# 2 Technical notes

## 2.1 Indigenous data quality issues

Of the issues to be considered when attempting to understand the health of regional and remote populations, Indigenous health is the most critical. However, identification of Indigenous people in data collections is frequently poor.

Overall, identification of Indigenous deaths in Australia is estimated to be no better than 60% (ABS 1999; ABS 2001c). Identification of Indigenous people in the National Mortality database for the period 1997–1999 is estimated to be more reliable in South Australia, Western Australia, the Northern Territory and Queensland than in the other jurisdictions (ABS 1999; ABS 2001b); identification is estimated at between 60% and almost 100%.

It could be that identification of Indigenous deaths is more accurate in areas where Indigenous people make up a larger proportion of the population, and poorer where they are a small minority. It is therefore possible that identification of Indigenous deaths in Very Remote areas (where Indigenous people constitute 45% of the population) is very good, but this hypothesis has not yet been rigorously tested. Reasons for assuming that identification is likely to be better in more remote areas include:

- the deceased (or their family) may be more likely to be known by the person completing certification;
- the importance of Indigenous health issues and of the need for accurate identification may be appreciated in remote areas where Indigenous people are more common;
- identification of Indigenous people in hospital morbidity data collections has been shown to be better in areas with higher proportions of Indigenous people in catchment areas (ABS & AIHW 1999);
- the ABS has found better coverage of the Indigenous population in deaths data for the states or territories with more remote areas such as Western Australia, South Australia, the Northern Territory and Queensland (ABS 2000); and
- mathematical modelling strongly suggests that similar accuracy in the identification of Indigenous deaths at each level of remoteness is highly unlikely (see 'Model 1', page 23).

Therefore, we conclude that there could be different rates of identifying Indigenous people by region, and hence regional data for Indigenous people have not been presented.

If Indigenous people in the Mortality Database are under-identified, then non-Indigenous people will be over-identified and consequently over-represented (as a consequence of some Indigenous people being incorrectly counted as non-Indigenous). At a national level, this is unlikely to have a significant impact on the calculation of rates for non-Indigenous people. The effect on calculated rates for Major Cities and regional areas is also likely to be small. However, the effect in an analysis of mortality in remote areas could be significant and is investigated in the next section. The remote area data for the non-Indigenous population should therefore be treated with caution.

## 2.2 Population data and calculation of death rates

The other important source of data for this report is the size of the populations in regional and remote areas. Data for this is based on the 1996 ABS Census, and developed at AIHW to reflect the total population in 1997, 1998 and 1999. The available Indigenous population data was the ABS estimate of the number of Indigenous people living in each SLA in 1996.

For simplicity and for the purposes of calculating death rates for the period 1997–1999, the non-Indigenous population is taken to be the average population in 1997–1999 minus the Indigenous population in 1996. This is not ideal, but is unlikely to affect comparisons between geographic regions for non-Indigenous people.

Current lack of Indigenous population data for each of the areas defined by the ASGC Remoteness Structure for years other than 1996 prevents calculation of trends in mortality for non-Indigenous people for the period 1991–1999. As populations grow over time, subtraction of a static (1996) estimate for the Indigenous population from an estimate of the total population which is larger in 1999 than it was in 1996, could result in rates apparently decreasing more quickly than is in fact the case. While trends for the total population are presented, separate trends for the Indigenous and non-Indigenous populations are not.

In addition, ABS estimates of the Indigenous population have been adjusted upwards by ABS, to allow for an estimated modest under-count of Indigenous people at the census. In the more remote areas, where Indigenous people may greatly outnumber non-Indigenous people, there is the possibility that the adjusted number of Indigenous people could be greater than the estimate for the total population (as the adjustment was across the board). This possible effect is estimated to be very small, with negligible impact in Major Cities, Inner and Outer Regional areas and in Remote areas. In Very Remote areas, calculated death rates for non-Indigenous people may appear higher by less than 0.5% (personal communication, Michael Roden, Demography section, ABS).

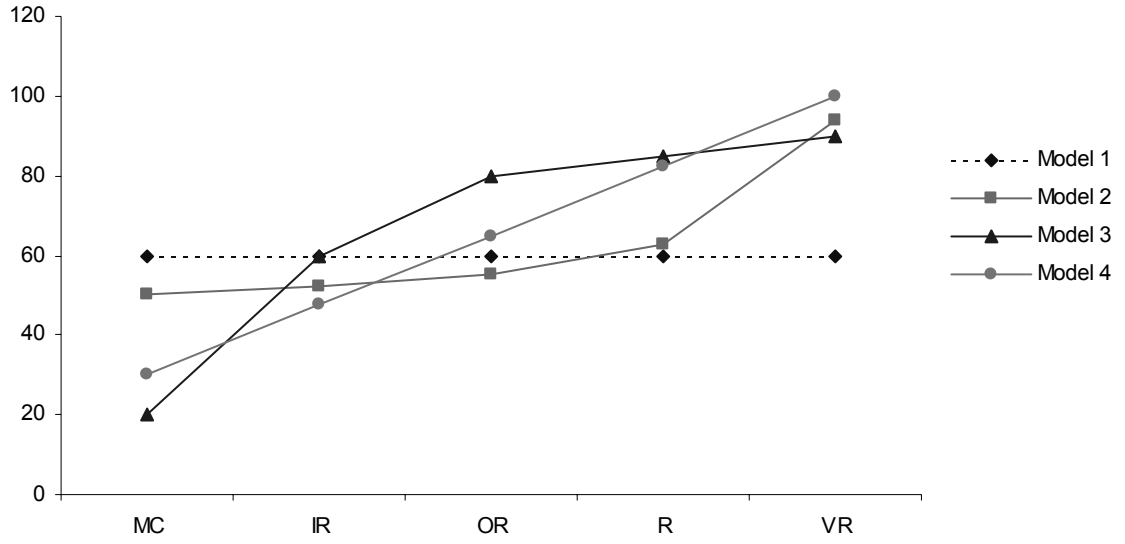
## 2.3 Effect of Indigenous data quality on reporting non-Indigenous deaths in this report

As mentioned earlier, reporting of Indigenous deaths is for the jurisdictions in which identification is considered more reliable (South Australia, Western Australia, the Northern Territory and Queensland). For non-Indigenous people, it was decided to report nationally rather than for the jurisdictions that had better identification of Indigenous people. This decision was made on the basis that coverage would be more representative of the Australian (rather than the South Australia, Western Australia, Northern Territory and Queensland) population.

In the AIHW Mortality Database, deaths are identified as Indigenous or non-Indigenous. In the years for which analysis has been conducted in this report, ABS estimates that approximately 60% of deaths of Indigenous people have actually been identified as such in the database (ABS 2001c). This leaves 40% of Indigenous deaths incorrectly classified as deaths of non-Indigenous people and resulting calculations of Indigenous death rates for Australia as a whole are therefore likely to be underestimates. This could however mean that reported non-Indigenous death rates will be higher than they really are.

This section assesses the size and direction of this error. For this purpose (that is, as a sensitivity analysis), four models, each making different assumptions, have been developed (Figure2.1, Table 2.1):

- Model 1 assumes that only 60% of Indigenous deaths are correctly identified as such in all geographical regions.
- Model 2 assumes that accuracy of identification is 50% in Major Cities, increasing gradually with remoteness (52%, 55% and 63% in Inner Regional, Outer Regional and Remote areas) then improves substantially to 94% in Very Remote areas, yielding an average national rate of accurate identification under this model of 61%.
- Model 3 assumes that the accuracy of identification is 20% in Major Cities, then rises rapidly at first (60% and 80% in Inner and Outer Regional areas), improvement slowing with remoteness (85% and 90% in Remote and Very Remote areas), yielding an average national rate of accurate identification under this model of 61%.
- Model 4 assumes that the accuracy of identification improves constantly with increasing remoteness, from 35% in Major Cities, to 50% and 65% in Inner and Outer Regional areas, to 80% and 95% in Remote and Very Remote areas, yielding an average national rate of accurate identification under this model of 60%.




*Source:* AIHW National Mortality Database.

**Figure 2.1: The percentage of Indigenous deaths assumed to be correctly identified under each model**

## Model 1

The first model assumes that 60% of Indigenous people are identified as such across all geographic areas (that is, 40% are misclassified as non-Indigenous). Under this model, estimated standardised mortality ratios (SMRs) for non-Indigenous males and females will be the same in Major Cities and Inner Regional areas, 2% higher in Outer Regional areas, and 11–12% and 72–101% higher in Remote and Very Remote areas respectively than if identification of Indigenous deaths was perfectly accurate. These results from Very Remote

areas are unlikely in the first case, impossible in the second; in fact this model predicts a negative death rate in Very Remote area females (see Table 2.1). As a consequence, this model must be viewed as implausible, and consequently the accuracy of identification has to be assumed to improve with remoteness.

### Model 2

The second model assumes that the accuracy of identification increases gradually at first, from 50% in Major Cities, to 52% in Inner Regional, 55% in Outer Regional, 63% in Remote, to 94% in Very Remote areas. Under these assumptions, presented mortality for non-Indigenous males and females will be the same in Major Cities and Inner Regional areas, 2% higher in Outer Regional areas, and 9–11% and 6–9% higher in Remote and Very Remote areas respectively than if identification of Indigenous deaths was perfectly accurate. If the accuracy of identification of Indigenous deaths does in fact follow this pattern, real rates for non-Indigenous people may be lower than described in this report by less than 2% in regional areas and by 6–11% in remote areas.

### Model 3

The third model assumes that the accuracy of identification increases markedly for regional areas, from 20% in Major Cities, to 60% in Inner Regional, 80% in Outer Regional, 85% in Remote, to 90% in Very Remote areas. Under these assumptions, presented mortality for non-Indigenous males and females will be the same in Major Cities, 1–2% and 1% lower in Inner and Outer Regional areas, and 0–1% and 9–15% higher in Remote and Very Remote areas respectively than if identification of Indigenous deaths was perfectly accurate. If the accuracy of identification of Indigenous deaths does in fact follow this pattern, real rates for non-Indigenous people may be higher than reported by 1–2% in regional areas, up to 1% lower in Remote areas and 9–15% lower in Very Remote areas.

### Model 4

The fourth model assumes that 35% of Indigenous deaths are identified as such in Major Cities (that is, 65% are misclassified as non-Indigenous), and 95% are identified in the most remote areas, with identification in intermediate areas between the two (50%, 65% and 80% in Inner Regional, Outer Regional and Remote areas respectively). Under these assumptions, presented mortality for non-Indigenous males and females will be the same in Major Cities and Inner Regional areas, 1% higher in Outer Regional areas, 3–4% and 4–7% higher in Remote and Very Remote areas respectively than if identification of Indigenous deaths was perfectly accurate. If the accuracy of identification of Indigenous deaths does in fact follow this pattern, real rates for non-Indigenous people will be the same in Major Cities and Inner Regional areas, 1% lower in Outer Regional areas and 3–7% lower in remote areas than reported.

Some degree of over-estimation of non-Indigenous death rates is a consequence of the under-identification of Indigenous deaths (with some Indigenous deaths being counted amongst the non-Indigenous). Reported death rates for non-Indigenous people are likely to be affected by between minus 2% and plus 2% for Major Cities and regional areas, but may be inflated in remote areas by up to 10%. The exact magnitude of the effect within this range is unclear. Results for the Remote and Very Remote areas should be accepted cautiously until

the relationship between remoteness and identification of Indigenous people in the mortality data collection is clearly understood.

**Table 2.1: Comparison of the size of the over-estimates in non-Indigenous death rate predicted in each of the four models**

| | | | ASGC Remoteness area | | | | |
|---|---|---|---|---|---|---|---|
| | | | MC | IR | OR | R | VR |
| Type | | | | | SMR | | |
| Model 1 | Males | Observed | 100 | 107 | 110 | 107 | 100 |
| | | Adjusted | 100 | 107 | 108 | 95 | 28 |
| | | % difference | ***0*** | ***0*** | ***2*** | ***11*** | ***72*** |
| | Females | Observed | 100 | 103 | 106 | 98 | 87 |
| | | Adjusted | 100 | 103 | 104 | 86 | –1 |
| | | % difference | ***0*** | ***0*** | ***2*** | ***12*** | ***101*** |
| Model 2 | Males | Observed | 100 | 107 | 110 | 107 | 100 |
| | | Adjusted | 100 | 106 | 107 | 97 | 94 |
| | | % difference | ***0*** | ***0*** | ***2*** | ***9*** | ***6*** |
| | Females | observed | 100 | 103 | 106 | 98 | 87 |
| | | Adjusted | 100 | 103 | 103 | 88 | 79 |
| | | % difference | ***0*** | ***0*** | ***2*** | ***11*** | ***9*** |
| Model 3 | Males | Observed | 100 | 107 | 110 | 107 | 100 |
| | | Adjusted | 100 | 108 | 111 | 107 | 90 |
| | | % difference | ***0*** | ***–2*** | ***–1*** | ***0*** | ***9*** |
| | Females | Observed | 100 | 103 | 106 | 98 | 87 |
| | | Adjusted | 100 | 104 | 107 | 97 | 74 |
| | | % difference | ***0*** | ***–1*** | ***–1*** | ***1*** | ***15*** |
| Model 4 | Males | Observed | 100 | 107 | 110 | 107 | 100 |
| | | Adjusted | 100 | 107 | 109 | 104 | 95 |
| | | % difference | ***0*** | ***0*** | ***1*** | ***3*** | ***4*** |
| | Females | Observed | 100 | 103 | 106 | 98 | 87 |
| | | Adjusted | 100 | 103 | 105 | 94 | 81 |
| | | % difference | ***0*** | ***0*** | ***1*** | ***4*** | ***7*** |

*Note:* SMRs presented here are the ratio of observed to expected deaths multiplied by 100.

*Source:* AIHW Mortality Database, AIHW Population Database.

## 2.4 Statistical methods

Throughout the report, estimates are provided with 95% confidence intervals. Reported statistics are taken to be significantly different if 95% confidence intervals do not overlap. In the text, rates described as 'significantly different' can be taken to be statistically significantly different at the 95% level. The small size of the population in Remote and Very Remote areas restricts the amount of data available to calculate rates; the level of uncertainty associated

with rates calculated for these areas is certainly greater than for areas with large populations (such as Major Cities). Consequently, confidence intervals have been calculated and accompany presented rates so that the level of uncertainty associated with rates is clearly expressed. These confidence intervals do not describe the uncertainty associated with potential bias, for example, the uncertainty in identification of Indigenous deaths.

Numerical values for figures are provided in Appendix A.

The slopes of trend lines for describing the change in death rates over time have been calculated using weighted least squares; confidence intervals for the slope are calculated using the standard error of the slope.

Confidence intervals for rates have been calculated on the basis of the number of observed deaths using the square-root transform described in Breslow and Day (1987 pp. 70–71).

Life expectancy is calculated using life tables (Pollard et al. 1975, pp. 30–47).

Description of the relative rates of death in the different areas has been made by comparing the number of deaths that actually occurred with the number that would be expected if Major Cities rates applied in each area. 'Excess' deaths have been expressed as the difference between the number of deaths observed and the number expected (Armitage & Berry 1987, pp. 403–405).

The relative contributions of each of the broad causes of death to the overall decrease in the death rate were calculated using linear regression of the number of 'excess' deaths attributed to each cause, over time, using the method described in Armitage & Berry 1987, pp. 143–150).

Data quality and analytical methods (including the selection of standards for reporting against total and Indigenous/non-Indigenous mortality) are further discussed on page 1.

## Age standardisation

Each population has its own characteristics. For example, Indigenous populations tend to have proportionally larger numbers of children and smaller numbers of older people than non-Indigenous populations. Similarly, there are differences between the age structure and the proportions of males and females living in metropolitan, rural and remote populations (see page 17). Comparison of crude death rates (that is, the total number of deaths divided by the total population) may simply reflect the different age and sex structures of populations rather than any difference in the likelihood of death.

It is usual for the Institute to report rates that have been directly age standardised to the Australian population as it was in 1991. This involves applying the rates of disease or death for each sex and age group in the population of interest, to the number of people in the whole Australian population in 1991; the total number is then expressed as a rate. This approach works well when the population of interest is large, but works less well with small populations, especially if the disease or cause of death is relatively rare. In such situations it is better to use indirect rather than direct age standardisation.

For this report, the indirect method of standardisation has been used because several of the populations of interest are small and the numbers of deaths in these areas for some diseases are also relatively small. This method involves the following steps:

- calculation of age-specific rates for the standard population (that is, the total and non-Indigenous Major Cities population);
- calculation of the number of deaths expected to occur, if the standard age-specific rates applied to the population in each area;

- comparison of the total number of deaths observed in the population of each area to the number expected (that is, the ratio of observed to expected deaths).

One method is to then multiply the crude rate (total deaths divided by total population) by the ratio (of observed to expected cases) to obtain the 'indirect age-standardised rate'. However, it then becomes more difficult to report for males and females separately while also describing differences between areas. Consequently, the simple ratio of the observed to expected number of deaths (the standardised mortality ratio (SMR)) has been used in this report, rather than the 'indirect age-standardised rate'.

### Standard populations

In this report, the annual death rate for each five-year age group of males and females from Major Cities in the period 1997–1999 has been used as the standard. People who live in Major Cities of Australia have the lowest death rates and so are a useful standard population for this report. National age-specific rates were not used because this would entail comparison of mortality, not with the lowest rates in Australia, but with an average rate for Australians. This would have made comparisons between areas more difficult.

In describing mortality for Indigenous and non-Indigenous populations, it has been necessary to use the annual death rate for each five-year age group of non-Indigenous males and females from Major Cities in the period 1997–1999 as the standard. This second standard has been used for evaluating differences in mortality for Indigenous and non-Indigenous people for several reasons:

- It was felt more logical to compare mortality for non-Indigenous people in each area with that for non-Indigenous people in Major Cities. Use of this standard ensures that SMRs in Major Cities will always be equal to 'one', making comparison between the other areas and Major Cities easier. Use of this standard also reflects a logical comparison: that Indigenous and non-Indigenous people, irrespective of where they live, should reasonably expect to experience the same level of mortality as their Major Cities counterparts.
- Comparison with the 'best' rates in Australia (that is, those of non-Indigenous people from Major Cities) was thought to be potentially more useful than comparison with 'average' rates (that is, those of all people from Major Cities).
- Use of only one standard immediately encourages readers to subtract numbers of observed and expected deaths for the non-Indigenous population from the total population to yield the number of observed and expected Indigenous deaths in each area. Because of data quality issues pertaining to identification of Indigenous deaths, we believe the results of such subtraction are likely to yield misleading results (see page 21); use of two different (but very similar) standards discourages such subtraction.

So, two standards have been used in this report:

- When describing mortality differentials for the total (Indigenous plus non-Indigenous) populations, age-specific death rates for the total populations of males and females living in Major Cities have been used (separately) as the standard.
- When describing mortality differentials for the Indigenous and the non-Indigenous populations, age-specific death rates for the *non-Indigenous* populations of males and females living in Major Cities have been used (separately) as the standard.

The difference between the age-specific rates for each of these groups is small, because, proportionally, there are very few Indigenous people living in Major Cities (1%).

Use of these standards allows comparison of the observed number of deaths with the number expected if the lowest rates of death experienced by the largest proportion of the Australian population (those living in Major Cities) were to also be experienced by Indigenous people and by other people who live in regional and remote areas.

### Expression of the ratio as a rate

Because the ratio of the observed to expected deaths is exactly the same as the ratio of the 'indirect age-standardised rates' in each area to that in Major Cities, the difference between the mortality in one area and that in Major Cities can be expressed either as:

- one rate is 'so many times as high as another'; or
- there are 'so many times more deaths than expected'.

For example, if 100 deaths were observed in an area, and only 50 were expected, then there were 2 times as many deaths as expected, or, the death rate in the area was 2 times that in Major Cities.

### Statistical significance

Because of the influence of chance and natural variation, calculated rates will vary a little from year to year. What may appear to be a slightly higher rate in one year, may be the same (or a slightly lower) rate a year later. To assist in determining whether calculated rates are meaningfully different from one another, confidence intervals have been provided where possible. Where confidence intervals overlap, the rates are assumed to be not significantly different, but where they miss each other completely, the differences are considered to be statistically significant. In addition, data for the three years 1997–1999 have been aggregated throughout these analyses: the larger numbers increase our ability to calculate a more statistically stable rate.

Where there are exactly as many deaths as expected, the ratio or SMR will be 'one'.

In tables presented in this report, ratios of observed to expected deaths that are significantly greater than 'one' are in bold print and accompanied by an asterisk. This indicates that the difference exhibited in the years 1997–1999 is likely to be a real difference that will be reflected in analyses of data from other years (unless there are other relevant changes that affect death rates).

Frequently the difference between the number of observed and expected deaths is not statistically significant (that is, the difference could have occurred by chance, and may not be due to any real difference in the death rates of the two populations). This can be due to the fact that there is little difference in the numbers of observed and expected deaths, or because the numbers of observed and expected deaths are so small as to make it next to impossible to distinguish a statistically significant difference.

In a number of places, ratios of observed to expected deaths that are *not* significantly different to 'one' have been included (and identified) in tables. However, all such non-significant figures should be treated cautiously.

Some graphs and tables show large fluctuations over time or between age groups. Many of the differences are not significant, the fluctuation a result of rates being influenced by chance events (in relatively small populations). Additionally, 'random' events (for example, the Port Arthur shootings) can have a substantial impact on reported rates, particularly when the cause of death is usually uncommon.

## 2.5 Geographic classification

Until recently, rurality had been described almost exclusively by the seven-level categoric Rural, Remote and Metropolitan Areas (RRMA) classification. This classification is based on the size of the local population centre as well as a measure of remoteness (DPIE & DHSH 1994).

Work by the National Key Centre for the Social Applications of Geographical Information Systems (GISCA) from 1996 saw the development of improved measures of remoteness: the Accessibility/Remoteness Index of Australia (ARIA), a continuous variable with a remoteness score of 0–12; and its successor, ARIA+ (with a remoteness score of 0–15).

From ARIA, DoHA developed its five-level categoric classification (also called ARIA), and from ARIA+, ABS developed its six-level categoric classification, the ASGC Remoteness structure (DHAC & GISCA 1999; ABS 2001b).

Remoteness in this report has been defined using the ASGC Remoteness structure (Figure 2.2) recently released by ABS, rather than the previous RRMA or the DoHA ARIA classification (Table 2.2). This decision was made after consultation with the Rural Health Information Advisory Committee (RHIAC), DoHA and ABS.

The advantages of the ASGC Remoteness structure over the other classifications are that:

- having been developed by ABS, it is likely to be adopted in a wide range of disciplines. Consequently it is likely to be of use to a greater number of users and compatible with other future analyses; and
- it is similar to the DoHA ARIA classification, but classifies only 66% (rather than 81%) of the Australian population in its least remote category.

The disadvantages are that :

- a significant amount of development work was required to develop population data for the total and Indigenous populations, and to adapt and develop appropriate concordances that allow allocation of individual deaths to one of the five specific remoteness categories;
- previous work describing rural and remote area health has used RRMA or DoHA ARIA. Use of ASGC Remoteness in this work precludes incorporation of previous findings in this report; and
- health data can currently be reported by Statistical Local Area or by postcode. ASGC Remoteness category is allocated on the basis of the smaller Census Collection District; consequently, different parts of an SLA may be classified as being in more than one remoteness category. This makes analysis more difficult and cumbersome.

**Table 2.2: Remoteness classifications, 1996 population estimates**

| RRMA | | | DoHA ARIA | | | ASGC Remoteness | | |
|---|---|---|---|---|---|---|---|---|
| Category | Population ('000,000) | % | Category | Population ('000,000) | % | Category | Population ('000,000) | % |
| Capital Cities | 11.6 | 64 | Highly Accessible | 14.9 | 81 | Major Cities | 12.1 | 66 |
| Other Metropolitan centres | 1.4 | 8 | | | | | | |
| Large Rural centres | 1.1 | 6 | Accessible | 2.2 | 12 | Inner Regional | 3.8 | 21 |
| Small Rural centres | 1.2 | 7 | | | | Outer Regional | 2.0 | 11 |
| Other Rural areas | 2.4 | 13 | Moderately Accessible | 0.8 | 4 | | | |
| Remote centres | 0.2 | 1 | Remote | 0.2 | 1 | Remote | 0.3 | 2 |
| Other Remote areas | 0.3 | 2 | Very Remote | 0.2 | 1 | Very Remote | 0.2 | 1 |
| | | | | | | Migratory | <0.1 | |

*Notes*

1. This table is a rough guide only, the various classes in each classification are not equivalent.
2. Data pertains to the 1996 ABS Census.

*Source:* AIHW Population Estimates.

Remoteness area in this report was allocated on the basis of the postcode of the residential address of the deceased on the death certificate. As the boundaries of remoteness areas and postcodes do not match exactly, deaths from postcodes straddling the boundaries of remoteness areas were allocated proportionally to remoteness categories on the basis of population concordances.

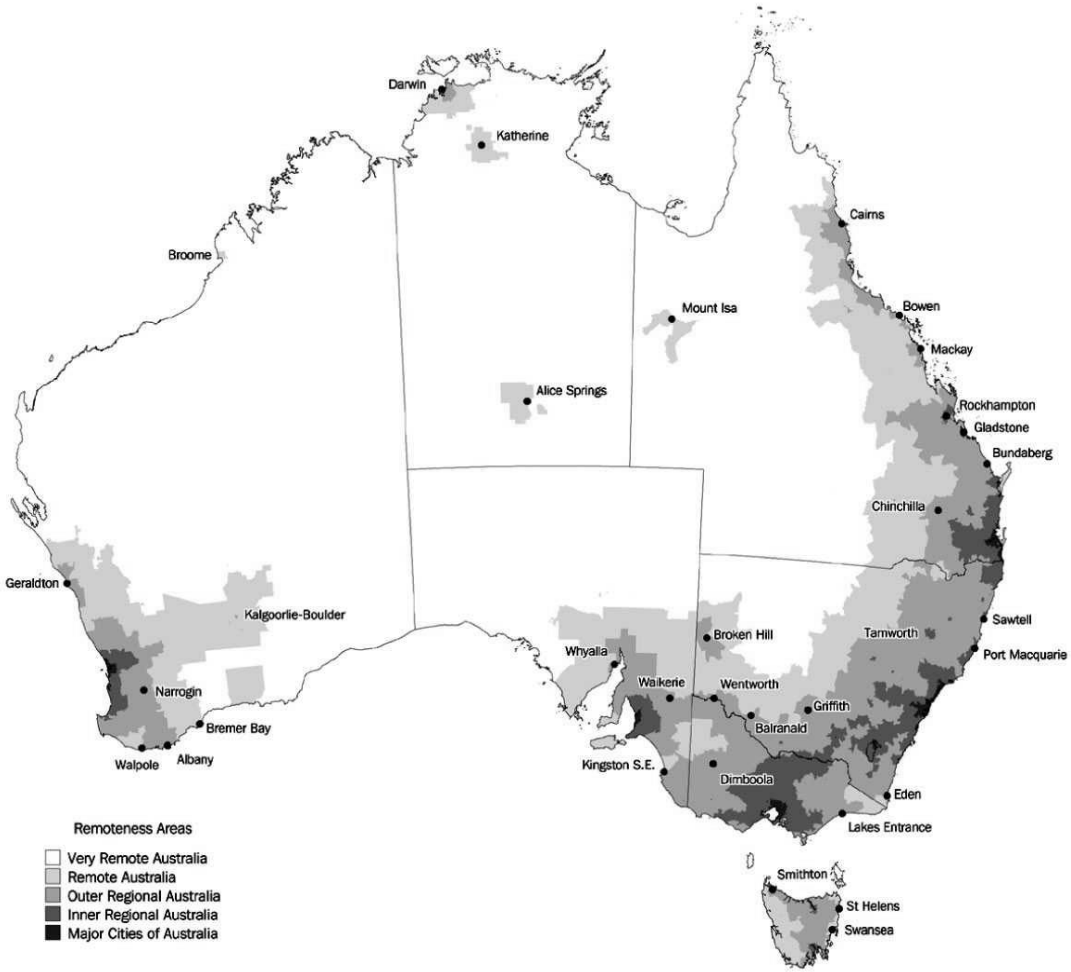
In figures and tables throughout this report, Major Cities, Inner Regional, Outer Regional, Remote and Very Remote categories have been abbreviated as MC, IR, OR, R and VR.

For more information on the various remoteness classifications please refer to the AIHW publication *Rural, Regional and Remote Health: A Guide to Remoteness Classifications based on 2001 Statistical Local Area Boundaries* (AIHW 2003b).

## 2.6 Cause of deaths

Unless otherwise stated, the cause of death reported is the underlying cause of death. Causes of death were classified using ICD-10, and the ICD-10 categories used to present the data are defined in Appendix D.

For deaths described as due to injury or poisoning, the cause reported is the external cause (such as suicide or motor vehicle accident), rather than the nature of the injury, although the term 'injury' has been often used.




*Source*: ABS.

**Figure 2.2: Remoteness areas of Australia**

## 2.7 Notes on data presentation

1. Percentages or numbers in tables may not add to 100 or the total due to rounding.
2. ICD codes for the described causes of death are listed in Appendix D.
3. All standardisation of death rates has been indirect using Major Cities rates for males and females for the period 1997–1999, or Major Cities rates for non-Indigenous males and females for the period 1997–1999. The former have been used to standardise rates for the total (Indigenous plus non-Indigenous) population, while the latter have been used to standardise rates for Indigenous and non-Indigenous populations separately.
4. In this report, names of specific areas defined by the Australian Standard Geographical Classification have been capitalised (for example, Inner Regional, Remote, Very Remote). Where reference has been made to generic 'regional' or 'remote' areas, the terms have been left un-capitalised (for example, regional, remote).
5. 'Excess' deaths are calculated by subtracting the expected number of deaths from the number observed. Expected deaths are the number of deaths expected annually if death rates found in Major Cities are applied to the populations living in each of the other areas. 'Excess' deaths provide an indication of the extra burden of mortality in each area.
6. Where there were fewer deaths than expected, this report states either (for example) 5 fewer deaths than expected annually, or –5 'excess' deaths annually; both expressions mean the same thing.
7. All statements about rates of death in this report are based on the ratio of observed to expected deaths. If there are twice as many deaths as expected, then the rate of death can be assumed to be twice that of the comparison population.
8. Where rates are statistically significantly different from one another, they are referred to in the text as significantly different; if rates are not statistically significantly different they are not said to be significantly different. Statistical significance is at the 95% level.
9. In order to reduce tediousness in the text, where reference is made to 'Major Cities, Inner Regional, Outer Regional, Remote and Very Remote areas', the term 'the five areas' has been used. Where there is reference to 'Inner Regional, Outer Regional, Remote and Very Remote areas', the term 'the four areas outside Major Cities' has been used.
10. Graphs are presented as bar charts with error bars (for example, Figure 3.1). These error bars indicate the values of the lower and upper 95% confidence levels. We can be 95% sure that, if the underlying rates remained the same and we calculated the death rate in the preceding year or the next year, the calculated rate would lie somewhere between the two presented error bars. In the graph, the top of the column (between the two error bars) indicates our best point estimate with the available data. There is one chance in twenty that the true value lies outside the error bars. Error bars do not provide any indication of the level of uncertainty due to bias in the data (for example, potential bias as a result of different accuracy in the identification of Indigenous deaths in each area). Columns representing estimates of SMRs for non-Indigenous people from Remote and Very Remote areas have a dashed outline, indicating uncertainty about identification issues discussed on pages 21 and 22.
11. Statistically significant figures are indicated in tables as bold and with an asterisk.