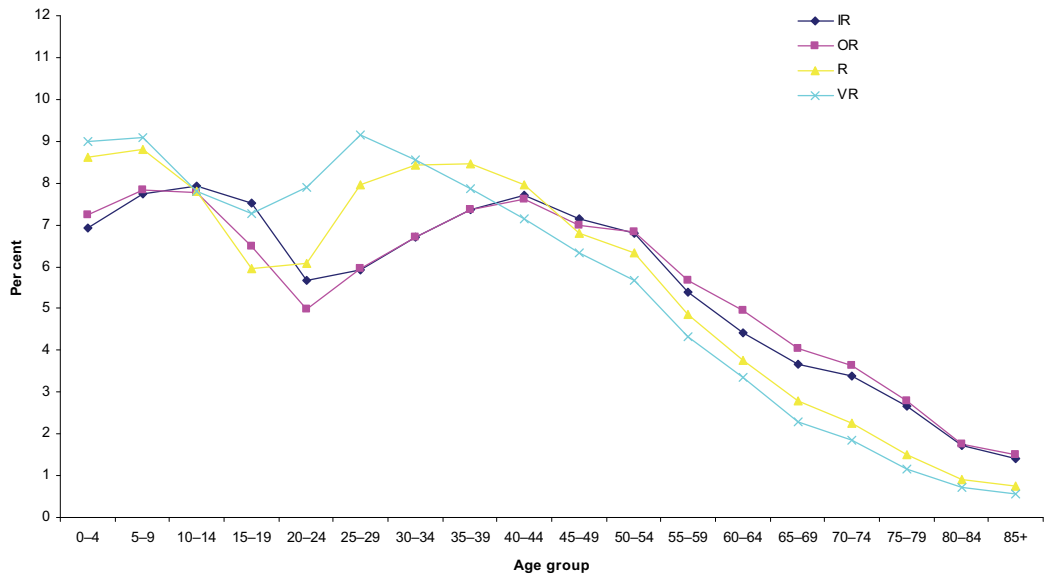
Source: AIHW national population databases.

Figure 9.5: Age structure of the population in inland and coastal Remote areas, 2001



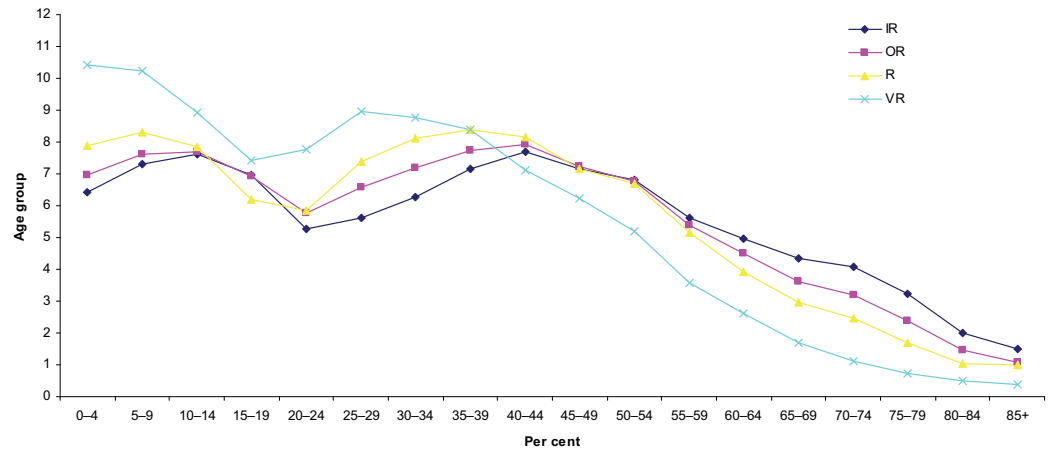
Source: AIHW national population databases.

Figure 9.6: Age structure of the population in inland and coastal Very Remote areas, 2001



Source: AIHW national population databases.

Figure 9.7: Age structure of the population in inland areas of Australia, by Remoteness Area, 2001



Source: AIHW national population databases.

Figure 9.8: Age structure of the population in coastal areas of Australia, by Remoteness Area, 2001

9.4 Indigenous Australian and non-Indigenous Australian populations

Of the 19,413,237 people who were living in Australia in 2001, 12,870,393 (66%) lived in Major Cities, 3,051,864 (16%) lived in inland areas, and 3,490,980 (18%) lived in coastal areas.

In 2001, 1.1% of those living in Major Cities were Indigenous Australians, compared with 4.5% and 5.2% in inland and coastal areas respectively. While 30% of the Indigenous Australian population lived in Major Cities, 30% lived in inland areas, while 40% lived in coastal areas.

There is a certain amount of symmetry in the distribution of the population in inland and coastal areas; while 10%, 5%, 1% and about 0.5% of the Australian population lived in inland Inner Regional, Outer Regional, Remote and Very Remote areas, the corresponding figures in coastal areas were 11%, 6%, 1% and about 0.5%.

The distribution of the Indigenous Australian population across these areas was relatively even, with 9%, 9%, 5% and 7% living in Inner Regional, Outer Regional, Remote and Very Remote parts of inland Australia, and 11%, 14%, 4% and 10% living in coastal areas of corresponding remoteness.

As remoteness increased in both inland and coastal areas, so did the proportion of the population who were Indigenous Australian. While Indigenous Australians were about 1% of the Major Cities population, in inland and coastal areas they comprised:

- 2% and 2% of the population in Inner Regional areas
- 5% and 6% of the population in Outer Regional areas
- 14% and 12% of the population in Remote areas
- 37% and 51% of the population in Very Remote areas.

Table 9.3: Numbers of Indigenous Australians and non-Indigenous Australians living in each coastal and Remoteness Area, 2001

		Inland				Coastal				
	Major Cities	Inner Regional	Outer Regional	Remote	Very Remote	Inner Regional	Outer Regional	Remote	Very Remote	Australia
					Males (number)					
Indigenous	67,764	19,985	20,829	12,543	15,931	26,075	31,731	9,015	23,653	227,526
Non-Indigenous	6,275,545	924,196	431,895	82,615	30,620	1,025,241	540,357	67,370	25,286	9,403,125
All Australians	6,343,308	944,181	452,724	95,158	46,551	1,051,316	572,088	76,385	48,939	9,630,651
					Females (number)					
Indigenous	70,221	19,913	21,266	12,303	15,773	26,650	32,496	8,849	23,523	230,994
Non-Indigenous	6,456,863	934,905	413,519	71,797	23,774	1,049,175	521,742	59,836	19,982	9,551,592
All Australians	6,527,084	954,818	434,785	84,100	39,547	1,075,825	554,238	68,684	43,505	9,782,586
					Persons (number)					
Indigenous	137,985	39,898	42,095	24,846	31,705	52,725	64,228	17,863	47,176	458,520
Non-Indigenous	12,732,408	1,859,102	845,413	154,412	54,394	2,074,416	1,062,098	127,206	45,268	18,954,717
All Australians	12,870,393	1,898,999	887,509	179,258	86,098	2,127,141	1,126,326	145,069	92,444	19,413,237
					Per cent of the population in each area					
Indigenous	1	2	5	14	37	2	6	12	51	2
					Per cent of the national sub-population					
Indigenous	30	9	9	5	7	11	14	4	10	100
Non-Indigenous	67	10	4	1	0	11	6	1	0	100
All Australians	66	10	5	1	0	11	6	1	0	100

Note: In this table, the total population in Major Cities is smaller by about 450 than that described in Table 9.2, while the population in inland Inner Regional areas is larger by about 450. This discrepancy would disappear in a more highly refined classification.

Source: Developed from ABS population data and AIHW national population databases.

9.5 Socioeconomic status

Socioeconomic status is important because it influences mortality and health generally. Populations with low socioeconomic status have higher rates of death than populations with high socioeconomic status. Differences in the socioeconomic status of coastal and inland Remoteness Areas populations may explain some of the mortality differences between areas.

Reporting relies on the Australian Bureau of Statistics (ABS) Socioeconomic Indexes for Areas (SEIFA) index of disadvantage.

This description of socioeconomic status in coastal and inland Remoteness Areas uses data from 1,333 Statistical Local Areas. There were 12 SLAs for which it was not possible to match details of SEIFA with details of coastality and remoteness, and consequently these SLAs have been excluded from the analysis of SEIFA.

Table 9.4: SEIFA index of disadvantage for Remoteness Areas in coastal and inland regions, 2001

	Number of SLAs	Mean	Mean (weighted)	90th%	75th%	Median	25th%
National	1,333	999	n.p.	1,087	1,046	1,000	963
Major Cities	568	1,030	1,014	1,114	1,079	1,041	989
Inland							
Inner Regional	175	1,002	993	1,059	1,025	997	976
Outer Regional	164	981	979	1,033	1,005	980	959
Remote	55	982	978	1,030	998	984	968
Very Remote	47	885	858	997	979	921	812
Coastal							
Inner Regional	112	985	977	1,060	1,016	980	955
Outer Regional	156	980	971	1,050	1,013	977	951
Remote	28	975	974	1,033	1,007	978	957
Very Remote	28	852	830	1,042	995	880	708

Notes

1. SLAs included in the analysis have populations of diverse size.
2. 90th%, 75th% and 25th% represent the 90th, 75th and 25th percentiles.
3. The weighted mean SEIFA score is the sum of the SEIFA scores for SLAs weighted according to the size of the population in each SLA in relation to the size of the total population for that area (for example, inland Inner Regional).
4. Excludes 12 SLAs.

Source: ABS SEIFA index.

Table 9.4 reports the mean, median, quartiles and 90th percentiles of the SEIFA index of disadvantage for SLAs in each of the inland and coastal Remoteness Areas. A population weighted mean has also been reported because the population size of the SLAs differs substantially. As it turns out, the weighted means are not substantially different from the crude means.

Figure 9.10 better illustrates the inter-regional SEIFA differences.

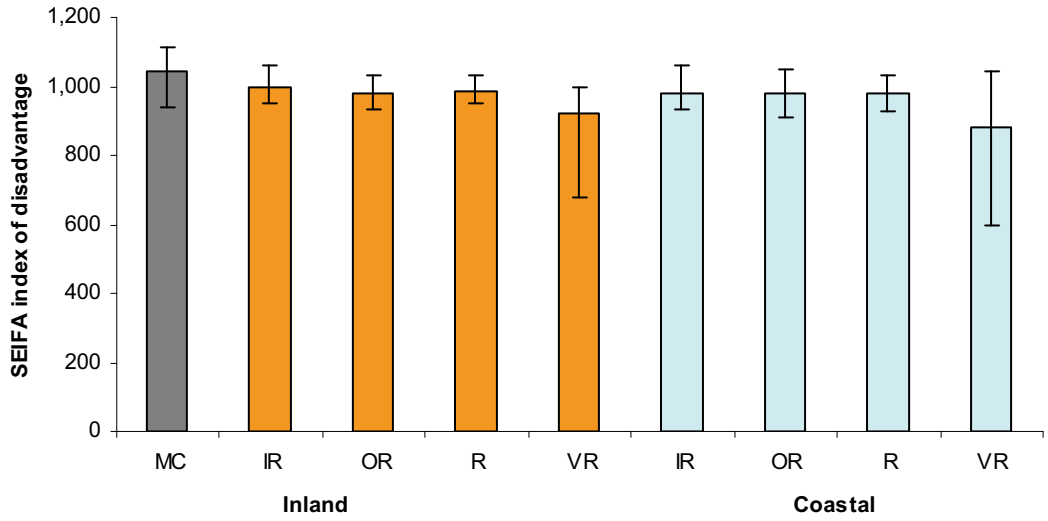
Major Cities SLAs have the highest median SEIFA score (1,041).

Inland Inner Regional area SLAs have a slightly higher median SEIFA score (997) than coastal Inner Regional area SLAs (980).

Inland Outer Regional and Remote area SLAs have slightly lower median SEIFA scores (980 and 984—similar to coastal Inner Regional SLAs).

Coastal Outer Regional and Remote area SLAs have median SEIFA scores (977 and 978 respectively) that are similar to those of Coastal Inner Regional SLAs (980).

Median SEIFA scores for Very Remote area SLAs are substantially lower than in the other areas (921 and 880 for inland and coastal SLAs respectively).



Source: ABS SEIFA index.

Figure 9.9: Median, 90th and 10th percentiles of the SEIFA index of disadvantage, for inland and coastal Remoteness Areas, 2001

Table 9.5 and Figure 9.10 describe the percentage of SLAs in each area that are in each national quartile. For example, there are 334 SLAs in Australia that have SEIFA scores in the lowest quartile (that is, 75% of SLAs have higher SEIFA scores). Of these, 95 are in Major Cities, 28 in inland Inner Regional areas, 37 in coastal Inner Regional areas and 18 in coastal Very Remote areas. The 18 in coastal Very Remote areas equate to 64% of all coastal Very Remote SLAs, indicating that two-thirds of the SLAs in this area are amongst the most disadvantaged 25% of SLAs in Australia.

Table 9.5 and Figure 9.10 provide more perspective to an understanding of the differences between the areas. Inter-area comparisons echo Table 9.4 and Figure 9.9, showing lower levels of disadvantage in Major Cities SLAs than in the other areas, slightly less disadvantage in inland than in coastal Inner Regional SLAs, similarities between coastal Inner Regional, Outer Regional and Remote area SLAs, and the greatest disadvantage in Very Remote inland and coastal areas.

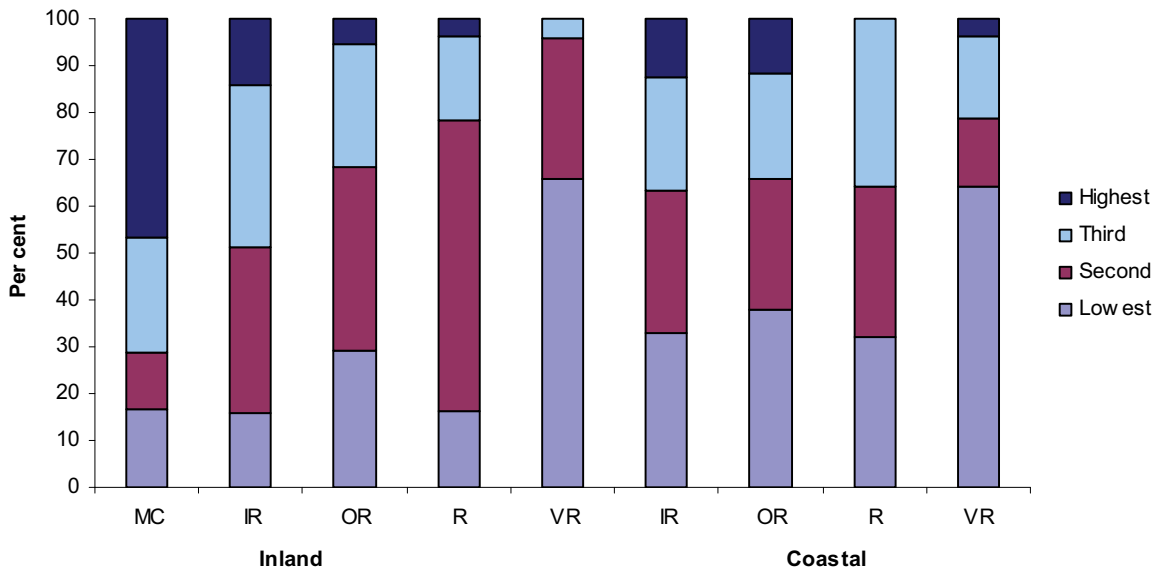
Table 9.5: Number and percentage of SLAs in the lowest, second, third and highest SEIFA index of disadvantage quartiles, for Remoteness Areas in coastal and inland regions, 2001

	Lowest	Second	Third	Highest	Lowest	Second	Third	Highest
	Number				Per cent			
National	334	334	331	334	25	25	25	25
Major Cities	95	69	139	265	17	12	24	47
Inland								
Inner Regional	28	62	60	25	16	35	34	14
Outer Regional	48	64	43	9	29	39	26	5
Remote	9	34	10	2	16	62	18	4
Very Remote	31	14	2	0	66	30	4	0
Coastal								
Inner Regional	37	34	27	14	33	30	24	13
Outer Regional	59	44	35	18	38	28	22	12
Remote	9	9	10	0	32	32	36	0
Very Remote	18	4	5	1	64	14	18	4

Notes

1. SLAs included in the analysis have populations of diverse size.
2. The number of SLAs is a count of the number of SLAs in each area that are in each quartile of the national population of SLAs. For example, one-quarter of SLAs in Australia had a SEIFA index lower than 963 (the 25th percentile). In Inland Very Remote areas, 31 SLAs (that is, 66% of all SLAs in inland Very Remote areas) would be included in this lowest national quartile.

Source: ABS SEIFA index.



Source: ABS SEIFA index.

Figure 9.10: Percentage of SLAs from each area in the lowest, second, third and highest national quartiles of the SEIFA index of disadvantage, 2001

9.6 Mortality in coastal and inland areas

Approximately 64% of deaths are of people in Major Cities (Table 9.6). Ten per cent and 13% respectively are of people in inland and coastal Inner Regional areas, 5% and 6% respectively from inland and coastal Outer Regional areas, and about 2% from inland and coastal remote areas combined.

Compared to death rates in Major Cities (Table 96, Figures 9.11 and 9.12), those in inland Inner Regional areas were 1.08 times as high, while in coastal Inner Regional areas they were 1.03 times as high (that is, lower than in inland Inner Regional areas). This is a relatively small yet statistically significant difference between these two Inner Regional areas.

Death rates in inland and coastal Outer Regional areas were both 1.13 times those in Major Cities.

Death rates in inland and coastal Remote areas were, respectively, 1.34 and 1.09 times those in Major Cities.

Death rates in Very Remote inland and coastal areas were, respectively, 1.59 and 1.76 times those in Major Cities areas.

The absolute magnitude of these differences in death rates can be expressed as the number of deaths in excess of what would be expected if Australian Major Cities rates applied everywhere.

However, in inland Inner Regional areas there were 980 more deaths in 2001 than would have been expected if Major Cities rates had been experienced. This compares with 503 excess deaths in coastal Inner Regional areas.

In inland Outer Regional areas, there were 777 excess deaths, while in coastal Outer Regional areas there were 826 excess deaths.

In inland and coastal Remote areas there were, respectively, 267 and 59 excess deaths in 2001.

In inland and coastal Very Remote areas there were, respectively, 188 and 194 excess deaths in 2001.

If analysis is restricted to deaths of people younger than 65 years of age (Figures 9.13 and 9.14), the inter-regional patterns generally hold.

The percentage of all excess deaths in inland and coastal areas of persons who were aged younger than 65 years was:

- 34% and 73% respectively in Inner Regional areas
- 34% and 49% respectively, in Outer Regional areas
- 55% and 79% respectively in Remote areas
- 80% and 92% respectively in Very Remote areas.

Tables 9.7 and 9.8 describe age-specific mortality for a number of life stages. The overall inland/coastal differences, apparent overall and for those younger than 65 years, also hold for life stages.

While inland/coastal comparisons in each of the states show overall similarity to the overall national pattern, there are differences in detail. These are described in Tables 9.9–9.15 and Figures 9.15–9.28.

Table 9.6: Population, annual deaths and annual excess deaths in each area, 2001

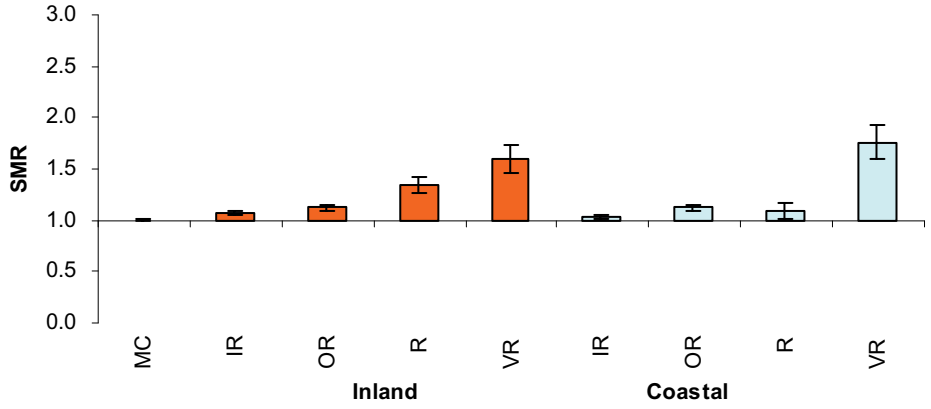
		Inland				Coastal			
	MC	IR	OR	R	VR	IR	OR	R	VR
Population									
Males	6,343,536	943,953	452,725	95,159	46,551	1,051,316	572,088	76,385	48,939
Females	6,527,307	954,596	434,786	84,101	39,547	1,075,825	554,238	68,684	43,505
Persons	12,870,843	1,898,549	887,511	179,259	86,098	2,127,141	1,126,326	145,069	92,444
Deaths									
Males	41,386	6,956	3,768	635	318	8,558	4,162	435	280
Females	40,153	6,400	3,136	418	187	7,541	3,247	312	168
Persons	81,538	13,355	6,903	1,053	505	16,099	7,409	747	448
SMRs									
Males	1.00	1.09	1.15	1.38	1.62	1.03	1.14	1.07	1.77
Females	1.00	1.07	1.10	1.29	1.55	1.03	1.11	1.11	1.75
Persons	1.00	1.08	1.13	1.34	1.59	1.03	1.13	1.09	1.76
'Excess' deaths									
Males	0	574	499	174	122	261	516	29	122
Females	0	406	278	93	66	242	311	30	72
Persons	0	980	777	267	188	503	826	59	194
SMRs (0–64 yrs)									
Males	1.00	1.12	1.22	1.64	2.37	1.13	1.28	1.23	2.56
Females	1.00	1.16	1.22	1.60	2.47	1.11	1.24	1.26	2.90
Persons	1.00	1.13	1.22	1.62		1.13	1.26	1.24	
'Excess' deaths (0–64 yrs)									
Males	0	196	173	101	103	246	273	30	113
Females	0	140	95	45	48	119	128	17	65
Persons	0	336	268	147	151	365	402	47	178

Notes

1. SMRs and 'excess' deaths are calculated using age-and sex-specific Major Cities rates in 2001 as the standard.
2. 'Excess' deaths indicate how many more deaths occurred than if death rates in the area had been the same as in Major Cities. Negative numbers of 'excess' deaths indicate fewer deaths than expected.

Source: AIHW mortality database.

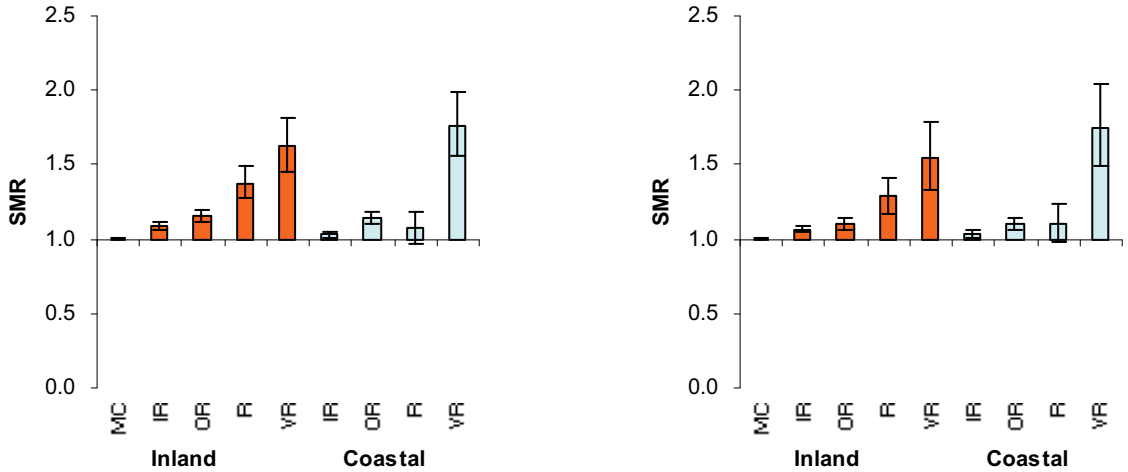
Australia — total population



Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.11: Ratio of observed to expected deaths, by remoteness and coastality, persons, 2001

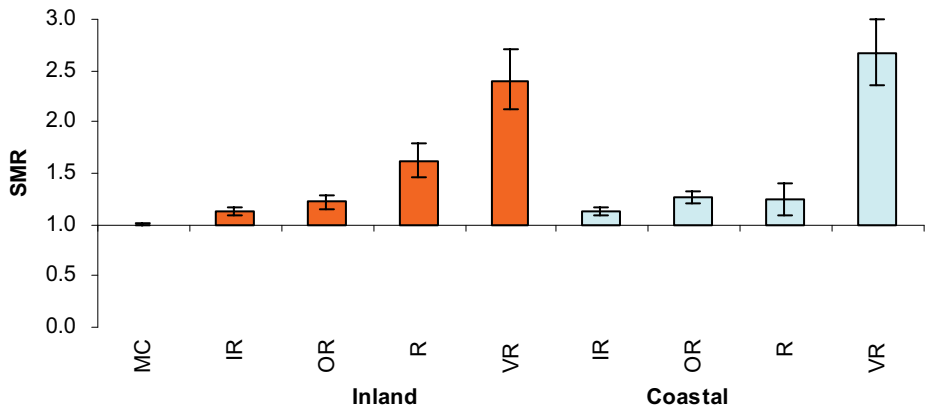


Notes

1. SMRs calculated using Major Cities rates in the period 2001 as the standard.
2. SMRs presented here allow comparison between areas, but not between the sexes.

Source: AIHW mortality database.

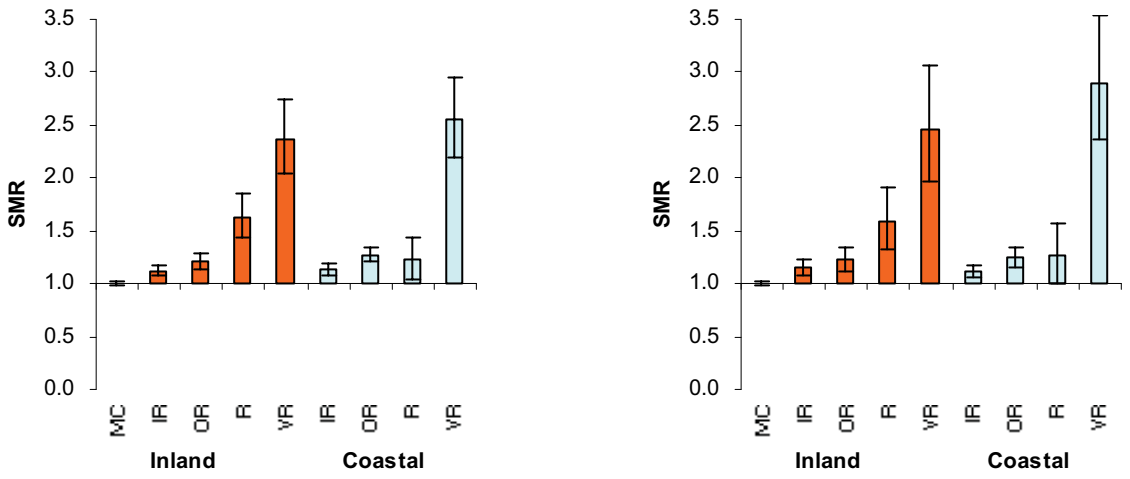
Figure 9.12: Ratio of observed to expected deaths, by remoteness and coastality, males and females, 2001



Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.13: Ratio of observed to expected deaths, by region, 0–64 year old persons, 2001



Notes

1. SMRs calculated using Major Cities rates in the period 2001 as the standard.
2. SMRs presented here allow comparison between areas, but not between the sexes.

Source: AIHW mortality database.

Figure 9.14: Ratio of observed to expected deaths, by region, 0–64 year old males and females, 2001

Table 9.7: Life-stage SMRs, by Remoteness Areas and coastality, 2001

Life stage (years)	MC	Inland				Coastal			
		IR	OR	R	VR	IR	OR	R	VR
					SMRs				
0–4	1.0	1.2	1.0	1.9	2.2	1.0	1.3	1.2	2.9
5–14	1.0	1.1	1.3	2.5	1.3	1.3	1.0	0.4	1.4
15–24	1.0	1.7	2.0	3.1	2.9	1.5	1.6	2.7	3.2
25–44	1.0	1.1	1.2	1.7	3.5	1.2	1.3	1.4	3.2
45–64	1.0	1.1	1.2	1.5	2.0	1.1	1.2	1.1	2.4
65–74	1.0	1.1	1.2	1.3	1.8	1.0	1.1	1.0	1.9
75+	1.0	1.1	1.1	1.2	0.9	1.0	1.1	1.0	0.8

Note: SMRs have been standardised to the 2001 Major Cities age-specific death rates. This means that SMRs in this table are directly comparable to the SMR in Major Cities (1.00).

Source: AIHW mortality database.

Table 9.8: Life-stage 'excess' deaths, by Remoteness Areas and coastality, 2001

Life stage (years)	MC	Inland				Coastal			
		IR	OR	R	VR	IR	OR	R	VR
					Excess deaths				
0–4	0	23	–3	16	11	7	23	3	20
5–14	0	2	4	5	0	11	–1	–2	1
15–24	0	79	44	21	12	59	37	13	14
25–44	0	55	51	37	63	117	91	17	61
45–64	0	178	171	68	66	171	252	16	81
65–74	0	148	198	55	49	37	138	5	39
75+	0	496	311	65	–12	101	286	7	–24

Note: SMRs have been standardised to the 2001 Major Cities age-specific death rates. This means that SMRs in this table are directly comparable to the SMR in Major Cities (1.00).

Source: AIHW mortality database.

Mortality in States and Territories

Not all states have the full range of inland and coastal Inner Regional, Outer Regional, Remote and Very Remote areas.

There is a tendency for SMRs to be lower in coastal Inner Regional areas compared with inland Inner Regional areas. This may, at least partially, reflect retirement migration from Major Cities of wealthier individuals with lower risk of mortality.

Table 9.9: Population, annual deaths, SMRs and annual 'excess' deaths in each area, New South Wales, 2001

		Inland				Coastal			
	MC	IR	OR	R	VR	IR	OR	R	VR
Population									
Males	2,325,479	324,893	177,127	20,508	4,119	344,225	67,441	232	178
Females	2,370,922	327,162	170,887	18,305	3,512	352,343	67,461	235	188
Persons	4,696,401	652,055	348,014	38,813	7,631	696,568	134,902	467	366
Deaths									
Males	15,248	2,289	1,566	171	25	3,093	686	n.p.	n.p.
Females	14,500	2,239	1,299	128	19	2,916	512	n.p.	n.p.
Persons	29,748	4,528	2,864	299	44	5,709	1,198	n.p.	n.p.
SMRs									
Males	1.01	1.09	1.19	1.40	1.24	1.05	1.09	n.p.	n.p.
Females	0.99	1.11	1.10	1.34	1.55	1.00	1.02	n.p.	n.p.
Persons	1.00	1.10	1.15	1.37	1.36	1.03	1.06	n.p.	n.p.
'Excess' deaths									
Males	106	185	255	49	5	147	57	n.p.	n.p.
Females	–147	219	118	32	7	0	11	n.p.	n.p.
Persons	–41	404	372	81	12	147	68	n.p.	n.p.
SMRs (0–64 yrs)									
Males	1.01	1.10	1.23	1.73	1.49	1.21	1.28	n.p.	n.p.
Females	0.98	1.19	1.14	1.82	1.82	1.14	1.30	n.p.	n.p.
Persons	1.00	1.14	1.20	1.76	1.59	1.19	1.28	n.p.	n.p.
'Excess' deaths (0–64 yrs)									
Males	56	57	72	26	4	126	34	n.p.	n.p.
Females	–33	59	23	14	3	50	21	n.p.	n.p.
Persons	23	116	95	41	6	176	55	n.p.	n.p.

Notes

1. SMRs and 'excess' deaths are calculated using age-and sex-specific Major Cities rates in 2001 as the standard.
2. 'Excess' deaths indicate how many more deaths occurred than if death rates in the area had been the same as in Major Cities. Negative numbers of 'excess' deaths indicate fewer deaths than expected.

Source: AIHW mortality database.

Table 9.10: Population, annual deaths, SMRs and annual 'excess' deaths in each area, Victoria, 2001

		Inland				Coastal			
	MC	IR	OR	R	VR	IR	OR	R	VR
Population									
Males	1,731,713	404,188	94,279	1,807	—	100,362	32,700	1,246	—
Females	1,796,405	411,793	93,377	1,726	—	101,575	32,365	1,190	—
Persons	3,528,119	815,981	187,656	3,533	—	201,937	65,065	2,436	—
Deaths									
Males	11,232	3,197	830	20	—	779	331	12	—
Females	11,199	2,804	741	17	—	770	291	12	—
Persons	22,430	6,002	1,571	37	—	1,549	622	24	—
SMRs									
Males	0.98	1.11	1.07	1.19	n.a.	0.97	1.19	1.14	n.a.
Females	1.01	1.04	1.03	1.07	n.a.	1.08	1.20	1.61	n.a.
Persons	0.99	1.08	1.05	1.13	n.a.	1.02	1.19	1.33	n.a.
'Excess' deaths									
Males	–248	325	52	3	n.a.	–24	52	1	n.a.
Females	70	98	19	1	n.a.	54	48	4	n.a.
Persons	–177	422	71	4	n.a.	31	100	6	n.a.
SMRs (0–64 yrs)									
Males	0.95	1.13	1.12	0.43	n.a.	1.00	1.26	1.31	n.a.
Females	1.00	1.14	1.06	1.80	n.a.	1.12	1.29	1.97	n.a.
Persons	0.97	1.13	1.10	0.90	n.a.	1.04	1.27	1.54	n.a.
'Excess' deaths (0–64 yrs)									
Males	–137	91	20	–2	n.a.	1	16	1	n.a.
Females	0	53	5	1	n.a.	12	10	1	n.a.
Persons	–137	144	25	–1	n.a.	12	25	2	n.a.

Notes

1. SMRs and 'excess' deaths are calculated using age-and sex-specific Major Cities rates in 2001 as the standard.
2. 'Excess' deaths indicate how many more deaths occurred than if death rates in the area had been the same as in Major Cities. Negative numbers of 'excess' deaths indicate fewer deaths than expected.

Source: AIHW mortality database.

Table 9.11: Population, annual deaths, SMRs and annual 'excess' deaths in each area, Queensland, 2001

		Inland				Coastal			
	MC	IR	OR	R	VR	IR	OR	R	VR
Population									
Males	934,967	142,886	86,483	34,030	15,452	321,757	242,960	15,463	12,442
Females	964,781	144,980	81,963	29,444	13,540	328,905	234,089	13,516	11,287
Persons	1,899,749	287,866	168,447	63,475	28,992	650,662	477,049	28,979	23,729
Deaths									
Males	6,029	989	658	207	114	2,493	1,495	98	77
Females	5,593	929	512	129	70	2,087	1,143	53	56
Persons	11,622	1,918	1,170	336	184	4,580	2,638	151	133
SMRs									
Males	1.03	1.06	1.14	1.29	1.30	1.00	1.12	1.24	1.91
Females	1.00	1.09	1.17	1.27	1.16	1.01	1.08	1.10	2.35
Persons	1.02	1.07	1.15	1.28	1.24	1.00	1.10	1.18	2.07
'Excess' deaths									
Males	174	57	81	46	26	0	165	19	37
Females	24	76	73	27	9	13	83	5	32
Persons	199	133	155	74	36	13	247	24	69
SMRs (0–64 yrs)									
Males	1.05	1.44	1.34	1.43	1.88	1.12	1.30	1.66	2.87
Females	1.04	1.44	1.40	1.35	1.14	1.03	1.21	1.28	4.27
Persons	1.05	1.44	1.36	1.40	1.64	1.09	1.27	1.54	3.33
'Excess' deaths (0–64 yrs)									
Males	84	48	49	24	23	70	123	18	34
Females	31	32	30	9	2	9	46	4	28
Persons	115	80	79	33	25	80	168	22	62

Notes

1. SMRs and 'excess' deaths are calculated using age-and sex-specific Major Cities rates in 2001 as the standard.
2. 'Excess' deaths indicate how many more deaths occurred than if death rates in the area had been the same as in Major Cities. Negative numbers of 'excess' deaths indicate fewer deaths than expected.

Source: AIHW mortality database.

Table 9.12: Population, annual deaths, SMRs and annual 'excess' deaths in each area, Western Australia, 2001

		Inland				Coastal			
	MC	IR	OR	R	VR	IR	OR	R	VR
Population									
Males	663,369	19,645	44,603	13,143	11,020	97,103	51,043	35,413	16,218
Females	679,284	18,972	40,620	11,062	8,418	96,504	49,903	31,120	13,719
Persons	1,342,653	38,618	85,223	24,205	19,438	193,607	100,946	66,533	29,937
Deaths									
Males	3,918	136	277	95	61	625	329	125	85
Females	3,768	103	220	45	34	509	266	85	36
Persons	7,686	239	497	139	95	1,133	594	210	121
SMRs									
Males	0.96	1.10	1.21	1.34	1.78	0.96	0.97	0.93	1.56
Females	0.95	1.05	1.18	0.90	1.89	0.99	0.98	1.04	1.20
Persons	0.96	1.08	1.20	1.16	1.82	0.98	0.97	0.97	1.43
'Excess' deaths									
Males	–145	13	49	24	26	–23	–10	–9	30
Females	–188	4	33	–5	16	–6	–6	3	6
Persons	–333	17	82	19	43	–29	–16	–6	36
SMRs (0–64 yrs)									
Males	0.98	1.27	1.17	1.34	2.29	0.93	0.98	1.00	2.25
Females	0.93	0.83	1.76	0.60	2.85	0.95	1.07	1.33	1.96
Persons	0.96	1.12	1.36	1.11	2.45	0.94	1.02	1.10	2.16
'Excess' deaths (0–64 yrs)									
Males	–25	10	13	8	22	–12	–1	0	31
Females	–41	–3	28	–4	12	–5	3	9	11
Persons	–67	6	41	4	35	–16	2	9	42

Notes

1. SMRs and 'excess' deaths are calculated using age-and sex-specific Major Cities rates in 2001 as the standard.
2. 'Excess' deaths indicate how many more deaths occurred than if death rates in the area had been the same as in Major Cities. Negative numbers of 'excess' deaths indicate fewer deaths than expected.

Source: AIHW mortality database.

Table 9.13: Population, annual deaths, SMRs and annual 'excess' deaths in each area, South Australia, 2001

		Inland				Coastal			
	MC	IR	OR	R	VR	IR	OR	R	VR
Population									
Males	530,808	51,117	38,009	5,969	5,150	42,484	53,001	17,721	3,004
Females	554,454	50,620	36,244	5,087	3,911	42,982	51,623	16,832	2,714
Persons	1,085,262	101,738	74,252	11,056	9,060	85,466	104,623	34,553	5,718
Deaths									
Males	4,234	341	360	30	28	319	524	151	18
Females	4,406	320	297	27	14	242	409	130	19
Persons	8,640	661	657	57	42	562	933	282	37
SMRs									
Males	1.04	0.99	1.23	1.05	1.22	0.94	1.29	1.05	1.04
Females	1.06	1.03	1.13	1.19	1.32	0.84	1.16	1.10	1.51
Persons	1.05	1.01	1.18	1.11	1.25	0.89	1.23	1.07	1.24
'Excess' deaths									
Males	155	–4	67	1	5	–21	118	8	1
Females	234	9	34	4	3	–48	58	12	7
Persons	388	6	101	6	8	–69	176	20	7
SMRs (0–64 yrs)									
Males	1.03	0.91	1.30	1.17	1.69	1.22	1.29	0.97	1.24
Females	1.08	0.98	1.13	2.03	2.37	0.96	1.28	1.07	2.57
Persons	1.05	0.93	1.24	1.44	1.88	1.13	1.29	1.00	1.68
'Excess' deaths (0–64 yrs)									
Males	29	–8	20	2	6	16	28	–1	1
Females	43	–1	5	4	5	–2	15	1	4
Persons	72	–10	25	6	11	15	42	0	5

Notes

1. SMRs and 'excess' deaths are calculated using age-and sex-specific Major Cities rates in 2001 as the standard.
2. 'Excess' deaths indicate how many more deaths occurred than if death rates in the area had been the same as in Major Cities. Negative numbers of 'excess' deaths indicate fewer deaths than expected.

Source: AIHW mortality database.

Table 9.14: Population, annual deaths, SMRs and annual 'excess' deaths in each area, Tasmania, 2001

		Inland				Coastal			
	MC	IR	OR	R	VR	IR	OR	R	VR
Population									
Males	n.a.	849	12,224	121	n.a.	145,102	68,550	4,222	1,402
Females	n.a.	786	11,695	105	n.a.	153,257	68,348	3,924	1,209
Persons	n.a.	1,635	23,919	226	n.a.	298,359	136,899	8,146	2,611
Deaths									
Males	n.a.	4	77	1	n.a.	1,248	569	36	6
Females	n.a.	3	67	1	n.a.	1,317	493	23	10
Persons	n.a.	7	145	2	n.a.	2,565	1,061	59	16
SMRs									
Males	n.a.	0.95	0.95	1.61	n.a.	1.17	1.18	1.22	0.51
Females	n.a.	0.87	1.01	1.00	n.a.	1.21	1.21	1.10	1.20
Persons	n.a.	0.91	0.98	1.36	n.a.	1.19	1.19	1.17	0.79
'Excess' deaths									
Males	n.a.	0	–4	1	n.a.	182	86	6	–6
Females	n.a.	0	1	0	n.a.	228	85	2	2
Persons	n.a.	–1	–3	1	n.a.	411	171	9	–4
SMRs (0–64 yrs)									
Males	n.a.	0.99	1.00	1.60	n.a.	1.18	1.29	1.78	0.70
Females	n.a.	0.67	1.35	2.35	n.a.	1.38	1.21	1.10	0.74
Persons	n.a.	0.89	1.12	1.85	n.a.	1.25	1.26	1.55	0.71
'Excess' deaths (0–64 yrs)									
Males	n.a.	0	0	0	n.a.	45	36	6	–1
Females	n.a.	0	4	0	n.a.	54	14	0	0
Persons	n.a.	0	4	0	n.a.	99	50	7	–1

Notes

1. SMRs and 'excess' deaths are calculated using age-and sex-specific Major Cities rates in 2001 as the standard.
2. 'Excess' deaths indicate how many more deaths occurred than if death rates in the area had been the same as in Major Cities. Negative numbers of 'excess' deaths indicate fewer deaths than expected.

Source: AIHW mortality database.

Table 9.15 Population, annual deaths, SMRs and annual 'excess' deaths in each area, Northern Territory, 2001

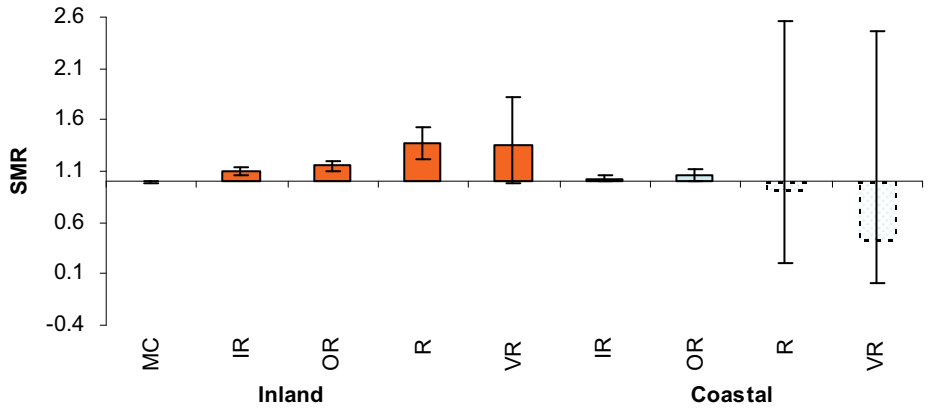
		Inland				Coastal			
	MC	IR	OR	R	VR	IR	OR	R	VR
Population									
Males	n.a.	n.a.	n.a.	19,580	10,811	n.a.	56,393	2,089	14,602
Females	n.a.	n.a.	n.a.	18,372	10,166	n.a.	50,449	1,867	13,439
Persons	n.a.	n.a.	n.a.	37,952	20,977	n.a.	106,842	3,956	28,041
Deaths									
Males	n.a.	n.a.	n.a.	111	90	n.a.	227	10	91
Females	n.a.	n.a.	n.a.	72	50	n.a.	135	7	46
Persons	n.a.	n.a.	n.a.	183	140	n.a.	362	17	137
SMRs									
Males	n.a.	n.a.	n.a.	1.80	2.90	n.a.	1.27	1.63	3.03
Females	n.a.	n.a.	n.a.	1.87	2.58	n.a.	1.32	2.33	2.48
Persons	n.a.	n.a.	n.a.	1.83	2.78	n.a.	1.29	1.86	2.82
'Excess' deaths									
Males	n.a.	n.a.	n.a.	49	59	n.a.	48	4	61
Females	n.a.	n.a.	n.a.	34	31	n.a.	33	4	27
Persons	n.a.	n.a.	n.a.	83	89	n.a.	81	8	88
SMRs (0–64 yrs)									
Males	n.a.	n.a.	n.a.	2.41	4.19	n.a.	1.42	2.64	3.52
Females	n.a.	n.a.	n.a.	2.34	4.65	n.a.	1.44	1.95	3.36
Persons	n.a.	n.a.	n.a.	2.38	4.34	n.a.	1.43	2.43	3.47
'Excess' deaths (0–64 yrs)									
Males	n.a.	n.a.	n.a.	43	47	n.a.	39	6	50
Females	n.a.	n.a.	n.a.	20	27	n.a.	19	2	22
Persons	n.a.	n.a.	n.a.	63	74	n.a.	58	8	72

Notes

1. SMRs and 'excess' deaths are calculated using age-and sex-specific Major Cities rates in 2001 as the standard.
2. 'Excess' deaths indicate how many more deaths occurred than if death rates in the area had been the same as in Major Cities. Negative numbers of 'excess' deaths indicate fewer deaths than expected.

Source: AIHW mortality database.

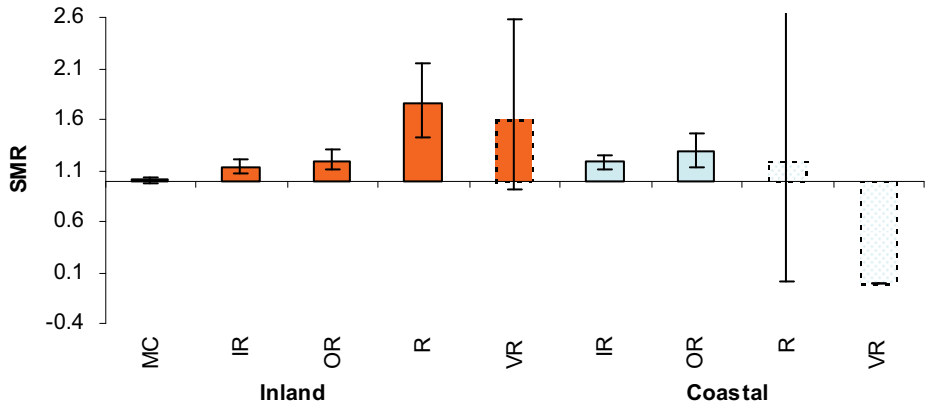
New South Wales



Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.15: Ratio of observed to expected deaths, New South Wales by region, persons, 2001

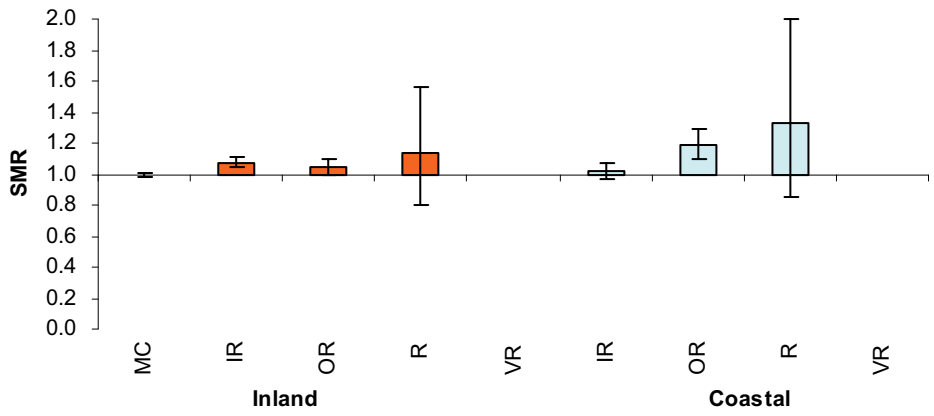


Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.16: Ratio of observed to expected deaths, New South Wales by region, 0–64 year old persons, 2001

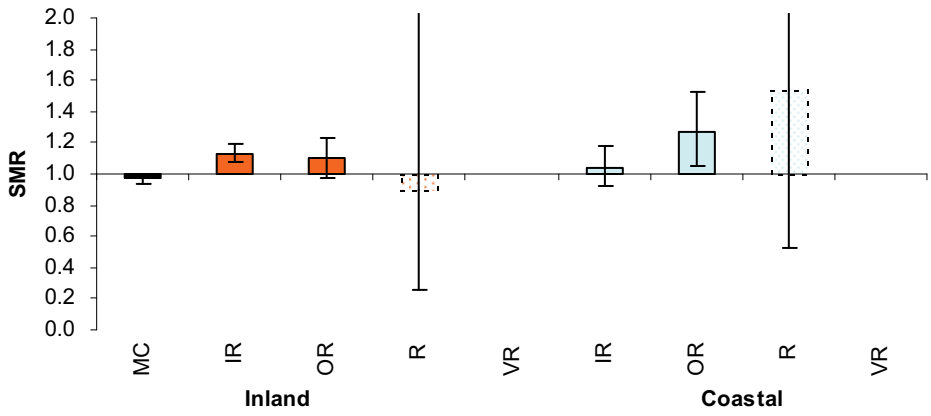
Victoria



Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.17: Ratio of observed to expected deaths, Victoria by region, persons, 2001

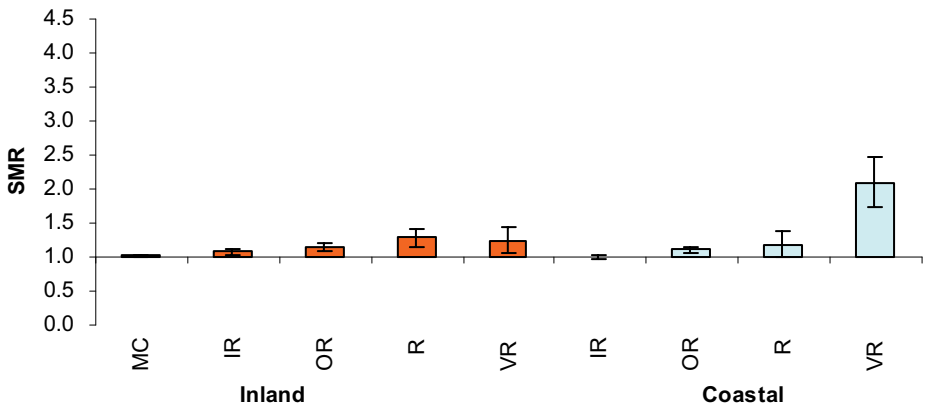


Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.18: Ratio of observed to expected deaths, Victoria by region, 0–64 year old persons, 2001

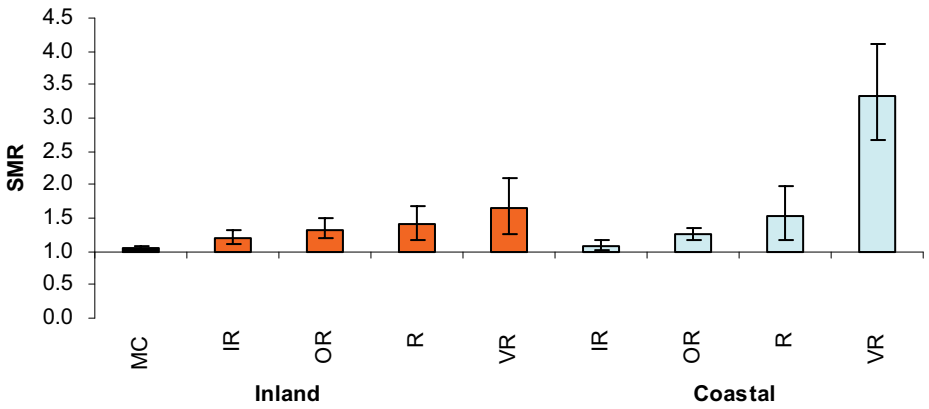
Queensland



Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.19: Ratio of observed to expected deaths, Queensland by region, persons, 2001

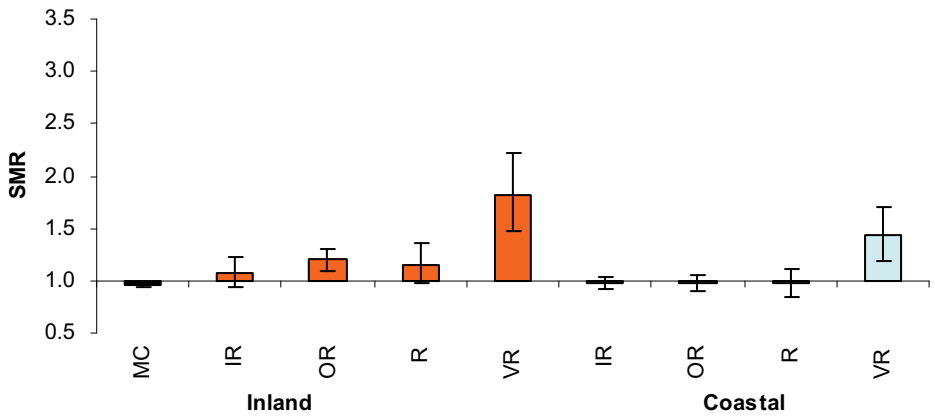


Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.20: Ratio of observed to expected deaths, Queensland by region, 0–64 year old persons, 2001

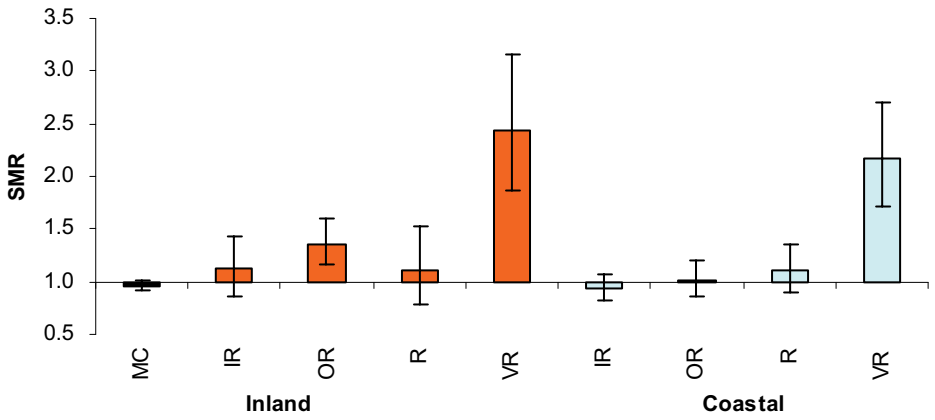
Western Australia



Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.21: Ratio of observed to expected deaths, Western Australia by region, persons, 2001

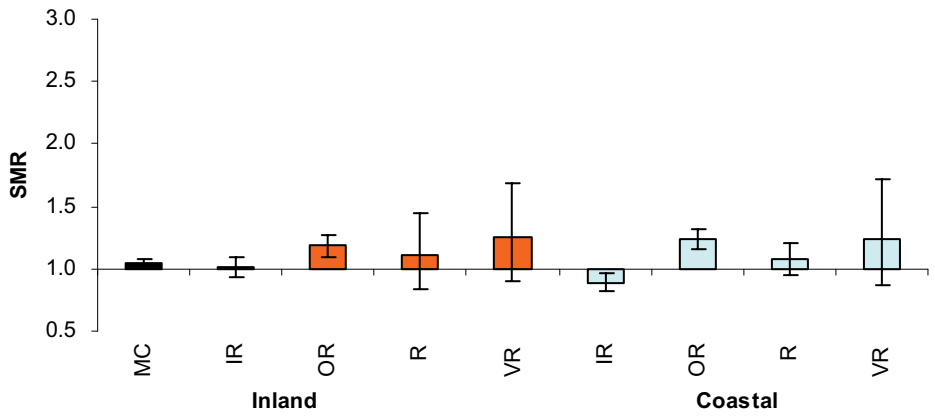


Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.22: Ratio of observed to expected deaths, Western Australia by region, 0–64 year old persons, 2001

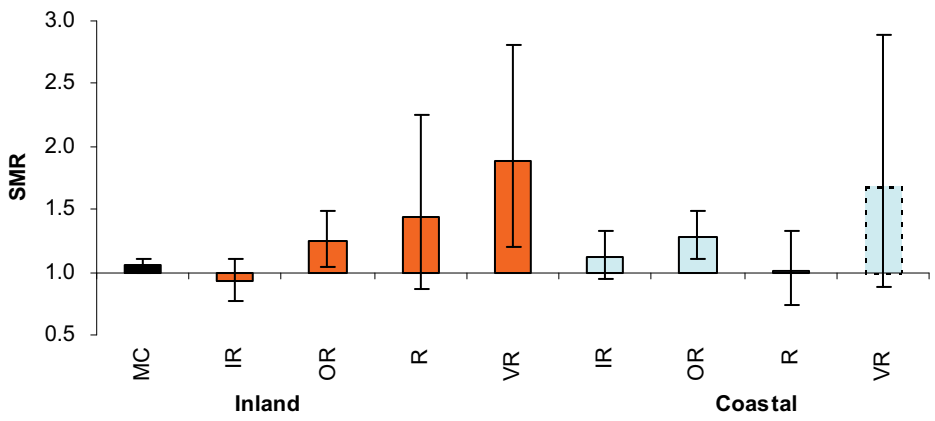
South Australia



Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.23: Ratio of observed to expected deaths, South Australia by region, persons, 2001

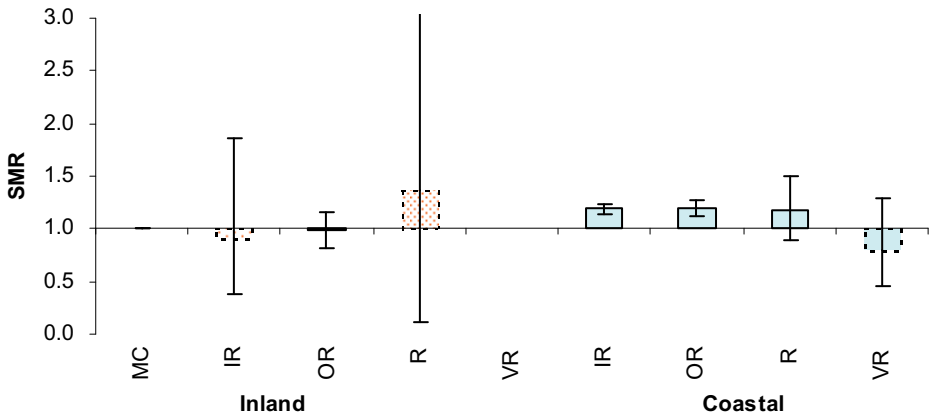


Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.24: Ratio of observed to expected deaths, South Australia by region, 0–64 year old persons, 2001

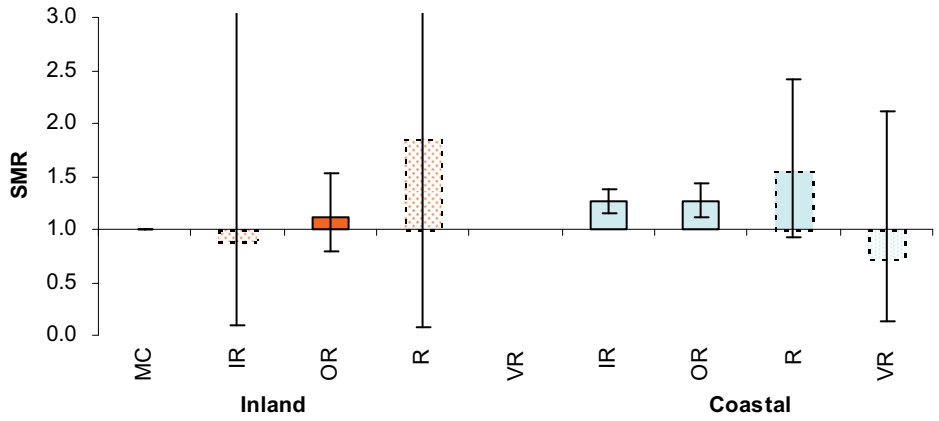
Tasmania



Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.25: Ratio of observed to expected deaths, Tasmania by region, persons, 2001

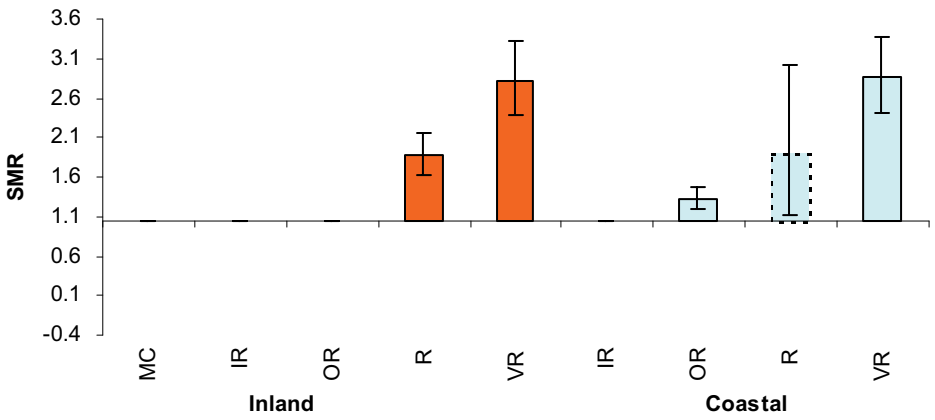


Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.26: Ratio of observed to expected deaths, Tasmania by region, 0–64 year old persons, 2001

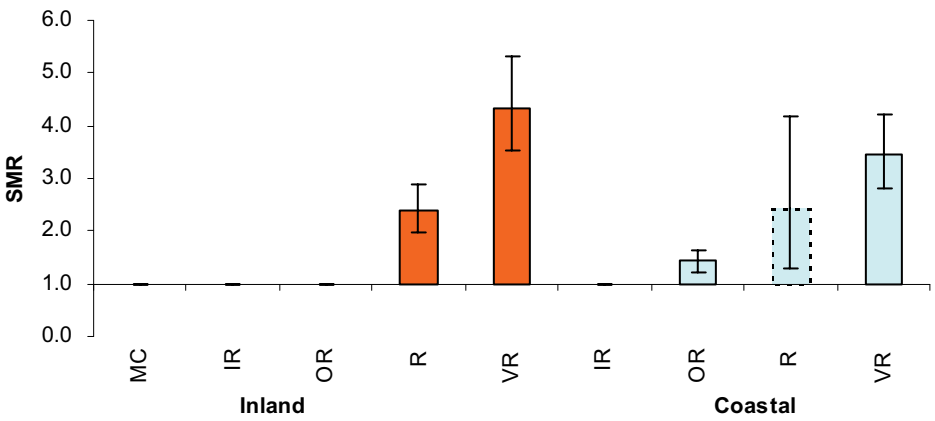
Northern Territory



Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.27: Ratio of observed to expected deaths, Northern Territory by region, persons, 2001



Note: SMRs calculated using Major Cities rates in the period 2001 as the standard.

Source: AIHW mortality database.

Figure 9.28: Ratio of observed to expected deaths, Northern Territory by region, 0–64 year old persons, 2001