A Social Health Atlas of South Australia

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Foreword

A Social Health Atlas of South Australia is an important resource available to policy makers, planners, service providers and community members working towards the future health and wellbeing of South Australians. In particular, it will assist in achieving improvements in healthy life expectancy for all South Australians and a reduction of inequalities in health, which are both important aims of South Australia's Strategic Plan and the Department of Health's *Strategic Directions*.

The atlas is one of a number of Department of Health initiatives which seek to ensure those providing health services have the best possible information to support them in their work. It provides an overview of the health status and the patterns of use of health and welfare services of the population in different areas of the State, with a focus on the newly formed health regions, and does so in the context of socioeconomic status.

The release of the first edition sixteen years ago provided, for the first time, a compilation of data presented in maps about the health of the population by small areas of the State. Since then, these atlases have been widely used by health professionals, including general medical practitioners, clinicians, and community health nurses, as well as government agencies with a responsibility for the provision of health, welfare and education services in the State. Importantly, the atlases have been equally accessible to the wider community, to those on health service boards, to students and to other interested members of the public.

This third edition of the atlas is accompanied by Internet-based interactive software that provides easily accessible maps and charts of data included in the atlas.

For South Australia to remain an inclusive community, we need to continue to address inequalities in health and wellbeing at a regional and statewide level. This new edition of *A Social Health Atlas of South Australia* is one of the key tools that will help determine where further efforts are needed.

HON JOHN HILL MP
MINISTER FOR HEALTH

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Chapter 3, Regional profile, is a shortened version of a chapter written by Professor Graeme Hugo, Federation Fellow, The University of Adelaide.

Elizabeth Fisher at PHIDU checked all of the data reported in the text against the original datasheets and assisted in other ways in finalising the project.

We thank all of these people for their assistance and expertise in advising us. Finally, we wish to emphasise that the views expressed in the atlas and the conclusions drawn are those of the authors, and not necessarily those of the people who have assisted us with its production.

Overview

The level of health and wellbeing of the South Australian population is high when compared to the populations of many overseas countries. Examples include our life expectancy and overall infant mortality rates. However, these summary statistics hide substantial differences in the health and wellbeing of specific groups within our population.

There is now substantial evidence for the impact of socioeconomic factors on the health of South Australians. Using data from the first edition of the atlas, it was estimated that in Adelaide in the early 1990s, socioeconomic disadvantage explained between ten and fifty per cent of the variation in mortality between geographic areas, depending on gender and cause of death. Overall, 34 per cent of male deaths and at least 14 per cent of female deaths could be directly linked to disadvantage (CSAES 1993).

This third edition of the atlas updates the information on social, economic and health inequalities presented in the earlier editions, and provides a range of new indicators. From the time of the publication of the first atlas, the data in this atlas show demographic change in population groups, and both improvements in socioeconomic circumstances and evidence of greater inequality. In order to demonstrate the extent of the social and health inequalities shown in the maps in the atlas, many of the indicators are also presented in chart form in Chapter 9.

Population trends

There are a number of notable demographic trends evident in **Metropolitan Adelaide** over the 15-year period between the first and third editions of the atlas: the sizeable increases in the number of people aged 65 years and over (up 35%), single parent (54%) and low income families (40%), and the number of people identifying in the Population Census as being of Aboriginal or Torres Strait Islander origin (90%). Also of note, over the twelve years from 1992 to 2004, are the increases in numbers of disability support (61%) and female sole parent pensioners (36%). Since 1991, female labour force participation has increased (up by 24%), and there has been a small increase in participation of 16 year old people in full-time education (four per cent).

The largest declines over the period are in the numbers of unskilled and semi-skilled workers (down by eleven per cent) and of people recorded in the Census as being unemployed (nine per cent). Although the decline in the number of dwellings rented from the SA Housing Trust is relatively low, at six per cent over 15 years, it is of particular importance, as it has occurred at a time of overall growth in the size of the welfare-dependent population, who have traditionally been a major part of the client group for public housing.

By far the largest decline is in the number of unemployment beneficiaries, although this decline of 42% must be seen in light of the 61% increase in the number of people on a Disability Support Pension (DSP). This is a turnaround from 1992, when the DSP numbers were just over half those of unemployment beneficiaries, being almost 50% higher in 2004.

The small decline (of four per cent) in the total fertility rate is reflected in the decline in the number of 0 to 4 year old children and the stable number aged 5 to 14 years.

In 2004, a total of 82,900 people in **Metropolitan Adelaide** were in receipt of a disability pension or unemployment payment, 12% of the eligible population (15 to 64 years for males, to 59 years for females); a further 24,300 females were receiving a sole parent pension, giving a total of 15% of the eligible population receiving one of these welfare payments; that is, one in seven people at these ages was reliant on welfare benefits: this does not include their dependants, or other low income families who receive an income from employment.

In **country South Australia**, the increases, albeit over a shorter period, are generally smaller and the declines more pronounced. Of note are the large declines in the 0 to 4 year age group (down 13%); the substantial decline in people recorded in the Census as being unemployed (25%); the increase (four per cent) in unskilled and semi-skilled workers (compared with a decrease of eleven per cent in Metropolitan Adelaide); a smaller increase in people reporting being of Aboriginal or Torres Strait Islander origin (46%); and a much more substantial decline in the number of dwellings rented from the SA Housing Trust (34%).

There was also a larger increase in country areas in the number of age pensioners (12%), and smaller increases in disability support and sole parent pensioner numbers (both 15%), than for Metropolitan Adelaide. The substantial decline of 17% in the number of children in welfare-dependent and other low income families is consistent with the change in the population in this age group. It should be noted that these figures exclude children in Aboriginal families receiving unemployment benefits through the CDEP scheme.

Trends in social and health inequalities

Since publication of the first edition of the Social Health Atlas, there has been considerable change in the extent of inequality between population groups, both increasing and decreasing; in addition, some indicators show persisting levels of inequality. The following pages provide a summary of inequality for South Australians in as far as it can be measured by the available data.

Inequality is measured here by comparing, for each indicator, the most disadvantaged 20% of the population with the most advantaged 20% of the population. The differential in rates between these socioeconomic groups is expressed as a ratio, where a value of 1.00 represents equality: ratios above 1.00 show poorer outcomes for the disadvantaged group and ratios below 1.00 show poorer outcomes for the advantaged group.

The data in Table A (for social inequality) and Table B (for health inequality) show the indicators for which the greatest change in inequality has been measured, for both declining and increasing inequality. The table also includes indicators for which high levels of inequality have persisted, without widening or declining (stable inequality).

In addition, the tables show the extent of increase or decline in the proportion (or rate) for the indicator in the population as a whole. Thus, it is possible to examine movements both in the absolute level and in the relative level of an indicator.

For example, from Table B we can see that at a time of declining premature death rates for males in country South Australia (down by 28.0% over a ten-year period), the difference in death rates in the most disadvantaged areas compared with the most advantaged has risen to 1.87 times higher, an increase of 46.1% over the ten years. However, for people in Metropolitan Adelaide on the Disability Support Pension, although the overall proportion of these pensioners has increased by 39.6% over a 12-year period, there has been a decline of 20.8% in the difference across the socioeconomic groupings of areas.

Full details of trends in inequality are presented in Chapter 9.

Declining inequality

Social inequality

In **Metropolitan Adelaide**, the largest decline in social inequality was recorded in the location of dwellings rented from the South Australian Housing Trust (SAHT) (Table A). However, there are a number of factors influencing the lower difference in rates, other than simply a decline in the unequal location of public housing. There has been an overall decline in the number of SA Housing Trust dwellings, as well as a growth in housing stock, which resulted in a 23.7% decline in the proportion of housing in **Metropolitan Adelaide** rented from the SA Housing Trust over the 15 years to 2001. The Australian Government also provides housing support through rent assistance to low income private renters. With the net reduction in public housing, more low income households are now reliant on private rental accommodation (comparable trend data are not available for people receiving rent assistance).

There was a substantial decline (58.0% over 15 years) in the inequality of the distribution of dwellings without a motor vehicle. Despite a large decline in the proportion of the most disadvantaged population without a motor vehicle (28.2%), the majority of the reduction in inequality is due to an increase in the proportion of the most advantaged households without a motor vehicle. The trend of fewer advantaged households with a motor vehicle is most likely due to an ageing population and a lesser need as a consequence of access to public transport and services.

Large declines in inequality were also evident for people born overseas and reporting a poor proficiency in English, and for those resident in Australia for five years or more, as well as for disability support pensioners. However, the current estimated extent of inequality remained extremely high for these indicators.

There was no evidence of declining social inequality for residents of **country South Australia** from the indicators for which trend data are available (see Table 9.8).

Health inequality

The level of inequality associated with the health indicators is generally lower than for the social indicators (Table B), and declines over time were smaller.

Although the difference in rates for a number of indicators in **Metropolitan Adelaide** has narrowed, the current estimated extent of inequality has remained very high for lung cancer incidence, premature female deaths and hospital booking lists. Marked increases were recorded in the total proportion of four year old boys assessed as being overweight, and the standardised rate of hospital admissions of males, although for the former the inequality differential no longer exists, and for the latter, it is now much lower.

Despite a substantial increase (100%) over a six-year period in the proportion of four year old boys in **country South Australia** assessed as being overweight, the difference in rates across the socioeconomic groupings has declined. However,

the difference in rates between the second most disadvantaged areas (Quintile 4) and the most advantaged areas (Quintile 1) has increased (see chart in Figure 9.8).

There was a notable decline both in the estimated extent of inequality and in the overall rate associated with infant deaths. Despite this decline, and declining inequality in admissions to private hospitals, admissions of females and admissions to public acute and private hospitals, the current level of inequality remains high for these indicators.

Table A: Trends in social inequalities in South Australia

Indicator (see relevant chapter for data definitions)	Change[1] in indicator for total population		Estimated extent of inequality[2]		
	Period (yrs)	%[1]	Period 1	Period 2	% change
Declining inequality					
Metropolitan Adelaide					
SA Housing Trust rented dwellings	15	-23.7	27.12**	10.99**	-59.5
Dwellings without a motor vehicle	15	-17.2	4.14**	1.74**	-58.0
Poor proficiency in English[3]	10	-13.7	6.71**	3.56**	-46.9
People born overseas[3], resident in Australia for five years or more	10	1.8	2.00**	1.55**	-22.5
Disability support pensioners	12	39.6	4.53**	3.59**	-20.8
Country South Australia					
Nil	..	..	..	..	..
Stable inequality					
Metropolitan Adelaide					
Aboriginal & Torres Strait Islander people	15	72.9	8.25**	8.24**	-0.1
Children in welfare-dependent and other low income families[4]	12	6.9	2.88**	2.96**	2.8
Unemployment rate	15	-51.6	3.00**	2.78**	-7.3
Single parent families	15	43.3	2.14**	2.11**	-1.4
Total fertility rate	10	-3.6	1.16**	1.23**	6.0
Country South Australia					
Aboriginal & Torres Strait Islander people	10	36.4	13.60**	13.40**	-1.5
Dwellings without a motor vehicle	10	-8.6	3.35**	3.61**	7.8
Disability support pensioners	10	48.9	2.49**	2.64**	6.0
Single parent families	10	48.5	1.92**	1.98**	3.1
Unskilled and semi-skilled workers	10	5.4	1.21**	1.30**	7.4
Increasing inequality					
Metropolitan Adelaide					
Unskilled & semi-skilled workers	15	-21.2	2.38**	3.85**	61.8
Female labour force participation (20 to 54 years)	15	10.0	0.84**	0.69**	17.9
Female sole parent pensioners	12	24.6	3.72**	4.35**	16.9
People receiving an unemployment benefit (includes CDEP[5])	12	-48.3	3.21**	3.72**	15.9
Age pensioners	12	-17.5	1.28**	1.46**	14.1
Country South Australia					
Poor proficiency in English[2]	10	-36.2	3.32**	8.53**	156.9
People receiving an unemployment benefit (includes CDEP[5])	10	-41.3	2.58**	5.79**	124.4
SA Housing Trust rented dwellings	10	-45.9	9.00**	15.50**	72.2
Unemployment rate	10	-58.3	1.88**	2.58**	37.2
Children in welfare-dependent and other low income families[4]	10	-15.8	1.35**	1.77**	31.1

[1] Change in proportion eg. 23.7% drop in dwellings rented from the SA Housing Trust, as a proportion of all dwellings

[2] Inequality as measured by the ratio between the rate/ per cent in most disadvantaged and most advantaged areas. Trend in inequality is classified as stable where the ratio between the rates differs by less than 10% between the periods

[3] Includes only people who were born in a predominantly non-English speaking country

[4] Excludes children in families under CDEP (Community Development Employment Project)

[5] CDEP: Community Development Employment Project

[*] indicates statistical significance: see page 24 for details

Stable inequality

The level of inequality remained stable in over half of the indicators for which trend data are available.

Of the indicators that remained stable, those with the greatest level of inequality are shown in Tables A and B.

Social inequality

The most extreme and persistent inequality is evident for Aboriginal and Torres Strait Islander people, both in **Metropolitan Adelaide** (a differential across the socioeconomic groupings of 8.24**) and in **country South Australia** (13.40**).

The proportion of single parent families in **Metropolitan Adelaide** and **country South Australia** increased by nearly 50%. This growth was relatively consistent across the socioeconomic groupings of areas, with single parent families still twice as likely to live in the most disadvantaged areas.

In **Metropolitan Adelaide**, children in the most disadvantaged areas remained nearly three times (2.96**) as likely to live in welfare-dependent and other low income families. Despite declining by half (51.6%) overall, the inequality among unemployed people persisted, with an unemployment rate in the most disadvantaged quintile 2.78 times that in the most advantaged quintile. The overall rate and extent of inequality remained stable for total fertility rate.

In **country South Australia**, the estimated extent of inequality associated with dwellings without a motor vehicle remained extremely high (a differential of 3.61**), despite a marginal decline in the overall rate. There was a very large increase in the proportion of the population receiving the Disability Support Pension; however, this increase was relatively consistent across the quintiles, with those in the most disadvantaged quintile over two and a half times more likely to receive this pension.

Health inequality

Despite declining overall rates and proportions for several indicators in **Metropolitan Adelaide**, high levels of health inequality continued to be evident for premature male deaths, GP services to males and females, and Child and Adolescent Mental Health Services' clients (although the overall decline was marginal for clients of this service, Table B).

The overall rate of termination of pregnancy increased by nearly one quarter (22.9%); however, the estimated extent of inequality remained stable, although very high, with a rate ratio of 1.58**.

In **country South Australia**, inequality associated with lung cancer also persisted, with people in the most disadvantaged quintile 73% more likely to develop lung cancer than those in the most advantaged quintile. The marked increases in admissions of males to hospital and in terminations of pregnancy had varying effects on the level of inequality associated with these indicators, decreasing for admissions and increasing marginally for terminations. There were small changes in the overall rates of GP services to females and low birthweight babies, with both of these indicators having a less pronounced rate ratio of 1.16.

Increasing inequality

Social inequality

Despite an overall decline of 21.2% in the proportion of workers in unskilled and semi-skilled occupations in **Metropolitan Adelaide**, there was a substantial (61.8%) increase in inequality, as the majority of this decline occurred in the most advantaged population group. The rate of females in the most disadvantaged quintile participating in the labour force has declined, in contrast to the increase in the most advantaged quintile, resulting in increasing inequality. The proportion of female sole parent pensioners increased by approximately one quarter, with this growth disproportionately occurring in the most disadvantaged quintile, resulting in increasing inequality. People receiving an unemployment benefit declined by half (48.3%). This decline was evident in each quintile, although more so in the most advantaged quintile. There was also an increase in inequality for age pensioners, despite an overall decline in their proportion of the population.

For indicators in **country South Australia**, the largest increases in inequality were associated with large declines in the overall rate, reflecting increasing concentration of these population groups in disadvantaged areas. The extent of inequality more than doubled both for people with a poor proficiency in English and people receiving an unemployment benefit.

The decline in dwellings rented from the SAHT was associated with fewer dwellings rather than declining need. Over three quarters of SAHT houses are located in the most disadvantaged areas (77.8% in Quintiles 4 and 5), as reflected by the extremely high rate ratio of 15.50**. The most disadvantaged areas are likely to have poorer access to public transport and other services including health services. The concentration of these dwellings in disadvantaged areas in country areas (largely towns) is problematic, as those who are dependent on this form of accommodation are already likely to have difficulty in accessing services, for reasons of lack of adequate and reliable transport and the concentration of many of these services in Adelaide.

The decline in unemployment was relatively consistent across the first four socioeconomic groupings of areas (Quintiles 1 to 4, with declines of between 45% and 51%); however, there was a smaller decline (26.4%) in the most disadvantaged quintile (Quintile 5) resulting in greater inequality. This suggests that current strategies to reduce unemployment are less effective for the most disadvantaged 20% of the population.

The proportion of children in welfare-dependent and other low income families declined by over one quarter in the most advantaged quintile (28.3%), compared to a marginal reduction of just six per cent in the most disadvantaged quintile, resulting in increasing inequality.

Table B: Trends in health inequalities in South Australia

Indicator (see relevant chapter for data definitions)	Change[1] in indicator for total population		Estimated extent of inequality[2]		
	Period (yrs)	%[1]	Period 1	Period 2	% change
Declining inequality					
Metropolitan Adelaide					
Cancer incidence: lung	11	-5.9	2.05**	1.57**	-23.4
Overweight four year old boys	6	44.9	1.27*	0.98	-22.8
Premature female deaths: ages 15-64 years	10	-16.5	1.82**	1.51**	-17.0
Hospital booking lists	12	6.3	3.00**	2.58**	-14.0
Admissions of males	12	26.7	1.25**	1.12**	-10.4
Country South Australia					
Infant deaths	10	-66.2	1.86*	1.44*	-22.6
Overweight four year old boys	6	100.0	1.34	1.19	-11.2
Admissions to private hospitals	8	74.2	0.38	0.42**	-10.5
Admissions of females	8	15.7	1.44**	1.29**	-10.4
Admissions to public acute & private hospitals	8	14.8	1.43**	1.29**	-9.8
Stable inequality					
Metropolitan Adelaide					
Child and Adolescent Mental Health Services	4	-1.5	2.36**	2.34**	-0.8
Premature male deaths: ages 15-64 years	10	-26.1	1.88**	1.90**	1.1
Termination of pregnancy	10	22.9	1.69**	1.58**	-6.5
GP services to males	7	-13.0	1.34**	1.38**	3.0
GP services to females	7	-13.6	1.33**	1.35**	1.5
Country South Australia					
Cancer incidence: lung	11	1.6	1.68	1.73**	3.0
Admissions of males	8	26.7	1.42	1.30	-8.5
Termination of pregnancy	10	32.0	1.23	1.25	1.6
GP services to females	6	-5.8	1.09	1.16	6.4
Low birthweight babies	10	7.4	1.20	1.16	-3.3
Increasing inequality					
Metropolitan Adelaide					
Community health service clients	10	-14.5	4.58**	8.31**	81.4
Domiciliary care service clients	14	33.4	1.97**	2.63**	33.5
Obese four year old boys	10	28.6	1.50**	1.88**	25.3
Low birthweight babies	6	2.6	1.27	1.57	23.6
Outpatient department attendances	22	n.a.	1.61**	1.98**	23.0
Admissions to private hospitals	8	43.9	0.58**	0.46**	20.7
Country South Australia					
Premature male deaths: ages 15-64 years	10	-28.0	1.28**	1.87**	46.1
Premature female deaths: ages 15-64 years	10	-10.2	1.22	1.55	27.0
Obese four year old boys	6	66.7	1.13	1.31	15.9
GP services to males	6	-6.7	1.14	1.25	9.6

[1] **Change in rate/ proportion eg. 5.9% drop in the incidence of lung cancer**

[2] **Inequality as measured by the ratio between the rate/ per cent in Quintile 5 and Quintile 1 (see page v). Trend in inequality is classified as stable where the ratio between the rates differs by less than 10% between the two periods**

* **indicates statistical significance: see page 24 for details**

Health inequality

The overall rate of use of community health services in **Metropolitan Adelaide** decreased, with the decline primarily evident among the most advantaged 20% of the population. The current differential in client rates is extremely large, reflecting the dependence of disadvantaged population groups on these services. Other services for which there were large increases in inequality, as well as large overall increases, were domiciliary care and admissions to private hospitals.

Inequality increased by nearly one quarter for low birthweight babies, and just over one quarter for four year old boys assessed as being obese; also of note is the 28.6% increase in the number of boys in this category.

Increasing inequality in health among residents of **country South Australia** was evident for just four indicators for which time series data were available.

The overall decline of 28.0% in premature male death rates was restricted to the two most advantaged quintiles of the country population. As a result of these declines, and increases in rates in Quintiles 3 to 5 (with the largest increase in Quintile 5), the level of inequality has increased substantially. Currently, men in the most disadvantaged areas are 87% more likely to die prematurely than those in the most advantaged areas.

Premature deaths of female residents of country South Australia also declined overall (down by 10.2%), again with increases in rates for residents in Quintiles 3 and 5. The rate ratio is a high 1.55.

There was a substantial (66.7%) increase in the proportion of four year old boys assessed as being obese, and an increase (15.9%) in the differential in rates across the socioeconomic groupings of areas.

There was also an increase in inequality associated with GP services to males, together with a small decline in the overall rate of these services.

A Social Health Atlas of South Australia

This section provides general background information about the atlas, as well as a guide to using the atlas.

Content

The atlas has nine chapters, an appendix, a bibliography and an index. The chapters are:

1. Introduction
2. Methods
3. Regional profile
4. Demography and socioeconomic status
5. Income support payments
6. Health status and risk factors
7. Use of services
8. Correlation analysis
9. Summary of trends

Chapter 1 provides an overview of the socioeconomic and health systems' context in which the data are presented. Chapter 2 describes the approach taken in analysing and mapping the data: this chapter contains important information on the limitations of the mapped data. The Appendix provides additional background information, and the Glossary, at the end of this section, defines some of the terms used.

Chapter 3 contains a demographic and regional profile of South Australia, based upon the new metropolitan health regions and the existing country regions.

Chapters 4 to 7 include the maps for each indicator, as well as associated commentary and data: an introduction to the topic(s) being mapped is also provided at the beginning of each chapter.

Chapter 8 shows the results of the correlation analysis. Chapter 9 contains details of the major changes in the data between this third and the first and second editions, as well as summary measures of the health differentials or inequalities (calculated from the health status and service utilisation data mapped in Chapters 6 and 7).

Using the atlas

Some people will use the atlas as a reference source, either going to particular maps (eg. a map of hospital admissions), or to the index to find a particular topic (eg. obesity) or indicator (eg. jobless families).

Others may choose to examine the correlation matrices and to then view the maps for indicators for which the data are highly correlated. Or they may access the data in a spreadsheet (available on the PHIDU web site) and regroup the areas to suit their own purpose, recalculating the percentages or standardised ratios to represent the new spatial groupings.

To assist users in reading the maps, the layout of the two map types used most frequently is described below. The more detailed discussion in Chapter 2 on the way in which the data have been analysed and presented is, however, important in terms of gaining an understanding of how best to use the data and maps. Users of the atlas are particularly encouraged to read this chapter to ensure they are aware of the deficiencies in the datasets presented, as well as in the mapping approach used.

Data measures mapped

The legend on the map pages indicates the format in which the data are presented. In the majority of cases, data are mapped as either a percentage or age standardised ratio (the process of standardisation is described in Appendix 1.3, *Analysis and presentation of data*). The legend also shows the data ranges used to indicate the spatial distribution of the characteristics being mapped.

Footnotes on the map page draw attention to particular aspects of the mapped data.

Description by regions

Each indicator has an introduction to the topic, including relevant contextual information. The introduction is based on all areas mapped (i.e. metropolitan regions and country South Australia, or just metropolitan regions, where data for country South Australia was not available, or was not of sufficient quality – eg. there were insufficient numbers of cases). The table in the introduction includes a comparison over time, where data from previous years are available.

The small area data are presented under the headings 'Metropolitan regions' and 'Country South Australia' and are based on the health regions, in order to provide the most relevant information to planners and service providers. The metropolitan regions are the Central Northern Adelaide Health Service and Southern Adelaide Health Service. The seven regions in country South Australia are Hills Mallee Southern, Wakefield, South East, Northern and Far Western, Eyre, Mid North and Riverland.

In previous editions of the Social Health Atlas, the metropolitan data were based on Metropolitan Adelaide, which included the Municipality of Gawler. However, the new metropolitan health regions exclude Gawler (it is now part of the country region of Wakefield). In order to make the data shown in this edition comparable with the earlier data which included Gawler, the table in the introduction shows totals for Metropolitan Adelaide (including Gawler), country South Australia (excluding Gawler) and South Australia.

The sections under the headings 'Metropolitan regions' and 'Country South Australia' provide a summary of the data, including a description of the spatial pattern of data. Results of the correlation analysis are then summarised, where correlation is the degree to which one indicator is statistically associated with another. Results of the correlation analysis are provided in Chapter 8.

Data for each region are discussed with a focus on areas with rates or proportions that vary the most from the average, e.g. those with the largest and smallest proportions, or most elevated and lowest ratios. Areas with large numbers (although not necessarily above the level expected given the population size and structure) are also listed. Where large numbers are discussed, the numbers are mentioned first in parentheses following the area name; otherwise the first number is the proportion or ratio followed by the population number. The numbers (as well as the percentages, rates and ratios) for all of the areas are available in electronic form (see Appendix 1.1).

Metropolitan regions

Background

The area covers the two metropolitan health regions. The spatial unit mapped is generally the Statistical Local Area (SLA), an area designed by the Australian Bureau of Statistics for the presentation of data (see Glossary). For the Burden of Disease estimates and infant deaths, where there are small numbers of cases, areas have been aggregated to larger groupings to enable spatial analysis (referred to as Burden of Disease areas).

A key map to assist in the location and identification of particular SLAs is on a fold-out card at the end of the atlas.

The map

The map opposite for jobless families (Map A) is an example of the map shown most commonly throughout the atlas for the metropolitan regions. It shows data mapped to SLAs, where the darkest green shade is used in areas with the highest proportions of families, with children under 15 years of age, where no parent is employed. The lighter shading shows areas with lower proportions, with the lowest left white.

Data ranges by region

The map page also includes a graph summarising the extent of variation at the SLA level in each region and in the total metropolitan regions, with comparative totals for country South Australia and the State. The vertical line shows the average proportion or rate for each region, and the horizontal line shows the lowest and highest values in the region. This provides an indication of the extent of inequality, where greater variation in the proportion or rate reflects greater inequality.

Country South Australia

The area outside of the metropolitan regions is referred to in the report as 'country South Australia'. The spatial unit mapped is the SLA, other than for the metropolitan regions, for which the average rate or proportion is mapped, to enhance comparisons between the metropolitan regions and country areas.

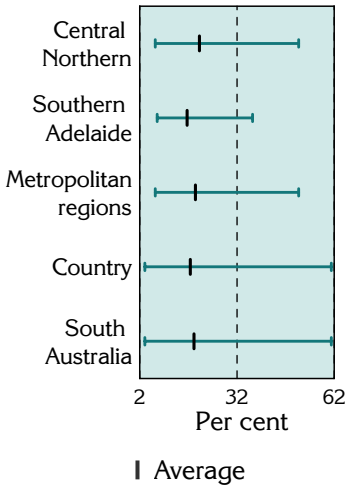
Towns with a population of 1,500 or more (and which can be identified in the data) are represented on the maps as circles.

As noted above in relation to the map of metropolitan regions, a key map to assist in the location and identification of particular SLAs is on a fold-out card at the end of the atlas.

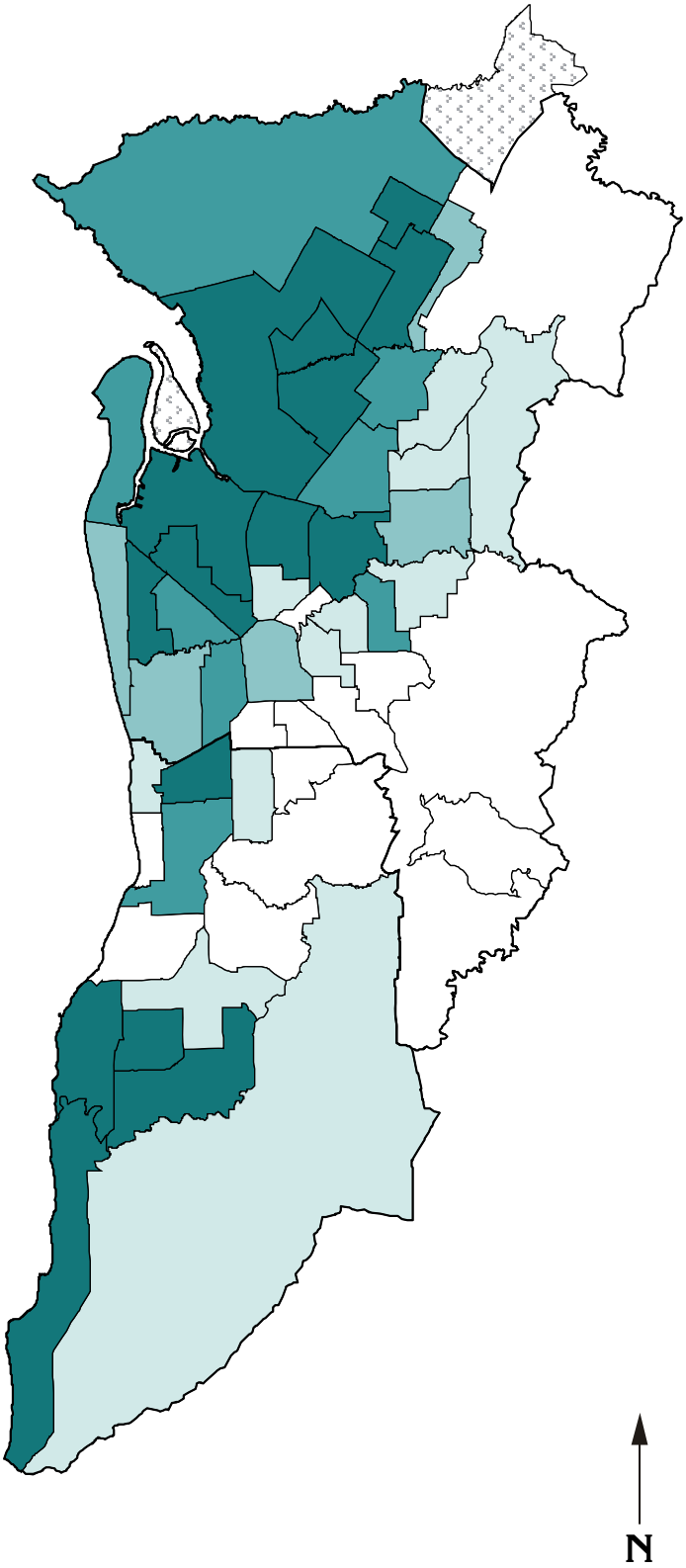
The map overleaf (Map B) is an example of the map shown most commonly for South Australia. It shows data mapped to SLAs, where the darkest green shade is used in areas with the highest standardised ratios (SRs). The data have been age standardised to allow comparisons to be made of the rates of women smoking in pregnancy, regardless of variations in the geographic distribution of this population group. In brief, the process of standardisation compares the rate in an SLA for an event (eg. smoking in pregnancy) with the state-wide rates: in this map, the results are shown as an index, with the State or, in some cases, the metropolitan regions, set to 100. Standardised ratios of over 100 show that the number of pregnant women who reported smoking is higher than would have been the case had the state-wide rates applied in the SLA. Ratios below 100 indicate there were fewer women smoking while pregnant.

For example the SLA of Murray Bridge has a standardised ratio (SR) of 131**, calculated for 325 women. This SR shows that there were 31% more women in Murray Bridge who smoked during their pregnancy than would have been the case if the state-wide average rate of smoking in pregnancy had applied: this is a poorer outcome than the average across the State.

Map A
Jobless families with children aged less than 15 years, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent jobless families, by SLA

- *22.0% or more*
- *18.0 to 21.9%*
- *14.0 to 17.9%*
- *10.0 to 13.9%*
- *fewer than 10.0%*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

To the north-west of Murray Bridge, the SLA of Adelaide Hills Balance, mapped in white, has an SR of 64**, calculated for 63 women. That is, there were 36% fewer women smoking during their pregnancy than would have been the case if the state-wide average rate of smoking in pregnancy had applied: this is a good outcome.

Where the standardised ratio (SR) is significantly different from the State rate under a test of statistical significance, this is indicated by an asterisk(s) attached to the SR – for example, 131**. One asterisk indicates that the SR is statistically significant at the five per cent level, that is, the likelihood of that ratio being due to chance is five per cent; two asterisks indicate that the SR is significant at the one per cent level, or that there is a smaller, one per cent chance of that SR occurring by chance.

Data ranges by region

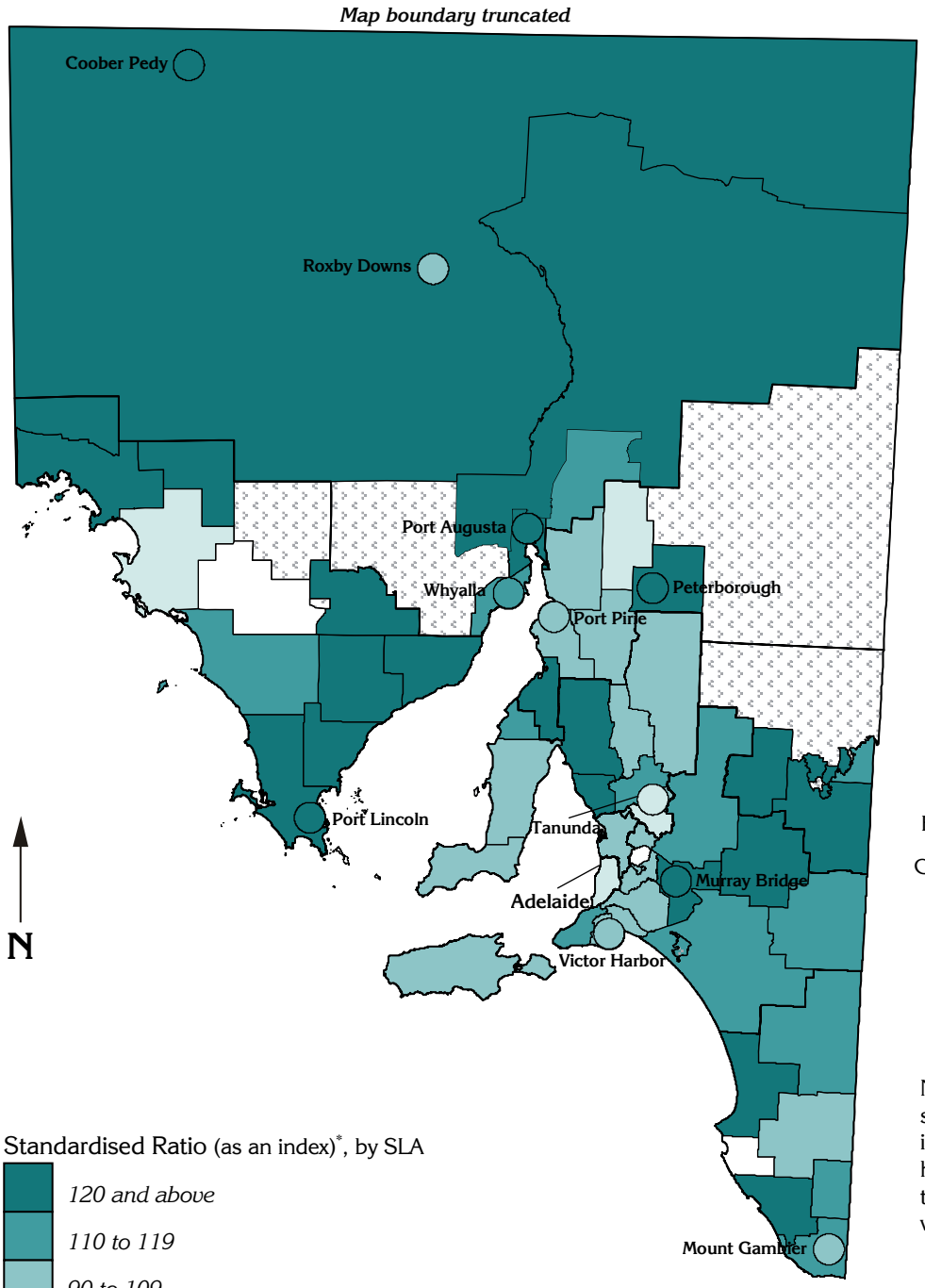
The map page also includes a graph summarising the extent of variation at the SLA level in each region, and for county South Australia in total. The vertical line shows the average proportion or rate for each region, and the horizontal line shows the lowest and highest values in the region. This provides an indication of the extent of inequality, where greater variation in the proportion or rate reflects greater inequality.

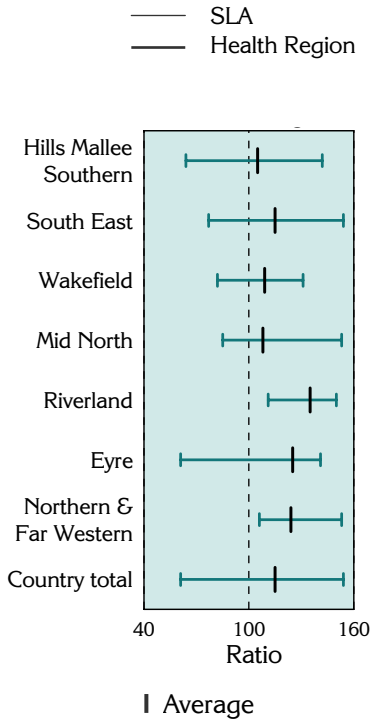
Additional information

Remoteness

In addition to the map, the map page includes a graph showing the average measure for the indicator in each of five levels of remoteness, as determined by the ASGC remoteness classification (see Map B). This classification is described in more detail in Chapter 2, under the heading Accessibility and Remoteness. In brief, each SLA in South Australia has been allocated to one of five classes, which range from Major Cities, through Inner Regional, Outer Regional and Remote, to Very Remote. The average percentage, rate or ratio for each of the five categories is then calculated for each indicator and presented as a graph. A brief comment on the distribution across the remoteness classes follows the description of country South Australia.

Map B
Smoking during pregnancy, South Australia, 1998 to 2001





Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

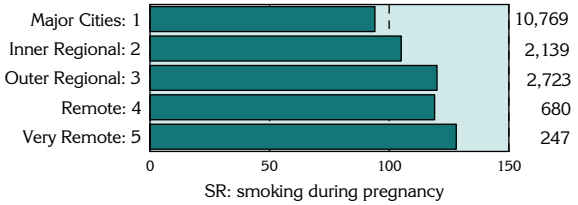
Standardised Ratio (as an index)*, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped#*

*Index shows the number of women smoking during pregnancy in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases

ASGC Remoteness classification Women



Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

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Contents

6 Health status and risk factors …*cont*

7 Use of services

List of maps

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Glossary

BoD Burden of Disease

IRSD Index of Relative Socio-Economic Disadvantage

SLA Statistical Local Area

SR age-standardised ratio, ratio per 100,000 population, indirectly standardised
- SAR age-standardised admission ratio, ratio per 100,000 population, indirectly standardised
- SCR age-standardised client ratio, ratio per 100,000 population, indirectly standardised
- SDR age-standardised death ratio, ratio per 100,000 population, indirectly standardised
- SIR age-standardised incidence ratio, ratio per 100,000 population, indirectly standardised
- SPR age-standardised participation ratio, ratio per 100,000 population, indirectly standardised

.. not applicable
n.a. not available
– nil or less than half the digit shown

1 Introduction

Outline of the chapter

This chapter introduces the key influences on our health and wellbeing, identifies the importance of socioeconomic and related factors on health, and describes some of the key patterns that are illustrated in the range of data and maps in this third edition of the Social Health Atlas of South Australia.

The aim of the atlas is to provide policy makers, practitioners and communities with information about the health and wellbeing of South Australian people of all ages, and to illustrate some important factors that are associated with their health and wellbeing. It also highlights the substantial disparities in health that are evident across the population, within different population sub-groups, and at a regional level.

The atlas will also be useful to other State government sectors (such as education, housing, justice, welfare, environment and planning), local government, non-government and other agencies, and those in the community who are interested in health, and the socioeconomic and other factors that influence it.

Defining 'health and wellbeing'

In line with the recommendations of the Generational Health Review, the South Australian Government has embarked upon a health reform program that represents 'a shift in the way 'health' is conceptualised' (DH 2004). The approach recognises the need to define 'health' in a way that reflects its positive dimensions, rather than just 'the state of not being ill'. Newer definitions now describe health in terms of broader wellbeing, 'an everyday resource – the capacity to adapt to, respond to, or control life's challenges and changes' (Frankish et al. 1996). This corresponds better to the concept of being able to pursue the attainment of goals, skills and ongoing development, and links health and overall wellbeing closely together (DH 2004).

However, good health is not only individual 'quality of life'. There is evidence that investing in a healthy population also brings substantial benefits for the economy. It has been estimated that increasing life expectancy at birth by ten per cent will increase the economic growth rate of a nation by 0.35% a year (Sachs 2001). On the other hand, ill health is a heavy financial burden. Fifty per cent of the growth differential between rich and poor countries is estimated to be due to ill health and life expectancy (Sachs 2001). Thus, good health is also an essential element for social cohesion, economic growth and sustainable development (Byrne 2004).

Above all, health is a fundamental human right, and a basic need that no one should be denied. It is the expectation of every citizen that they will be accorded the "right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control" (Article 25, United Nations 1948).

What determines the health and wellbeing of South Australians?

Increasingly, research shows that health is the product of many different factors (Evans & Stoddart 1990). Those factors that are believed to have the most important effects are known as 'the determinants of health and wellbeing'. These include individual characteristics, such as the genes that we inherit from our parents, and aspects of our own beliefs, behaviours and coping abilities. Other significant influences operate in our families, neighbourhoods, communities, culture or kinship groups, and society as a whole.

The key influences or 'determinants' of our health are biology and genetic endowment; healthy growth and development in childhood; personal health practices and coping skills; social support networks; health services; gender and sexuality; culture, spirituality and kinship; income and social position; education; employment and working conditions; and the physical and social environments (CIHI 2004). These factors do not exist in isolation from each other, but function as a complicated, interactive web (CIHI 2004). Many of the determinants overlap, and more remains to be learned about specific factors, and the ways in which they influence our health.

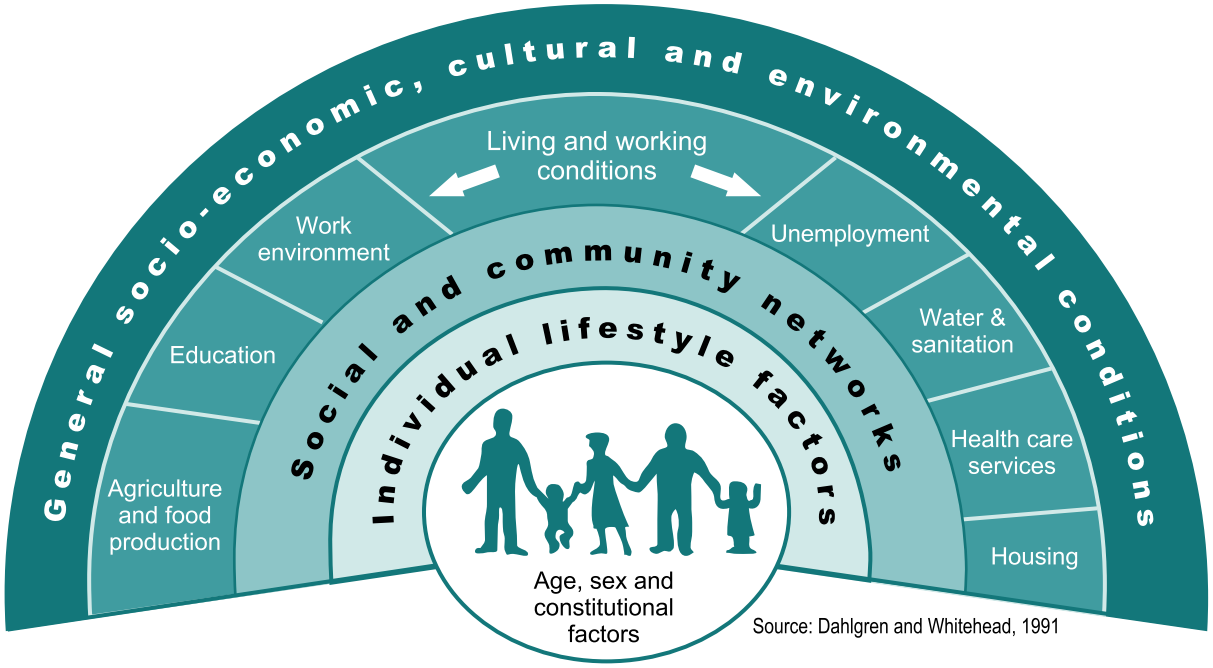
Figure 1.1 illustrates the key determinants in terms of 'layers of influence', starting with individual factors and extending to aspects of the wider community (Dahlgren & Whitehead 1991). While health services make a direct contribution to the health and wellbeing of a population, Figure 1.1 shows that many of the key determinants of our health and wellbeing are found in non-health sectors such as education, housing, employment, and the environment. Recently, it has been suggested that an outer layer incorporating global environmental changes should also be added to the diagram (McMichael 2005).

This model links influences from various levels – including society-wide factors (e.g., physical, environmental, socioeconomic), middle-level factors (e.g., health care and other services) and individual and small-group factors (e.g., tobacco use), to explain the origins of health and wellbeing (Halfon & Hochstein 2002).

Thus, health is the result of multiple determinants that operate in combination, within genetic, biological, behavioural, social, cultural and economic and ecologic contexts that have differing influences at various points in our lives (Bronfenbrenner & Ceci 1994). For example, family environment has a greater effect on the wellbeing of infants and young children early in life, while neighbourhood and peer group factors and individual behaviours become more important as older children move towards adolescence and adulthood (Halfon & Hochstein 2002).

The life pathways that result are the product of cumulative risk and protective factors and other influences in our social environments. A single risk factor (being obese or having experienced child abuse) may contribute to a wide range of problems, just as one protective factor (good nutrition or having a supportive family) may help to defend against other problems (DCPC 1999). Environmental risks and protective factors can occur independently, or may cluster together in socially patterned ways (HC 1997).

Figure 1.1: The key determinants of health and wellbeing



Social and economic factors are among the most important individual-level determinants, and one's overall health and wellbeing tend to improve at each step up the economic and social hierarchy. Thus, people with a higher income generally enjoy better health and longer lives than people with a lower income (Marmot et al. 1984; Marmot 2002). The rich are healthier than the middle classes, who are in turn healthier than the poor. This is known as 'the social gradient'. Furthermore, this gradient exists for a wide range of other outcomes – from mental health and coping behaviours, to literacy and mathematical achievement (Frank & Mustard 1994). The gradient is evident whether one looks at differences in current socioeconomic status or in that of family of origin. These effects seem to persist throughout the lifespan, from birth, through adulthood and into old age, and possibly to the next generation (Keating & Hertzman 1999; Najman et al. 2004).

For most people in South Australia, the important factors in explaining these variations appear to be not only material conditions, but also the social advantages attached to those conditions. In modern societies such as ours, these have become major influences on our health and wellbeing. As such, they have a substantial impact on the costs of human suffering because of poor health, and on the financial costs borne by the health care system and society more widely.

Other models of health determinants have also been developed. In 1986, the Ottawa Charter for Health Promotion recognised that the fundamental conditions for health and wellbeing were peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity.

More recently, the World Health Organization updated *"The Solid Facts"*, which identified the

following areas as important social determinants where action could be taken through public policy to improve health: the social gradient; stress; early life; social exclusion; work and unemployment; social support; addiction; food; and transport (WHO 2003).

Together, all these models identify the important roles played by public policy, history and culture, aspects of our environment, access to services, community and social support, behaviours and skills, as well as biological factors, in determining our health and wellbeing.

Thinking about 'population health'

Health can be described at many different levels: the personal health of an individual, the health of an area or local community, or the overall health of a group of people or a population: for example, the health of children, or the health of Aboriginal people. The direction of the health reform in South Australia has a greater focus on 'population health', in addition to the traditional focus on individual health care.

A population health approach reflects the evidence that factors outside the health care system or sector also significantly affect health (HC 2004). The Department of Health has chosen to use a definition of population health based on the Health Canada definition (DH 2005), which views population health as a plan of action as well as a means of understanding health determinants:

> *Population health aims to improve the health of the entire population and to reduce health inequalities among population groups by addressing and acting upon a broad range of factors and conditions that influence health.*[1]

For Aboriginal and Torres Strait Islander peoples in South Australia, an extension of the definition of wellbeing proposed by the National Aboriginal Health Strategy (NAHS) Working Party in 1989 is also pertinent (NAHSWP 1989):

> *Not just the physical wellbeing of the individual but the social, emotional and cultural wellbeing of the whole community. This is the whole-of-life view and it also includes the cyclical concept of life-death-life.*

This definition clearly indicates that achieving health and wellbeing is an attribute of communities as well as of the individuals within a community; and it identifies cultural wellbeing, along with physical, social and emotional wellbeing, as equally important (Devitt et al. 2001). Thus, the aim of a population health approach should be 'that Aboriginal and Torres Strait Islander people enjoy a healthy life equal to that of the general population, that is enshrined by a strong living culture, dignity and justice'.[2] This recognises the importance of achieving improvements to Aboriginal and Torres Strait Islander health and acknowledges the particular health issues facing the Indigenous population.

Both individual and population-level influences are important in determining the factors that underpin the health and wellbeing of South Australians. However, programs to improve the health of populations differ from those designed to assist with the health problems of individuals (Schwartz & Carpenter 1999). Individual approaches use more reactive strategies, focusing on the care of a person and responding to their evident health needs; and rely on services being available, accessible, appropriate, and effective. Population health requires more proactive strategies, which use system-wide approaches to address the factors that determine the health of the population of interest. The focus is on whole populations, and on programs being available, appropriate, effective and reaching high coverage (Rose 1985; Alperstein & Nossar 2002).

A population-based approach considers the interconnectedness of all health determinants and mediating factors, and their complex interactions that influence the health of the community. Thus, 'taking a population approach' means establishing strong links across many different sectors and working together to take action to contribute to the community's health overall. There are also a number of benefits that investing in a population approach offers: increased prosperity, because a well-functioning and healthy population is a major contributor to a vibrant society; reduced expenditures on health, education and other social problems; and overall community stability and wellbeing for South Australians.

Health and other inequalities

The level of health and wellbeing of the South Australian population is high when compared to the populations of many overseas countries. Examples include our life expectancy and overall infant mortality rates.

However, these summary statistics hide substantial differences in the health and wellbeing of specific groups within our population. For example, compared with other South Australians, Aboriginal people are disadvantaged across a broad range of social and economic domains, including education, health, employment, income and

[1] Health Canada, Population and Public Health Branch (2001) *The Population Health Template: Key Elements and Actions that define a Population Health Approach, July 2001 Draft,* Health Canada.

[2] As defined in the Strategic Framework for Aboriginal and Torres Strait Islander Health (NATSIHC 2003).

housing. This is the result of many underlying causes, including the intergenerational effects of forced separations from family and culture, and the lasting impacts of colonisation and racial discrimination. This has placed them at greater risk of poorer life outcomes; and there has been substantial evidence for decades, that the health of Aboriginal people is significantly worse than that of the non-Indigenous population (ABS & AIHW 2005).

These differences are described as 'inequalities'. Numerous inequalities exist across the population in South Australia and they tend to divide our community into different groupings. There are many types of inequality – age, sex, ethnicity and race, social and economic position, disability, geographical area, remoteness, and so on. Some dimensions of inequality, such as age, are unavoidable and unable to be altered. Other inequalities occur as a result of differences in access to education, material resources, safe working conditions, effective services, living conditions in childhood, and so on (Harris et al. 1999).

We can identify three levels of inequality in health:

- inequality in access to good health care (for example, some refugees have no access to primary health care (RACGP 2002));
- inequality of health outcomes (for example, there are around 18 years' difference in average life expectancy at birth between Aboriginal and non-Aboriginal people (ABS 2003); and
- inequality in other modifiable factors that determine our health (for example, in education, employment or housing).

Many inequalities in health are potentially avoidable and, therefore, the fact that they occur implies a degree of injustice, or inequity (Whitehead 1990). Such inequalities result because of differences that are unfair, such as unequal access to health services, nutritious food, adequate housing, or safe transport (Harris et al. 1999; Braveman 2003). Research suggests that, while the community accepts a degree of inequality in wealth across the population, there is far less tolerance of inequalities in health (Dahlgren & Whitehead 1992; Shaw et al. 2001).

As discussed earlier, 'health inequalities' generally refer, not only to variations between individuals, but to differences between social groups (Braveman et al. 2000). In the atlas, health inequalities describe the disparities in health associated with people's different and unequal positions in society; thus, the concept links the health of individuals to the structures of social and economic inequality that shape their lives (Graham 2004).

The impact of socioeconomic inequalities on health

Throughout the atlas, there is evidence of the powerful influence of social and economic factors on the health of South Australians, and the health inequalities that are present. The term, 'socioeconomic status' is used to encompass these factors, and to illustrate their effects on health and wellbeing across the population. The words 'health inequalities' are generally used as an abbreviation for 'socioeconomic inequalities in health', whether measured at an individual or at an area level. Health inequalities that relate to other structures of inequality – like gender or ethnicity – are usually labelled as gender inequalities in health, ethnic inequalities in health and so forth (Graham 2004).

Economic inequality is apparent in the uneven distribution of wealth in society. It is seen in the unequal distribution of the ability to purchase 'goods' such as housing, education, recreation, health care and other opportunities, and the choice to do so (Preston 1999). Social inequality is the expression of the lack of access to these opportunities and represents a degree of exclusion of people from full and equal participation in what we believe is worthwhile, valued and socially desirable (Preston 1999). Thus, economic and social inequalities are interwoven, and their combined impact results in limited opportunities and life chances for many who are affected by them (Bronfenbrenner & Ceci 1994). This is particularly the case for Aboriginal people.

Such inequalities tend to stratify the community, with those who have the most resources, opportunities and power to choose, at the top; and those with increasingly less, in layers below them. The result is entrenched and inequitable differences in wellbeing across the population (Graham & Kelly 2004). For many disadvantaged groups within the population, the impact of social inequality limits their ability to influence change, and makes them more vulnerable to poorer health and wellbeing. Some of these groups include Aboriginal people; people who have disabilities; those for whom English is not their first language; young people who are or have been in the care of the state; and refugees from a range of cultures and ethnic backgrounds.

Socioeconomic disadvantage takes many forms. For some, it is the inability to obtain the essentials of life such as shelter and adequate food; for others, it is a matter of low income; for others, a problem of discrimination and exclusion from

opportunities in society (Spicker 2002). Defining disadvantage only in terms of poverty or low income minimises the importance of access to appropriate services, safe environments, and the quality of housing or level of education that is available (Najman 1993). A complete definition should extend beyond a lack of economic resources to encompass many of the serious environmental, structural and social issues faced by individuals, their families and their communities (Mathers 1996; Spencer 1996). Examples of these are under- and unemployment, homelessness or housing instability, discrimination and racism, unsupported lone parenthood, educational under-achievement, admission into state care, violence and abuse, and mental health problems (Hetzel et al. 2004).

As in other developed countries, increased national prosperity has yielded a steady improvement in the overall health of Australians (OECD 2003). Yet, in line with patterns elsewhere, socioeconomic inequalities in the risks (relative differences) of ill health and premature death between socioeconomic groups remain (Mackenbach et al. 1997, 2002). These are matched by inequalities in the rates (absolute differences) of morbidity and mortality (Lahelma et al. 2002; Graham 2004).

There is substantial evidence of the impact of socioeconomic factors on the health of South Australians. For example, in Metropolitan Adelaide in the early 1990s, it was estimated that socioeconomic disadvantage explained between ten and fifty per cent of the variation in mortality between geographic areas, depending on sex and cause of death. Overall, 34 per cent of male deaths and at least 14 per cent of female deaths could be directly linked to socioeconomic disadvantage (CSAES 1993).

Key indicators of population health

In South Australia, there are significant inequalities in health between men and women; the young and the aged; between different areas and neighbourhoods; between the city and the country; between people who have work and those without work; and between people with different incomes and levels of education (Glover et al. 1999). Some groups of people in South Australia, such as Aboriginal people, have generally much poorer health than the population as a whole.

Information is presented in the atlas to describe a number of factors that illustrate aspects of the health of the South Australian population. In particular, the aim is to identify some of the health inequalities that currently exist between different population groups and geographical areas across the State.

A summary of this information (Table 1.1), presented as a series of health indicators, highlights existing inequalities and draws attention to the influence of social, economic and environmental factors on health.

The ensuing picture is one of significant inequalities in health across the population.

- Life expectancies for South Australia and Australia are similar. The major disparities are between the Indigenous and non-Indigenous populations (Indigenous life expectancy at birth is 18.1 years lower for males and 14.8 years lower for females (ABS 2003), and by socioeconomic status.
- On a scale from 'excellent' to 'poor' (including 'very good', 'good' and 'fair'), almost one fifth of South Australians rated their health as 'fair ' or 'poor' - two per cent above the Australian average (after adjusting for age difference between the South Australian and Australian populations).
- Infant mortality in South Australia is low by Australian standards, but is very high among the Indigenous population (46.2% higher than for all South Australians); and among those who are socioeconomically disadvantaged. The most disadvantaged 20% of the State's population have an infant mortality rate 62.9% higher than the most well off.
- Premature death rates (deaths before 65 years of age) are 4.1 times higher for the Indigenous compared to the non-Indigenous population, and 2.8 times higher among people living in the most disadvantaged areas of the State. For substantiated cases of child abuse and neglect, the differential is 12.8 times, a very considerable difference.
- Participation of 16 year olds in full-time education is almost one third lower, and unemployment is 5.6 times higher, in the most disadvantaged areas of the State. These differences are supported by the Index of Relative Socio-Economic Disadvantage (IRSD), a summary measure of disadvantage calculated from 2001 Census data.

Table 1.1: Selected key indicators for population health in South Australia[1]

Indicator	SA	Difference[2] between		
		SA cf. Aust	Indigenous cf. Total population in SA	Lowest cf. highest socioeconomic status[3] in SA
Life expectancy (yrs)				
- at birth				
- males	76.6	+0.2 yrs	-18.1 yrs	-3.6 yrs
- females	82.0	+0.3 yrs	-14.8 yrs	-1.9 yrs
- at 60 years				
- males	20.8	..	-7.4	..
- females	24.7	..	-8.5	..
Self-rated health:				
% rating health as fair or poor	18.2	+2.0%	..	+73.6%
Infant mortality (rate)	4.3	-24.6%	+46.2%	+62.9%
Premature mortality (rate)	168	-2.5%	+4.1 times	+2.8 times
Substantiated cases of child abuse and neglect (rate)	747	..	..	+12.8 times
Educational participation (%)	80.1	+4.7%	..	-31.8%
Unemployment (%)	6.8	+8.3%	..	+5.6 times
Index of Relative Socio-Economic Disadvantage (index)	995	-5%	..	-39.4%

[1]**Data are for various time periods: life expectancy, 1996 to 2001; self-rated health, 1995; mortality rates, 1997 to 2000; child abuse and neglect, 1996 to 1999; and educational participation, unemployment and the Index of Relative Socio-Economic Disadvantage, 2001**

[2]**'Difference' shows the variation between the first and the last variable eg. SA compared to Australia**

[3]**Socioeconomic status is based on area of residence, see Methods page 23**

Note - Rates are: for infants, deaths under 12 months of age per 1,000 live births; for premature mortality, deaths before age 65 years per 100,000 population, indirectly standardised; child abuse, cases per 100,000 population, indirectly standardised. Educational participation is proportion of 16 year olds in full-time education; unemployment is the proportion of the labour force unemployed; and the Index of Relative Socio-Economic Disadvantage index is based around 1000 as the average index score for Australia

Sources: Life expectancy; ABS 2003 and Unpublished data; Tennant et al. 2003; Hetzel et al. 2004.

Indigenous disadvantage and health inequality

There are over 25,000 Aboriginal people living in South Australia in a total population of just over 1.5 million (ABS & AIHW 2003). More than half of the State's Indigenous population lives in urban areas. The Indigenous population is growing rapidly when compared with the non-Indigenous population (DAARE 2003). At 30 June 2001, the Indigenous population of South Australia had a median age of 20.8 years, compared to the non-Indigenous population's median age of 37.8 years (SA Government 2003). Thus, the Indigenous population has a much younger age profile than the rest of the population in South Australia: this is the result of higher birth rates and earlier age at death.

In South Australia, inequalities exist for Aboriginal people at all ages and in all settings, and are the cumulative result of events experienced throughout a lifetime (NATSIHC 2003; SA Government 2003). Compared with other Australians, Aboriginal people and Torres Strait Islanders are disadvantaged with regard to a broad range of socioeconomic indicators, including education, employment, income and housing, and are therefore at greater risk of ill health and poorer outcomes (ABS & AIHW 2003). These disparities are also interdependent, and have resulted in life-long disadvantage, inequity and discrimination.

The effects of social inequality and dispossession have been profound for Aboriginal people in South Australia. The legacy of colonisation produced rapid and pervasive social and cultural change. The impact of this change resulted in complex effects on health and wellbeing, some of which have been cumulative over generations (McKendrick & Thorpe 1998; Robinson 2002). The resulting trauma, loss and disempowerment have contributed to the further erosion of culture and community, and undermined the holistic nature of Indigenous health and wellbeing as previously defined. Aboriginal and non-Aboriginal practitioners and scholars have long identified social inequality, racism and oppression as the key issues in Aboriginal health and wellbeing (Ring 1995; Devitt et al. 2001).

There are considerable differences between the health of Aboriginal and non-Aboriginal South Australians. Aboriginal people do not live as long, with their life expectancy at birth around 18 years less than for other South Australians (ABS 2003). Aboriginal people also experience a greater burden

of ill health when compared with non-Aboriginal Australians (NATSIHC 2003; ABS & AIHW 2003). Aboriginal people are more likely to die at younger ages than other South Australians, and the death rates for Aboriginal people are estimated to be more than three times those for non-Aboriginal people (SA Government 2003).

Over the last decade, the Indigenous infant mortality rate has remained well above that of the total South Australian population. Babies of Aboriginal mothers are also over twice as likely to be of low birthweight than babies born to non-Aboriginal mothers. As indicated previously, early life factors and experiences may influence growth, the ability to learn, physical and mental health, and resilience in later life, and may also have intergenerational effects.

In the South Australian Indigenous population, there is a significantly higher prevalence of diseases such as diabetes, hypertension, and a range of communicable conditions (ABS 1997). Rates of non-fatal self-harm, mental illness and substance use are also higher (Swan & Raphael 1995), and Aboriginal people experience greater levels of injury and interpersonal violence. For example, rates of hospitalisation in 2000/01 for injury or poisoning were 1.9 times higher for Aboriginal males and 2.4 times higher for Aboriginal females, compared with non-Aboriginal males and females respectively (ABS & AIHW 2003).

Aboriginal children are more likely than non-Aboriginal children to be notified for child abuse and neglect (Tennant et al. 2003). The reasons for this are complex but reflect, in part, the legacy of colonisation, discrimination and the stolen generations, and the greater socioeconomic disadvantage suffered by Aboriginal families.

The health and wellbeing of Aboriginal South Australians are also more likely to be affected by exposure to environmental risk factors such as poorer housing and inadequate environmental infrastructure (NATSIHC 2003). Many Aboriginal people in remote communities do not have access to the same range and cost options for healthy food as non-Aboriginal South Australians (ABS & AIHW 2003). The ability to store and prepare fresh food is also limited by the lack of adequate facilities and infrastructure such as kitchens, storage facilities, and a reliable source of electricity (NATSIHC 2003; ABS & AIHW 2003). Thus, there is an urgent need to improve standards of environmental health, including housing and essential services, for these Aboriginal communities (NATSIHC 2003).

Many of these factors highlight the extent of social disadvantage experienced by Aboriginal people, and the longer-term consequences for their health and wellbeing. The recognition of the extent of disadvantage experienced by the Indigenous population has framed a number of new approaches in South Australia. *Doing it right* is the South Australian Government's policy framework for action: the Government's commitment to Aboriginal families and communities in South Australia (DAARE 2003).

Within this framework, the following goals are outlined:

- *That Aboriginal South Australians will have the same choices as other South Australians and the same opportunities to share in the social and economic advantages of living in our state.*
- *That all South Australians will continue to be enriched by Indigenous culture and values, with respect by the wider community based on a new understanding and mutual esteem.*
- *That engagement and partnership with Aboriginal communities will be the platform for sustained improvement in the well being of Aboriginal families.*

In line with this direction, improving the health of Aboriginal people is a major focus of the South Australian Government's health reform agenda.

Limitations in the coverage of the atlas

This edition of the atlas is composed of a range of available data for South Australian people of all ages. The information has been collated from across sectors and from a variety of sources. However, there are some significant gaps. These may reflect a lack of data, the inability to access data that has been collected or a lack of available data at a small area level. This has resulted in a less than complete picture of the health and wellbeing of people in South Australia.

Particular deficiencies emphasise the paucity of information about health services that are provided in South Australia. For example, there are routine data pertaining to acute hospital admissions and the reasons for those admissions but generally limited to the total number of admissions, not for individuals[3]. This means that one person with severe asthma may have had multiple hospital admissions, and thus is counted more than once. A similar situation arises for data on consultations with general practitioners, which are based on the number of attendances and services provided, and not on individuals.

Furthermore, there are limited available data about

[3] Data collected in OACIS provide details for individuals in public acute, but not private, hospitals.

the extent or nature of the services established to provide services to particular population groups, for example, refugees or Aboriginal people. In addition, at a state level, the access and use of services by a range of socioeconomically disadvantaged people cannot be analysed, other than by their area of residence. These deficiencies have significant implications for the planning, monitoring, resourcing and evaluation of health services for people in South Australia over the longer term.

With respect to non-health services, there are also areas where data are unavailable for analysis. Examples include childcare and data for people with disabilities including the nature of services provided to them. However, the atlas documents considerable information about the demography and socioeconomic position of people, various aspects of their health status, their use of a range of services and their area of residence.

There are many datasets in Australia that include information which, when linked, can potentially increase their value for research and policy analysis. This is equally so for small area analyses. Data linkage can also lead to changes in the way services are delivered. This method is attracting increasing attention in Australia and in South Australia. It is to be hoped that ways can be found to enable data linkage to proceed in this State in a much broader and speedier way than at present.

The indicators presented in this atlas are those for which reliable data are available, in particular data that can be mapped to show variations by area, across Adelaide and South Australia. In some cases, data are not available to show trends over time, or variations between population groups, for some aspects of the social, economic and environmental factors that we wish to show. In others, the data are not ideal but are the best available. Table 1.2 indicates data that would have been useful for a range of factors that impact on health and wellbeing, but for which there are no reliable small area datasets that describe these factors.

Table 1.2: Examples of potential indicators for which suitable local area data were not available

Topic	Potential indicators and their relevance
Physical environment	Air quality; levels of noise, dust (including from industry)
Refugees	Language competency; emotional and health issues
Social support, social networks	Ability to borrow money in a crisis; levels of trust among individuals or within specific neighbourhoods
Interpersonal violence	Levels of domestic and other forms of violence; impact on quality of life
Levels of adult literacy	Reading/writing levels: ability to read instructions, labels
Disability	Levels of different forms of disability; impact on quality of life
Financial stress	Levels of personal and household debt
Homelessness	Personal characteristics; duration of homelessness; health problems
Housing quality	Availability of electricity, running water; insulation in houses
Work environment	Sickness absence from work; sense of control over work; extent of effort-reward balance or imbalance; job security

The burden of chronic diseases

As in other developed countries, Australia is now facing an increasing social and economic burden because of the impact of chronic diseases (for example, heart disease, stroke and diabetes) and their associated biomedical risk factors (such as obesity and overweight, high blood pressure, tobacco smoking, and physical inactivity) (AIHW 2002).

Chronic diseases are major contributors to the extent of illness, disability and premature mortality in the population, and are more prevalent now than at any earlier period in human history (Crews & Gerber 1994). They are estimated to comprise the greatest proportion of the burden of disease, mental health problems and injury for the Australian population as a whole (about 80%), and for particular sub-groups (Mathers et al. 2000).

In South Australia, these diseases and conditions contribute very substantially to the burden of premature death and early loss of life, and of morbidity and disability (DH 2004). It is estimated that at least 450,000 people over the age of 20 years in the State have at least one preventable chronic disease, and the burden is growing (DH 2004). For Aboriginal communities, there are higher levels of chronic disease, which occur much earlier in life (DH 2004).

Chronic conditions also continue to exert considerable financial pressures on the South Australian health system and the community generally. More than one third of hospital casemix expenditure in SA for 2002/03 (an amount of $300 million or 36% of the total) can be attributed to four chronic disease groups: cardiovascular health, diabetes, arthritis and musculoskeletal conditions, and asthma/chronic pulmonary disease (DH 2004).

In Australia, a disproportionate chronic disease burden is experienced by socioeconomically disadvantaged groups within the population, especially Aboriginal people (DH 2004). The prevalence of chronic disease varies across the socioeconomic gradient for a number of specific diseases, and for important disease risk factors. Significant socioeconomic inequalities are evident, and, for many diseases, there is also a strong, continuous socioeconomic gradient in the rates (Glover et al. 2004). In a recent analysis of the Australian Bureau of Statistics (ABS) National Health Survey (NHS), the largest socioeconomic inequality was for diabetes mellitus (at ages 25 to 64 years) (Glover et al. 2004). Circulatory system diseases (in particular, hypertensive disease) and digestive system diseases also exhibited a strong differential in the 25 to 64 year age group. In the 65 years and over age group, the strongest inequalities were evident for mental and behavioural problems, diabetes (with a continuous socioeconomic gradient in rates) and respiratory system diseases (Glover et al. 2004).

A number of risk factors for chronic diseases, namely self-reported smoking, alcohol misuse, physical inactivity and excess weight showed a striking association with socioeconomic status, in particular for people who were smokers and those who did not exercise (Glover et al. 2004).

Similar socioeconomic differentials are evident for many other chronic diseases, although their spread across the socioeconomic gradient depends upon the specific disease examined (Adler & Ostrove 1999; Glover et al. 2004). It is likely that age-adjusted morbidity rates may decrease over the next ten years for cardiovascular diseases and injuries, but increase for cancer, diabetes mellitus, dementia and mental health disorders (AIHW 2002). Therefore, any move to address the impact of chronic disease at population level, needs to take into account these socioeconomic inequalities (Glover et al. 2004).

As a group, chronic diseases tend to have common risk factors and determinants, and are seldom cured completely (Thacker et al. 1995). Individual and population level influences interact to determine the degree of disease burden and illness, and unhealthy risks and behaviours may be passed on through families, communities, and populations following demographic gradients (Ackland et al. 2003). At different stages in life, common risk factors include poor intra-uterine conditions; educational disadvantage; inadequate living environments that fail to promote healthy lifestyles; poor diet and lack of exercise; alcohol misuse and tobacco smoking (NPHP 2001). Risk factors are also increasingly more prevalent in areas of low socioeconomic status and in communities characterised by low levels of educational attainment; high levels of unemployment; substantial levels of stress, discrimination, interpersonal violence and exclusion; and poverty. There is a higher prevalence of such factors among the Indigenous population (as a result of the effects of colonisation and dispossession), and among other socioeconomically disadvantaged people (NPHP 2001; Mooney 2003).

In South Australia, it is predicted that as overall health continues to improve, the number of people living into older age will increase, together with the average age of life of the population. As life expectancy rises, the chance of living long enough to suffer from age-related diseases and disability also increases (McCallum 1999). As the population continues to age, fertility rates remain low and life expectancy increases, the challenge for the South Australian health care system will lie in the management of the relationship between these new demands, the health workforce mix and the levels, types and quality of services supplied in response (McCallum 1999).

In addition to the recognition of the need for improved integration of services, there is an emerging policy view that government-funded health care should be balanced with the expectation that individuals themselves must take some responsibility for their health and its management. The opportunity for people with chronic illness to be more involved in managing their health is appropriate.

However, there is also a strong likelihood that a degree of blame or a charge of irresponsibility may be attributed to those who continue to engage in unhealthy or risky behaviours, such as tobacco smoking and substance misuse. Such attitudes fail to acknowledge the social and economic complexities that lead to risk-taking behaviour, and the ineffectiveness of many existing health promotion strategies aimed at modifying behaviour, especially for those people who are the most disadvantaged in our community (Jarvis et al. 1999).

Approaches to try to limit risky health practices or to modify lifestyle factors that impinge negatively on health have been effective mainly for those groups who have a high level of education, a degree of control over their lives and a reasonable income. However, not surprisingly, these strategies have been far less successful for those population groups who are already socioeconomically disadvantaged. This has meant that the difference in the health of these groups has widened, leading to greater inequality and inequity, not less (Jarvis et al. 1999).

The inequalities in health observed across populations are many – some of them are

inevitable and others, unnecessary and unfair. Despite significant medical advances and improved public health in recent decades, socioeconomically disadvantaged communities continue to suffer an unequal burden of chronic illness, premature death and disability. The study of socioeconomic inequalities in chronic diseases and conditions and in risk factors is important and necessary. This is particularly so if we wish to develop more effective policy mechanisms for preventing and intervening earlier in the progression of chronic diseases and their associated risk factors across the diverse Australian population, and to reduce some of the existing health inequities.

While socioeconomic inequalities in the prevalence of chronic diseases and their concomitant risk factors exist across the Australian population, the diseases with substantial socioeconomic disparities are also different for different stages in the life course.

The recurring finding of inequalities for chronic disease morbidity and risk factor prevalence across the socioeconomic gradient remains a significant concern (Glover et al. 2004). The burden in the Australian population attributable to socioeconomic inequality is large, and has far-reaching implications in terms of unnecessary disability and suffering, the loss of potentially economically productive members of society, and increased costs for the health and social care systems (CSAES 1993).

Despite the expenditure of millions of dollars to prevent and reduce the prevalence of chronic diseases and their risk factors, inequities have persisted. However, the situation in Australia is by no means unique, for inequalities in these diseases and their risk factors have been observed for most of the developed countries in which they have been studied (Beaglehole & Yach 2003).

National Health Priority Areas

The importance of chronic diseases and conditions in Australia led to the development of the National Health Priority Areas (NHPAs) initiative from 1996 to 1999. The NHPAs provide a focus for national collaboration on specific chronic diseases that have the potential for health gain and improved outcomes for consumers; that pose a significant burden of disease; and that have the support of all jurisdictions.

Seven national health priority areas have been endorsed (DoHA 2002):

- asthma
- cancer control
- cardiovascular health
- diabetes mellitus
- injury prevention and control
- mental health
- arthritis and musculoskeletal conditions.

Asthma

Asthma is one of the commonest diseases in Australia, affecting one in four children, one in seven adolescents and one in ten adults (DoHA 2003). Morbidity due to asthma is significant with high levels of symptoms, Accident and Emergency department attendances and hospital admissions. More than 40,000 Australians are admitted to hospital annually due to asthma (AIHW 2005). In South Australia, asthma is the second commonest reason for admission to a hospital bed and the leading cause of morbidity for both the 0 to 4 and 5 to 14 year age groupings, and for both sexes, responsible for over 25% of life lived with illness (DH 2004).

The estimated number of people with asthma in Metropolitan Adelaide increased from a rate of 83.8 per 1,000 in 1989 to 1991 to 140.3 in 2001, an increase of 67.4% (see Chapter 6, page 224). Overall, there was an increase in South Australia, from 82.1 per 1,000 in 1989-90, to 126.0 in 2001.

Over the last decade, many advances have been made in asthma care in Australia including improved understanding of the condition; development of evaluated management strategies; more effective drug therapies and better availability and access to treatment; and improved consumer and professional education (DoHA 2004). These advances have contributed to the steady decline in asthma-related deaths. However, Australia is faced with an increasing prevalence, and perhaps an increasing severity of asthma, and there is evidence that up to 60% of asthma deaths may be associated with avoidable factors (DoHA 2003).

Among people aged 35 years and over, rates of hospitalisation for asthma are higher in people living in more remote areas of Australia; Indigenous people have higher rates of hospitalisation for asthma than other Australians in all age groups; and rates of hospitalisation for asthma are higher among people living in more socioeconomically disadvantaged areas (AIHW 2005).

Cancer

In Australia:

- cancer currently accounts for 30.2% of male deaths and 25.2% of female deaths each year;
- each year about 345,000 people are diagnosed with cancer: approximately 270,000 of these are non-melanocytic skin cancers (the less threatening form of skin cancer);
- the most commonly detected cancers are prostate cancer in males and breast cancer in females;

- in 2000 there were 35,628 deaths in Australia from cancer and the most common cancers causing death were lung cancer in males and breast cancer in females; and
- at the prevailing cancer incidence rates, it may be expected that one in three men and one in four women could be directly affected by cancer by the age of 75 (AIHW 2002).

Cancer is a leading public health challenge. In South Australia between 1991 and 2001, cancer accounted for 26% of all deaths (28% in males and 24% in females) (DHS 2001). A total of 7,700 new invasive cancers were notified to the South Australian Cancer Registry for the diagnostic year 2001 (DHS 2001). This is equivalent to about 21 new cases of cancer diagnosed per day. The total for 2001 was approximately two per cent higher than in 2000. There were 3,272 deaths from cancer in the State in 2001 (DHS 2001). This is equivalent to about nine deaths from cancer per day. The total for 2001 was approximately 3.6% higher than in 2000 (DHS 2001).

Lung cancer is the leading cause of cancer mortality amongst men and the second highest cause of cancer mortality amongst women. The incidence of lung cancer in men is high but has decreased by 21% since 1989 to 1991, and in women increased up to 1989 to 1991 and has been stable since (DHS 2001). The incidence of lung cancer declined marginally, from 66 to 64 new cases per 100,000 population between 1986 to 1993 and 1998 to 2002 (see Chapter 6, Table 6.39). Mortality from lung cancer has followed similar trends, reducing by 17% in men since 1980 to 1982 and increasing by 46% in women between 1980 to 1982 and 1989 to 1991, and remaining stable from then on (DHS 2001).

Apart from non-melanoma skin cancer, cancer of the prostate is the most commonly diagnosed cancer among South Australian males, and it is the second commonest cause of cancer deaths in South Australian men (CCSA 2003). Prostate cancer has been associated with Western-style high fat diets, alcohol, smoking, occupational exposure to cadmium and rubber, urban residence, and a positive family history of the disease (CCSA 2003). The incidence of prostate cancer in South Australia increased by 26.7% between 1986 to 1993 and 1998 to 2002; heightened community awareness and new screening tests are likely to have contributed to this (DHS 2001). This increase in incidence was consistent in both Metropolitan Adelaide and country South Australia (see Chapter 6, Table 6.43).

Breast cancer remains the most significant cancer for women in South Australia in terms of incidence and death. The incidence of diagnosed female breast cancer increased substantially over the period 1977 to 2000, with larger increases in the early 1990s most likely due to improved case finding after the introduction of mammographic screening (DHS 2001). The incidence of breast cancer in South Australia increased between 1986 to 1993 (176 new cases per 100,000 women aged 30 years and over), and 1998 to 2002 (212). The proportional change across Metropolitan Adelaide (20.7%) and country South Australia (21.1%) was consistent (see Chapter 6, Table 6.41).

Mortality from breast cancer increased slightly up to the period 1989 to 1991, and has decreased slightly since then. In the BreastScreen SA target group (50 to 69 years), mortality has decreased by 19% in recent years compared with the early 1980s (DHS 2001).

There are substantial socioeconomic inequalities - specific to each cancer - in their incidence, reflecting the uneven distribution of relevant risk factors across society (Glover et al. 2004). Within South Australia during 1977 to 2001, there was a higher cancer incidence in males in lower socioeconomic residential areas than in the more advantaged areas, whereas a reverse trend was apparent for females. The predominance of cancer among males in low socioeconomic areas was largely due to excesses in these areas of cancers of the lip, buccal cavity (minus lip), throat, oesophagus, stomach, gallbladder, larynx and lung. By comparison, the higher socioeconomic area for females was influenced by higher socioeconomic gradients for cancers of the breast, colon and skin (melanoma) (DHS 2001).

Cardiovascular disease

The growth of cardiovascular disease during the twentieth century was that century's greatest epidemic (AIHW 2001). Coronary heart disease changed from occurring primarily in small, affluent sections of society, to affecting very large numbers of the population, especially those who were socioeconomically disadvantaged (Marmot 1992).

The term 'cardiovascular disease' describes diseases of the heart and blood vessels and includes:

- coronary heart disease;
- stroke;
- heart failure; and
- peripheral vascular disease.

These diseases are mainly caused by a damaged blood supply to the heart, brain and/or limbs, and share a number of risk factors. Much of the burden caused by cardiovascular disease is preventable. In 1995, it was estimated that over 80% of the adult Australian population had at least one of the following cardiovascular risk factors:

tobacco smoking; physical inactivity; high blood pressure; and/or overweight (AIHW 2001).

In Australia:

- cardiovascular disease causes more deaths than any other disease, accounting for 50,797 deaths (40% of all deaths) in Australia in 1998;
- coronary artery disease (mainly heart attacks) is the leading singular cardiovascular cause of death, accounting for 27,825 deaths (22% of all deaths) in Australia in 1998;
- stroke is the major cause of serious long-term disability in adults ;
- cardiovascular disease is the most costly disease for the Australian health system, with the direct health system costs estimated at $7.6 billion in 2004 (eleven per cent of total health spending) (AE & NHF 2005).

In South Australia, diseases of the circulatory system (which include cardiovascular diseases) account for the largest number of deaths of people of all ages: 18,536 deaths for the period 1999 to 2002. In 2001, there were an estimated 193,052 people with circulatory system diseases in the Adelaide metropolitan regions, an age-standardised rate of 184.1 per 1000 population (see Chapter 6, page 226).

Socioeconomic inequalities are still apparent for cardiovascular diseases in Australia (Glover et al. 2004). Research undertaken with self-reported data from the 2001 NHS showed that circulatory system diseases (in particular, hypertensive disease) exhibit a strong differential in the 25 to 64 year age group (statistically significant differentials of 28%) (Glover et al. 2004).

Diabetes mellitus

Diabetes mellitus is a major cause of death, illness and disability in Australia (AIHW 2002). It is also a leading cause of blindness, blood vessel disease and lower limb amputation, and can lead to pregnancy-related complications for both the mother and foetus or newborn child. Diabetes is an important risk factor for several other chronic diseases including heart disease, stroke and renal disease (AIHW 2002). Obesity is a prominent risk factor for diabetes type 2, and thus, the risk of developing diabetes rises continuously with increasing obesity (DHAC & AIHW 1999).

The incidence of diabetes is increasing both across Australia, and internationally. An estimated 554,200 persons (2.9% of the population) reported having been diagnosed with diabetes in the 2001 ABS National Health Survey (ABS 2002). In South Australia, an estimated 26,848 people reported having been told by a doctor or nurse that they had diabetes type 2 in the metropolitan regions (see Chapter 6, page 228). This figure is, however, likely to be a significant underestimate, as a large proportion of diabetes in the community remains undiagnosed (DHAC & AIHW 1999). Diabetes is also disproportionately prevalent in particular population groups, such as older Australians, Aboriginal and Torres Strait Islander people, European-born men and women, and Asian-born women (DHAC & AIHW 1999).

The prevalence of diabetes type 2 in Indigenous Australians is among the highest in the world (AIHW 2002). In 1995, the self-reported prevalence of diabetes for Indigenous Australians aged 25 to 54 years was seven to eight times that for non-Indigenous people. Among those aged 55 years and over, it was more than twice as high (AIHW 2001).

Trends over the last fifty years indicate that diabetes death rates in males are now higher than in 1950, but lower than their peak in 1968 (AIHW 2002). In females, diabetes death rates are now about half the level they were in 1950, and well below those for males. Indigenous Australians have much higher death rates for diabetes than non-Indigenous Australians. In 1995 to 1997, the death rate for diabetes among Indigenous males was nine times that of all Australian males, and for Indigenous females it was 16 times that of all Australian females (Cunningham & Paradies 2000).

Socioeconomic differentials are also apparent for diabetes. Data from the 2001 National Health Survey indicated that diabetes is just over two-and-a-quarter times as prevalent among the lowest socioeconomic category as compared with the highest category for those aged 25 to 64 years (Glover et al. 2004).

Injury prevention and control

Injuries result in an estimated 8,000 or six per cent of deaths each year in Australia, and are responsible for an estimated 400,000 hospital admissions annually (DoHA 2003). Injuries are the principal cause of death in almost half of the people under 45 years of age, and account for a range of physical, cognitive and psychological disabilities that seriously affect the quality of life of injured people and their families.

Significant health costs are also attributable to injury, accounting for approximately eight per cent of the total direct costs of all diseases annually. Health costs associated with injury in Australia have been estimated to be $2.6 billion annually, compared to the total direct cost for cancer of $1.4 billion for the same period (DoHA 2003).

Injuries are the leading causes of death among children, and one of the main causes of ill health. The most common reasons for hospitalisations following injury are falls, pedal cyclist injuries, and accidental poisoning. Young people – in

particular, young males - are also disproportionately affected by injury. Accidents are the leading cause of death in those aged 12 to 24 years (60 deaths per 100,000 population). Prevalence of injuries in young people is higher than in any other age group, and (apart from the 75 years and older group) death and hospitalisation rates are also higher than for any age group. Injury deaths have decreased by around 60% in two decades largely as a result of falling motor vehicle accident deaths (AIHW 2002). However, deaths from motor vehicle and other transport accidents still remain overwhelmingly the commonest cause of accidental injury and death. Death from injury is around four times more common in young males than in young females.

Young people between the ages of 15 to 24 years account for a significant proportion of all hospitalisations (16%) and deaths (14%) from injury in Australia (Pointer et al. 2003). The age range covers the transition to adulthood, an important developmental stage marked by changes in social independence, family life and work status. Young adults are over-represented in a number of injury areas including transport, violence, pharmaceutical poisoning, and self-harm. Different patterns of injury can be seen according to age and gender. Key issues that need to be addressed include suicide and self-harm, risk-taking behaviour, alcohol use and workplace injury.

Injury is also an important contributor to death and disability for older people. Those over the age of 75 years account for the largest proportion of all hospitalisations (16%) and deaths (21%) from injury in Australia (Pointer et al. 2003). Falls are the commonest cause of serious injury among elderly Australians, but other areas such as complications of surgical and medical care, pharmaceutical poisoning and transport injury also result in a large number of hospital admissions and deaths (Pointer et al. 2003).

There are also significant differences in the impact of injury across the population. Rates of injury mortality and hospital admission due to injury are substantially higher for Aboriginal people and Torres Strait Islanders than for the Australian population as a whole (Pointer et al. 2003). Injury is the second leading cause of death in Aboriginal and Torres Strait Islander people, and the rate of hospitalisation is higher in every injury category, except drowning, when compared to the non-Indigenous population (Pointer et al. 2003).

Rates of death and hospitalisation as a result of injury are also relatively high in the rural and remote population of Australia, with rates increasing with remoteness from metropolitan centres. Rates of suicide and self-harm and road traffic accidents are high among rural youth, particularly males (Pointer et al. 2003). Significant socioeconomic differentials also exist for deaths from injuries across the population (Draper et al. 2004).

Mental health

Mental health relates to an individual's ability to negotiate the daily challenges and social interactions of life without experiencing undue emotional or behavioural incapacity (DHAC & AIHW 1999). In Australia, one in five people is likely to develop a mental health problem at some stage in their lives (NMHS 1992), and this number will increase over the next twenty years (Mathers et al. 1999).

There are significant mental health inequalities across the population, as the risk of mental ill-health is higher among those who are poor, homeless, unemployed, persons with low education, victims of violence, migrants and refugees, Indigenous populations, children and adolescents, abused women and the neglected elderly (WHO 2003).

Mental health is crucial to the overall wellbeing of individuals and communities. However, mental health and mental disorders have not been accorded anywhere near the same importance as physical health and illness (WHO 2003). This is reflected in the stigma, disability and discrimination still experienced by those who suffer mental ill health, the lack of acknowledgement of the true extent of the problem, and the longstanding neglect of mental health care systems globally (WHO 2003).

In Australia, a substantial number of people of all ages experience significant mental illness annually and many others are affected, particularly their families and carers. In 2001, an estimated 111,814 people in the Adelaide metropolitan regions reported mental and behavioural disorders, a rate of 106.7 per 1,000 people (see Chapter 6, page 230).

The stigmatisation of people with mental illnesses and its negative consequences also impinges on family members (Phelan et al. 1998). The care burden on children of parents with a mental illness (especially in sole-parent situations), for example, may greatly affect their participation in education and social life (CA 2001; COPMI 2004). There may also be an increased risk of mental health problems, although not all children of parents with a mental illness will experience difficulties as a result of their parent's health status (Anthony & Cohler 1987).

Mental health problems take many different forms, from anxiety and obsessive and compulsive disorders, post-traumatic stress, to schizophrenia and depression. Many mental health disorders can

also co-exist with chronic, physical ill health conditions. The National Survey of Mental Health and Wellbeing Report indicated that just under half of those with any mental health disorder also had a physical health problem (DHAC & AIHW 1999). These included asthma, chronic bronchitis, anaemia, high blood pressure, heart disease and kidney disease. Mental health problems may also be associated with a wide range of other health and social problems such as substance misuse, homelessness, unemployment, and gambling.

In Australia, depression is the fourth leading cause of disease burden, with high associated costs including reduced work productivity, days of lost work, educational failure, poor family functioning, poor social functioning, a diminished sense of wellbeing and increased use of health services (AIHW 2002). It is also a major risk factor for suicide and self-inflicted injury (DHAC & AIHW 1999).

Socioeconomic inequalities are also apparent in the prevalence of mental health problems in Australia (Glover et al. 2004). Research undertaken with self-reported data from the 2001 NHS showed that there was a statistically significant differential of 67% at ages 25 to 64 years, with a strong, continuous gradient, in the prevalence of self-reported mental and behavioural problems across the socioeconomic gradient; differentials (also statistically significant) in the 0 to 14 year and 65 years and over age groups were 52% and 56%, respectively (Glover et al. 2004).

Arthritis and musculoskeletal conditions

'Arthritis' is a term used to describe a disorder of one or more joints within the body. Arthritis disorders are part of a broader group of disorders of the muscles and bones called musculoskeletal disorders. Osteoarthritis, rheumatoid arthritis and osteoporosis are the most prevalent forms of musculoskeletal disease within Australia and have been found to place the highest burden on the community. The primary health burden of musculoskeletal disorders is through loss of quality of life associated with pain and disability (AIHW 2002).

According to results from the 2001 National Health Survey, arthritis is a major cause of disability and chronic pain in Australia. Using results from the Survey, the ABS estimated that about 2.58 million Australians suffer from arthritis, representing about 13.6% of the population (ABS 2002). While it is more common in the elderly, and especially in women, arthritis can affect people of any age, including children. Estimates from the Australian Institute of Health and Welfare indicate that nearly 75,000 years of healthy life are lost to arthritis every year, making it a significant cause of disease burden (Mathers et al. 1999). Most are years lost due to disability, although 3,000 years of life are lost each year due to premature death (Mathers et al. 1999).

Health inequalities early in life

Early life is a time when we are particularly vulnerable to risk and protective influences on our health and wellbeing (Keating & Hertzman 1999). There is strong evidence of the effect of early life factors and experiences on cognitive function, growth, the ability to learn, physical and mental health, and resilience in later life (Keating & Hertzman 1999). Thus, experiences at the beginning of life may be reflected in health outcomes during the adult years up to the end of life. A life course view highlights the sequencing of events across an entire lifetime, and their cumulative impact. There is also evidence for intergenerational effects; for example, the socioeconomic status of a child's grandfather may predict the child's cognitive and emotional development at 14 years of age (Najman et al. 2004).

To become productive and contributing adults, children and young people need to live in environments that provide some order and meet their basic physical, emotional and material needs, as well as their developmental and learning requirements (Bronfenbrenner 1979). They prosper best within families and communities that provide security, nurturing, respect and love. To be the good parents that most want and hope to be, adults need employment and educational opportunities. To ensure wellbeing for family members, there must be adequate health care, housing, safety, effective schools and quality child care. For optimal child development, families need support from neighbours, schools, community agencies and governments, and opportunities to develop relationships and pursue their interests (Weissbourd 2000).

A lack of resources in any of the essential dimensions decreases a family's ability to fulfil its mission. The effect of poverty supersedes all others (Acheson et al. 1998). Without adequate income, the likelihood of having good health, housing, education or any other opportunities diminishes substantially (Keating & Hertzman 1999). The resulting tension increases the likelihood of instability and stress in relationships among family members, further decreasing a family's ability to maintain a supportive environment for the development of children and young people.

The extent of socioeconomic disadvantage experienced by Aboriginal communities and by

individual families impacts significantly on their youngest and most vulnerable members. Disadvantage at a population level is associated with factors such as infant and maternal mortality and morbidity, low birthweight and poor physical growth, developmental delay, disability, learning and behavioural problems, and mental health issues. These factors may then be compounded by discrimination and racism, social exclusion, poverty, cultural and spiritual alienation, and a relative paucity of employment and educational opportunities.

A complex relationship exists between the factors that contribute to poorer outcomes, such as low socioeconomic status, low income or occupational class, and the resulting implications for children and young people and their families. While this inter-relationship is not yet fully understood, there is much that can be done, for improved quality of early life carries benefits into adult life (for example, in terms of improved health risk particularly in relation to chronic diseases (Fonagy 2001)).

Infant mortality and morbidity

The majority of pregnancies and confinements in South Australia do not result in mortality or severe illness. However, pregnancy, childbirth and infancy remain a period of significant vulnerability. Problems in the first few days of life, and those associated with the health of the mother, can adversely affect an infant's immediate and future wellbeing and development (AIHW 2002).

During pregnancy, the health of infants can be affected by a number of factors, such as maternal behaviours (for example, smoking, medication and other substance use, and excessive alcohol intake), injury and violence, and some health conditions affecting the mother, such as specific infections and diabetes. Maternal nutrition is increasingly recognised as another important consideration. Health conditions that may be associated with poor nourishment of the foetus include coronary heart disease, hypertension and non-insulin dependent diabetes in later life (Barker 1995). There is also good evidence that an adequate intake of folate, a B-group vitamin, by the mother before and during early pregnancy, can prevent up to 70 per cent of neural tube birth defects (spina bifida and related conditions) and possibly, other non-neural tube defects (Lumley et al. 2001).

Infant deaths and risk factors relating to the perinatal period are presented in Chapter 6. In South Australia, there was a dramatic decline in the infant mortality rate over the decade 1989 to 1999. This is consistent with an overall decrease in the death rate for all children and young people over the same period, but reflects a more significant reduction. Much of the decline can be attributed to the substantial fall in deaths due to Sudden Infant Death Syndrome (SIDS) following the introduction of the educational campaign in 1990 aimed at reducing the prevalence of risk factors for SIDS, including prone sleeping (DHS 2001). In 2000, there were only five post-neonatal deaths from SIDS compared with an annual average of 38 in the period 1986 to 1990 (DHS 2001).

Unfortunately, in spite of recent improvements, there remains a very significant disparity between the infant mortality rates for babies of Indigenous mothers (11.2 per 1,000 live births) and those of non-Indigenous mothers (4.2 per 1,000 live births) (DHS 2001). Recent trends in Indigenous infant mortality in South Australia imply a worsening of the rates for female infants over the years 2000 to 2003 (ABS 2003). There is also regional variation evident across the metropolitan and non-metropolitan areas of the State. This reflects identified factors such as parental smoking, alcohol and substance use, co-sleeping when intoxicated, physical abuse and domestic violence, and poor socioeconomic circumstances (DHS 2001).

The risk factors surrounding birth and the subsequent four weeks that are most predictive of an adverse perinatal outcome are outlined in Chapter 6. A number of these factors occur more frequently or are associated with women who are socioeconomically disadvantaged. For the purposes of the first atlas, a summary perinatal score was developed for each postcode (see further on page 194). Over time, there has been a reduction in the number of high-risk postcodes, which indicates a significant improvement in outcomes for mothers and babies in these areas. However, the presence of some postcode areas in all three of the time periods analysed indicates that the overall progress made in outcomes in the State as a whole has not been reflected, nor are these areas experiencing any significant improvements in maternal or perinatal outcomes.

Most live births of infants occur between 37 and 41 weeks of gestation. These births are described as full-term. Infants who are born before 37 weeks are referred to as pre-term. Of all births in Australia in 2002, 20,071 (7.9%) were pre-term. Babies born to Aboriginal women in 2001 were more than twice as likely to be of low birthweight (12.9%) than those born to non-Indigenous women (6.0%). The low-birthweight proportions nationally for babies born to Aboriginal and Torres Strait Islander women were highest (16.5%) for South Australia (Laws & Sullivan 2004).

The number of low birthweight babies born to female residents of Metropolitan Adelaide declined, from 3,773 in 1989 to 1992 to 2,626 in 2000 to

2002, a decrease of 7.2%. However, the proportion of babies born with a low birthweight increased marginally, from 6.7% in 1989 to 1992 to 6.9% in 2000 to 2002 (see Chapter 6, Table 6.1). The number of low birthweight babies born in country South Australia also declined, from 1,434 in 1989 to 1992, to 998 in 2000 to 2002, a reduction of 7.2%. There was a larger decline in the total number of births in this period, resulting in an increase in the proportion of babies who have a low birthweight from 6.3% in 1989 to 1992 to 6.8% in 2000 to 2002.

Weight at birth is determined primarily by genetic inheritance, but factors such as poor maternal nutrition, maternal stress or smoking can constrain that growth. Growth constraints force the foetus to adapt, and these adaptations may become permanent features that modify tissue functions and possibly disease risk in later life (Barker 1995). Pre-term birth and being small-for-gestational age (two aspects of low birthweight) are both associated with increased morbidity in the infant, and also with parental factors such as maternal smoking and low socioeconomic status (Sommerfelt et al. 2000).

Optimal growth and development in the prenatal period and early childhood are critical to good health over an individual's lifetime. The period of life from birth to four years is one of rapid growth and development, but infants and young children remain developmentally vulnerable. They have no control over their physical and social environments. Their wellbeing and developmental health are largely determined by the living conditions, knowledge and attitudes and lifestyles of the adults who care for them.

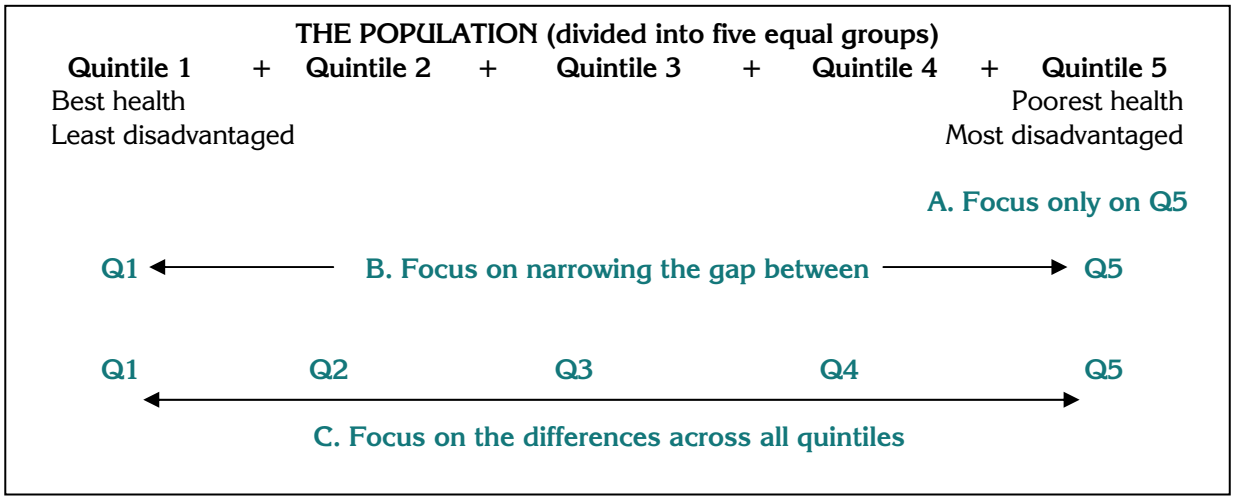
This vulnerability is exemplified by the rate of substantiated cases of child abuse and neglect. In Australia in 1999 to 2000, rates were highest for young infants under one year of age, with male infants having the highest rates of all children aged 0 to 14 years (7.1 per 1,000 male infants and 6.6 per 1,000 female infants) (AIHW 2002). Infants aged less than one year are consistently the age group at highest risk for homicide in Australia (Strang 1993). This is due to both their physical fragility and their absolute dependence. In South Australia for the period 1997 to 2000, the mortality rate for infants under one year from interpersonal violence was 22.0 per 100,000 population, compared with a rate of 7.5 per 100,000 for the population overall (AIHW 2002).

Addressing health inequality

Throughout the atlas, there is substantial evidence of the powerful influence of social and economic factors on the health of South Australians, depicted by the geographic patterns of health inequalities and the socioeconomic gradients in health. The recent trends in social and health inequalities in South Australia are specifically identified in Chapter 9.

The challenging policy objective is how best to address health inequalities. However, firstly, there are a number of different approaches to thinking about health inequalities and what each means in terms of possible policy solutions (Figure 1.2).

Figure 1.2: Conceptualising health inequality and possible policy approaches
(Adapted from Graham 2004)



Addressing health inequalities can be described in the following ways (Graham 2004):

- Some view the impact of social disadvantage on the health of the poorest groups in the population, such as Aboriginal people and Torres Strait Islanders, as the priority policy goal (Focus A).
- Others identify the gap between the health of those at the outer ends of the socioeconomic hierarchy (those with the poorest health and those with best health), and see the narrowing of the gap as the goal (Wagstaff et al. 1991; Manor et al. 1997) (Focus B).
- The socioeconomic gradient in health that runs across the whole population can also be the focus, rather than looking solely at social disadvantage, or the health gap (Focus C).

The last approach (Focus C) widens the frame of health inequality policy in three ways (Graham 2004). Firstly, it looks for the causes of health inequality in the systemic differences in life chances and opportunities, living standards and lifestyles that are associated with people's unequal positions across the socioeconomic hierarchy, and for the pathways through which they influence health (Davey Smith et al. 2001). Secondly, as a result, 'addressing health inequalities' becomes a population-wide goal that includes every citizen. Thirdly, 'reducing health gradients' provides a comprehensive policy goal: one that encompasses remedying disadvantages and narrowing health gaps within the broader goal of equalising health chances across all the socioeconomic groups (Graham 2004).

We must be careful that the impact of any policy intervention to improve the community's wellbeing does not inadvertently increase health inequalities. Some programs, by their very success, can widen the gap between groups in the population; for example, they may be more attractive to those who are already healthier, or not as effective for certain groups with poorer health, less education or who are disadvantaged or overburdened in other ways (Jarvis & Wardle 1999). Thus, different approaches and mixes of policies and programs must be mounted to address health inequalities. These may include more precise targeting, but also greater attention to the community-based dimensions of 'interdependence' between individual behaviours, key determinants, and community and institutional resources.

Improving the health of poor groups and improving their position relative to other groups are necessary elements in a strategy to reduce the socioeconomic gradient. However, neither is sufficient on its own: to reduce the socioeconomic gradient, health in other socioeconomic groups also needs to improve at a faster rate than in the highest socioeconomic group. Thus, policies to remedy health disadvantages, to close health gaps and to reduce health gradients need to be pursued together, and not at the expense of each other (Graham 2004).

Moving towards health equity

Increasingly, health equity is also being recognised as an important issue by researchers, policy makers and health service providers in South Australia and elsewhere. However, the local meaning of health equity is still far from clear, and there is little agreement about how best the moral considerations of fairness and injustice can be incorporated into its measurement.

A recently published framework suggests three steps for measuring health inequity (Asada 2005):

Step 1: defining when a health distribution becomes inequitable (e.g., health equity as equality in health, or health inequality as an indicator of general injustice in society?);

Step 2: deciding on measurement strategies (e.g., what aspect(s) of health, what unit(s) of time, and what unit(s) of analysis?);

Step 3: quantifying health inequity information (e.g., which comparisons; relative or absolute differences; which aggregations of differences at a population level; sensitivity to the population mean or to the population or sub-population size?).

Further discussion and debate around these issues is required, and some agreement reached, so that we can proceed to work to fulfil one of the pillars of the South Australian government's health reform, that of 'health inequalities and health as a human right'. Without clearly defining health inequity and applying the chosen concept to measurement, no one can move onto effective policy making for health equity (Asada 2005).

Conclusion

Protecting and improving overall levels of health in the South Australian population is no longer a sufficient justification for investment in health; this investment must also yield a more equal distribution of health for socioeconomic groups (DHS 2003). The inequalities in health that are reflected in the atlas are, for the most part, avoidable and therefore, inequitable. In any given society, those in the best health set a standard which all should be able to enjoy. If this is so, it is those in the poorest groups who face the most profound denial of their health as a fundamental human right (Graham 2004).

Therefore, the challenge for policy-makers, planners, researchers and communities is to find those effective interventions that will address these

inequalities and improve the health of all those who are disadvantaged in South Australia.

As outlined earlier, there is now substantial evidence that wellbeing is the result of complex interactions of the social, biological and ecological environments in which people live (Keating & Hertzman 1999). If these environments are supportive, they provide a foundation for the development of competence and skills that underpin learning, behaviour and health throughout life. However, a lack of enabling social and environmental conditions results in poorer life outcomes for people (Stanley et al. 2002).

This situation, however, is not inevitable. There is a growing body of knowledge that can provide direction for developing policies to help to reduce inequalities in modern societies. The socioeconomic environment is a powerful and potentially modifiable factor, and public policy is a key instrument to improve this environment, particularly in areas such as housing, taxation and social security, work environments, urban design, pollution control, educational achievement, and early childhood development (Halfon & Hochstein 2002).

A focus on the environmental context of life in no way implies that other factors such as genetics, personal lifestyles or use of services do not figure in determining health and wellbeing; rather, it highlights a greater understanding in recent years of the hidden social factors that underpin differences in the likelihood of having a healthy and fulfilling life. Health inequalities, an ageing population and changing patterns of disease present challenges that will require new responses from the South Australian health care system, its workforce and its ways of delivering services. However, to achieve good health for every segment of the population, we should also address the behavioural, social and environmental factors that determine health, and make a real shift from a narrow focus on illness, to a broader focus on health and wellbeing.

What else should we be doing differently? There is an urgent need to make 'health equity' a research priority for each stage of the life course – not just to monitor the size and extent of the inequalities, but also to undertake research that will find preventive approaches and policy interventions that are effective in reducing them, and that are likely to be implemented by governments and communities.

This should occur within an environment where 'health inequality' and 'health equity', and the different mix of policy approaches have been discussed, defined and agreed for South Australia.

Community views should also be canvassed to determine which health inequalities are considered to be inequitable and unfair and therefore, should be addressed as a priority. Then we must evaluate the success or lack of benefit of those policy options that are put in place, to learn more about how to improve the population's health in South Australia now, and into the future.

2 Methods

Socioeconomic status

In the absence of a measure of socioeconomic status in the health datasets, comparisons can be made of the socioeconomic characteristics of populations at the small area[1] level. In this case, the socioeconomic characteristics of the area are being used as a proxy for the socioeconomic characteristics of the population (in the area) – this is quite acceptable, and is particularly appropriate if the statistics for the area describe the *population* in the area, not the area itself. In this atlas, data on the health, wellbeing and use of services of the population are compared at the small area level with indicators of socioeconomic status, either through a comparison of the patterns of distribution in maps, or by reference to the correlation analysis.

There are a number of deficiencies associated with this area-based approach. These include that:

i the data for an area represent the average of the characteristics or events (deaths, hospital admissions) for the population of the area; as the population of many of the areas for which data are available is quite large, this can conceal the existence of areas with higher or lower rates;

ii there is considerable movement of the population between areas over time, weakening the value of the data for small area analysis;

iii the use of the socioeconomic status of an area (as measured by the characteristics of the population of the area) can hide the existence of any 'area' or 'locality' effect in the data: that is, where aspects of the location itself are impacting on health, whether through structural factors (such as lack of transport) or environmental factors (such as poor air quality), such that the area itself can be considered a risk factor.

The comment under point i, above, is relevant in both the metropolitan regions and country South Australia. While the map of South Australia is dominated by three large and sparsely-settled SLAs in the remote north of the State, many other SLAs are also large and sparsely-settled. In the metropolitan regions, many of the SLAs are of reasonable uniformity as to area and population density: the major problems are the larger SLAs in the outer north, as well as through the Mt Lofty Ranges, from Tea Tree Gully to Sellicks Beach.

Glover et al. (2004) addressed the first two of these concerns in an analysis of admissions to hospitals in Western Australia of residents of Perth[2] over a five-year period. They found that people who move do so between, or within, geographic areas of similar socioeconomic status; and that the (often relatively large) areas used in these analyses provide a reliable indication of the socioeconomic status and health service utilisation of the individuals in the area about whom the event is recorded. That is, the association between rates of total admissions and socioeconomic disadvantage of area evident at the smallest area level (Census Collection District) is also evident, albeit less strongly, in the higher level area aggregates of postcode or SLA. The finding was similar for individuals admitted. They concluded that, given the widespread use in Australia of area-based analyses at the postcode and SLA level, it is important to know that such analyses can provide a reliable indication of the direction and underlying strength of the association of socioeconomic disadvantage at the local area level.

The characteristics of areas can also influence socioeconomic status and health. In addressing the question 'Do individual or area characteristics matter?', Joshi et al. (2000) respond 'Both do'. They conclude their further discussion on this question as follows: 'Our finding that there are spatial dimensions to these disadvantages further suggests that area-based initiatives need not be futile. But they will not be a panacea, if individual inequality is neglected.' This is a neglected area of analysis in Australia: however, the atlases have shown that disadvantaged groups, whether they live in industrial, suburban, country town or rural areas, have poorer health outcomes than those better off.

Selection of indicators

The variables used as indicators within the topic headings have been chosen because they provide data with which to illustrate patterns of socioeconomic status, health status and utilisation of health services at a small area level.

The indicators of socioeconomic status represent a broad cross-section of data variables that are generally used to illustrate socioeconomic disadvantage. Indicators of health and wellbeing that can be reproduced at a small area level are, to some extent, limited by the lack of available data. However, in this third edition, the range is greater than has been previously available: details of newly

[1] The term 'small area' is widely used, despite (often large) variations in the size and population of areas covered.

[2] The Western Australian hospital admissions database is the only one in Australia to include details for individuals (as well as events) for all hospitals in the State.

available indicators are provided in the introduction to Chapters 6 and 7.

Data presentation

In maps and tables

Statistical Local Areas (SLAs) are based on Local Government Areas, with additional codes allocated to local government areas which have been split for statistical purposes, and to areas outside Local Government Areas (e.g., unincorporated areas). Additional details on the mapping of SLAs are provided on page 24, under the heading of *Area mapped/ Boundary issues*.

Two maps are shown for the majority of variables in this atlas. The first comprises a map at the SLA level for the metropolitan regions, represented by the Adelaide Statistical Division, excluding Gawler (treated as part of Wakefield region under the Health Service Regions of the Department of Health); a small number of variables in Chapter 6 are mapped for larger areas, referred to as burden of disease areas.

The second map is of the whole of the State, by SLA; again, a small number of variables in Chapter 6 are mapped by burden of disease areas. In this map, the metropolitan health regions are mapped as one area. This enables comparisons to be made of the distribution of the characteristic/ event mapped in the metropolitan regions with its distribution in country South Australia.

Populations in urban centres can have different characteristics to those living in less settled areas, and frequently have different health status and exhibit different patterns of use of services. Where it has been possible to separately identify urban centres with populations of 1,500 or more, they are shown on the whole of the State map as circles. Unfortunately the town is not a distinct and identifiable unit within the structure of ASGC. Thus, only urban centres that are incorporated local government areas (and are therefore represented in the Australian Bureau of Statistics classification as SLAs) can be identified in the datasets and separate details published for them. More details of the urban centres mapped and the process of their identification are on page 24, under the heading of *Area mapped/ Boundary issues*.

The majority of maps in this atlas reflect the distribution of the population for whom the particular event is recorded (eg. hospital episode, death) by location of their 'usual residence', as coded from their address, in the various statistical data collections. In addition to the comments at the beginning of this chapter, the validity of this approach is discussed in more detail under the heading *Important points to note* (page 25).

The maps in Chapter 4 reflect the distribution of the population by a mixture of address locations. The variables for single parent families, low income families, housing authority rented dwellings and dwellings without a motor vehicle reflect the population counted in the SLA on Census night and include visitors, people in hospitals and gaols, and so forth; and exclude usual residents who were absent from the dwelling on that night. This is because the data for these variables are only available for people recorded in the Census at their place of enumeration. The remaining variables mapped reflect the address of usual residence of the population who were in Australia on Census night – that is, people in Australia, but not 'at home', have been coded to the address of their usual residence.

By remoteness

In 1999, the (then) Commonwealth Department of Health and Aged Care sponsored a project to develop a standard classification and index of remoteness which would allow the comparison of information about populations based on their access, by road, to service centres (towns) of various sizes. By specifying towns of various sizes, the index implicitly takes account of the education, health, welfare and other services likely to be located in towns of those sizes; but there is no explicit use in the development of the index of which services should exist - that is, distance is the sole measure of access. The outcome of that project was the Accessibility/ Remoteness Index of Australia (ARIA) (DHAC 1999 & 2001), based on a methodology developed by the National Centre for Social Applications in GIS (GISCA).

More recently, the Australian Bureau of Statistics (ABS) addressed the concept of remoteness, with a view to including a measure in its classification of areas. The ABS work, also undertaken with GISCA, used ARIA as the underlying methodology for the determination of remoteness.

The new classification, described by the ABS as a 'Remoteness Structure', and referred to in this atlas as the ASGC Remoteness classification (ABS 2001), is an update and refinement of the original ARIA.

ASGC Remoteness measures access in terms of remoteness along a road network from 11,914 populated localities to five categories of service centres (service centres with more than 250,000 persons; with 48,000 to 249,999 persons; with 18,000 to 47,999 persons; with 5,000 to 17,999 persons; and with 1,000 to 4,999 persons). An adjustment is made for localities situated on islands.

For each locality, the distance to each of the five categories of service centre is converted to a ratio

to the mean. To remove the effect of extreme values, a threshold of three is applied to each component and then the five component index values are summed. This produces a continuous variable with values between 0 (high accessibility) and 15 (high remoteness). Index values for an expanded locality and point database of 42,648 localities are then interpolated to produce an index value for 1km grids and averages calculated for larger areas such as postcodes or SLAs.

A continuous index is ideally suited to some forms of research; however, many other uses require discrete categories. To meet these other uses, the index values have been grouped into five categories: Major Cities, Inner Regional, Outer Regional, Remote, and Very Remote (a sixth category, Migratory, is used at the five-yearly population Census to account for people on trains, planes etc). The categories were chosen on the basis of natural breaks in the data, balance across categories and broad comparability with earlier classifications.

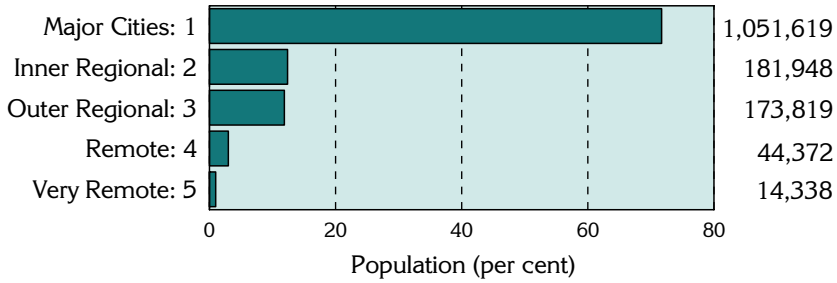
Map 2.1 shows the ASGC Remoteness classification for each SLA or part SLA in South Australia, other than for the Major Cities class. A list of the areas by class is shown in Appendix 1.2.

For each variable in the atlas, details were calculated of the average percentage, ratio and so on, for each of the five ASGC Remoteness classes described above. For example, for children living in single parent families, the average percentage of all such families in SLAs in category 1 (Major Cities) was calculated and shown in a graph beneath the whole of State map, together with the average percentage in each of the other four categories. The ASGC Remoteness classification thereby provides a summary measure of the characteristics of the population, for each of the variables mapped, categorised by accessibility to the largest populated centres.

Figure 2.1 shows the distribution of the population across South Australia by the AGSC Remoteness classification. The population used here is the Usual Resident Population by Statistical Local Area (SLA) at the 2001 Census.

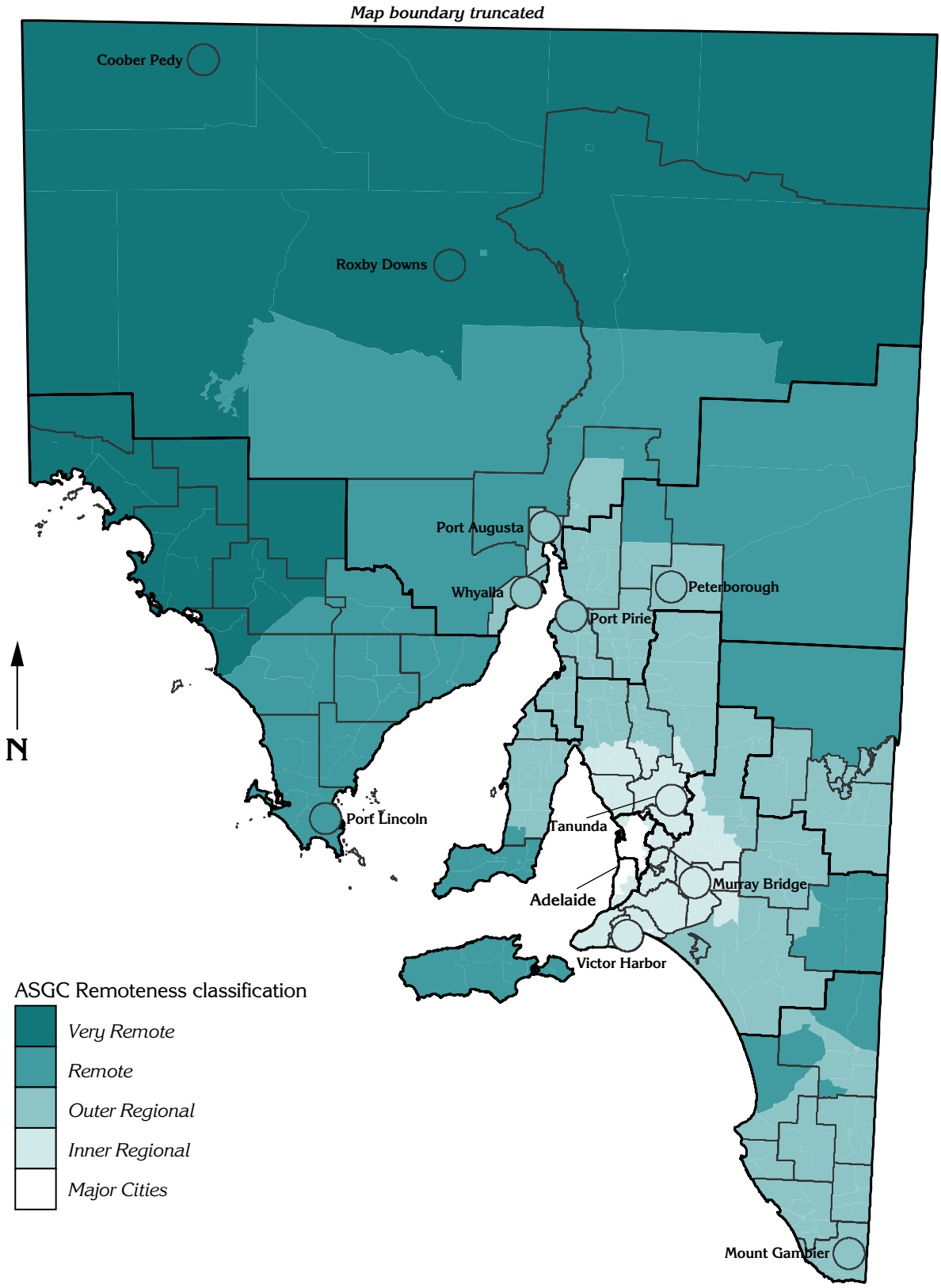
Almost three quarters (71.7%) of South Australia's population live in areas classed as Major Cities, 12.4% live in areas in the Inner Regional class, 11.9% in Outer Regional, 3.0% in Remote and 1.0% in Very Remote.

Figure 2.1: Population by ASGC Remoteness classification, South Australia, 2001



Source: Calculated on Usual Resident Population, Census 2001, using a concordance supplied by the ABS

Map 2.1
ASGC Remoteness classification, South Australia, 2001



Source: Calculated on data from GISCA

Details of map boundaries are in Appendix 1.2

By socioeconomic status

As well as presenting the data in maps and by the AGSC Remoteness classification, the data have also been grouped into five groups (quintiles) of approximately equal population. The groupings are based on the Index of Relative Socio-Economic Disadvantage (IRSD) score for the SLA as calculated from the data collected by the ABS at the 2001 Population Census[3]. Quintile 1 comprises the SLAs with the highest IRSD scores (highest socioeconomic status, or most advantaged areas) and Quintile 5 comprises the SLAs with the lowest IRSD scores (lowest socioeconomic status, or most disadvantaged areas). Each quintile comprises approximately 20% of the total population in the areas under analysis (eg. Metropolitan Adelaide or country South Australia).

Once grouped in this way, the analysis has been repeated to calculate the various rates, ratios and percentages, to show variations between the populations in each of the quintiles. Data presented in this way are described as being by 'socioeconomic disadvantage of area' and are shown in Chapter 9.

The data

Data periods

The majority of the data are for periods around 2001, to tie in with the 2001 Census, which provides the majority of data in Chapter 4. It might be thought that such 'old' data are out of date, and not relevant. For the purposes of an analysis such as is presented in this atlas, the data are of acceptable timeliness, as the geographic patterns in the data change relatively slowly. Further, many of the datasets only become available after some time, and processing them from the form they are in to be presented in maps is also time-consuming.

Data describing the characteristics of the population mapped in Chapter 4, *Demography and socioeconomic status* are largely from the 2001 Census of Population and Housing.

The data mapped in other chapters are recorded for a range of periods: in each case, these are shown together with the indicator.

Postcode data

Another important issue is that the only spatial detail available for a number of datasets is the postcode of the address. There are two main issues: one is the extent to which the postcode of the address (for example, the postcode held for a child's immunisation) is the same as the address used to calculate population estimates (based on Census data); the other is problems encountered in converting postcode area data to SLA.

Mismatch of addresses

Problems arise when a post office box is given as an address for a Medicare account (eg. for a visit to a general medical practitioner). These cannot be accurately converted to an SLA. This is of particular importance in country areas, or on the fringe of the metropolitan regions, where a person uses a post office box in an SLA that is different to that to which the Census shows them as living (population estimates for SLAs are based on Census data).

This is possibly the cause of an unusual pattern in the rates of admission to public acute hospitals in Grant and Mt Gambier. Grant surrounds Mt Gambier, and some residents no doubt use Post Offices in Mt Gambier (see page 401).

Converting postcode area data to SLA

SLAs are generally larger than postcode areas, and the conversion frequently allocates a whole postcode (or more than one postcode) area to an SLA, together with a part of another postcode (or parts of more than one postcode). The conversion is undertaken using approximate allocations of postcode populations (based on the best fit of Census Collection Districts (CDs) to postcode areas) to SLAs, derived from data at the previous Census. In many instances, this conversion represents a relatively crude allocation of the population of any SLA. For example, in many cases the boundaries of CDs do not match the boundaries of postcodes, and whole CDs are allocated to the postcode into which the population largely falls. Postcodes are similarly allocated to an SLA on a 'whole postcode' basis, leading to further approximations. However, in the absence of accurate population counts from the Census for postcode areas, this method has been used in this atlas. As the allocation is done on the basis of total populations, it does not take account of differences in the location within a postcode (or CD) of different age groups in the population and may mask the differential use of services, death rates and population characteristics between age groups.

The main impact of this conversion process is seen in the data in Chapter 5 (pension data) and Chapter 6 (immunisation data), where the estimated number of events can be greater than the population.

An example of the inaccuracies resulting from this conversion process is provided in *A Social Health Atlas of Australia, Second Edition, Volume 5,*

[3] The IRSD is one of four Socio-Economic Indexes for Areas (SEIFA) produced by the Australian Bureau of Statistics from data collected in the 2001 Census. Further details of the construction of this index are in Appendix 1.3.

South Australia (Glover et al. 1999): Table 2.1 (page 12) and associated text (page 11); this is also available at www.publichealth.gov.au.

Analysis and presentation

Measures mapped

Most measures are percentages (particularly those in Chapters 4 and 5) or age-standardised rates (particularly those in Chapters 6 and 7). Age standardisation has been undertaken where it was considered that variations in the age distribution of the population for any variable could affect the analysis. Indirect age standardisation, which largely removes variations in rates between areas where such variations arise solely as a result of the age structure, was applied to the majority of the variables describing the health status and use of services (see Appendix 1.3 for more details).

By mapping the data as percentages, rates or ratios the distribution of the population or event, and variations in that distribution, can be easily seen across the areas mapped. These variations are important in highlighting areas of, for example, high service use or high death rates. However, in using the data, it is important to recognise that while the same percentage or standardised ratio value may apply in two areas, the areas may differ greatly in population size, which may have implications for service delivery or program planning. For example, an area with a highly elevated rate of hospitalisations and a relatively small population may be of lesser concern than an area with a moderately high rate of hospitalisations and a very large population, because of the larger number of people affected. As it has not been possible at the scale of these atlases to show on the map both relative values (percentages, rates and ratios) and absolute values (number of people, events etc.), users should bear this caution in mind and refer to the absolute values listed in the associated text, or on the PHIDU web site. This aspect is discussed in more detail under the heading *Reading the maps*, below.

Standardised ratios

Where the comparisons between areas for an indicator are likely to be affected by variations in the age profile of the area, the data have been age-standardised. This effectively means any differences in age-standardised rates between areas are reflecting the influence of factors other than age. In this atlas, the age-standardised data are presented as an index, with the South Australian or metropolitan region[4] total as 100; an index of 110 in an area means the standardised ratio is ten per cent higher (for an area of its population size and structure) in the area than expected from the State rates. An index of 85 means the standardised ratio is 15% lower (for an area of its population size and structure) in the area than expected from the State rates. The extent to which variation in the index is statistically significant is indicated by asterisks (see *Statistical significance*, below).

Rate ratios

The graphs of the socioeconomic groupings of areas in Chapter 9 include a 'rate ratio', which shows the difference between the average percentage or standardised ratio for that indicator (eg. low income families) in the most disadvantaged areas (Quintile 5) and the most advantaged areas (Quintile 1). The statistical significance of rate ratios is shown with an asterisk(s) (see *Statistical significance*, below).

Statistical significance

Where a ratio varies significantly from the expected level, the degree of statistical significance is indicated by asterisks. A single asterisk indicates that the ratio is statistically significant at the 95% confidence level; that is, that the likelihood of the observed ratio being due to chance or random error is five per cent. A double asterisk indicates that the observed ratio is statistically significant at the 99% confidence level. A separate test has been applied to the rate ratios, with the results reported as described above.

Tables

The data on which the maps are based, copies of the atlas as PDFs, and an interactive map viewer are available on the PHIDU website at www.publichealth.gov.au. The data available are the absolute numbers (number of deaths, population with a particular characteristic, etc.), the denominator on which the rate or percentage has been calculated and the percentages, ratios, etc which have been mapped.

Area mapped/ boundary issues

Statistical local areas

As noted above, the spatial unit used in the atlas is generally the Statistical Local Area (SLA). The SLA is a spatial unit within the Australian Standard Geographical Classification (ABS 2001), the geographical classification defined by the ABS for coding data to areas within Australia. It was chosen as the area to be mapped in this atlas because it is the smallest area to which the majority of statistics of relevance to this report are coded.

[4] Data were standardised to the metropolitan regions where data were not available for the State as a whole (eg. domiciliary care, community health services and the estimates of chronic diseases).

The SLAs mapped are shown on the key map at the end of the atlas.

Urban centres identifiable in the data

Just as the demographic characteristics and health profiles of South Australians vary between residents of metropolitan and country areas, they also vary within country areas, between residents of urban centres and those living in more rural and remote locations. SLAs have deficiencies as a spatial unit to describe urban centres outside of the capital cities and other major urban centres. For example, the majority of the urban centres in South Australia with a population of 1,500 or more cannot be identified in the SLA classification: that is, they are not SLAs in their own right.

To increase the number and range of urban centres for which data could be published, a set of rules was established. The rules allow for an urban centre with a population of 1,500 or more to be mapped where it comprised 75.0% or more of the SLA in which it was located. This resulted in eleven of the 38 urban centres in South Australia (outside of the Adelaide Statistical Division) being mapped. Additional details of this approach are in Appendix 1.2 (Table A2.1).

These urban centres (referred to as towns in the discussion of the maps and data in the atlas) are shown as circles on the maps. In cases where the area of the SLA is larger than the area of the circle, the underlying SLA can be seen on the map, and both are mapped in the same shade. An example is the town of Whyalla.

Burden of disease areas

A number of estimates of burden of disease provided by the Department of Health and mapped in Chapter 6 have been mapped to larger areas because of the small number of cases. These areas were also used for mapping infant deaths and are shown on the key map at the end of the atlas.

Other supporting information

Wherever possible, the introductory notes to each topic provide background information to the topic (e.g. hospital admissions) as well as the individual variables mapped (e.g. admissions to a public acute hospital). This background information may include definitions, details of collection methods, references to other analyses relevant to the variable being mapped, and details of the age distribution of the population represented in the data.

Major limitations

Data availability

Despite the generally high quality of health data in Australia, identifiable gaps and deficiencies, as documented by AIHW in 1998, remain. These include: *The quality of Indigenous health statistics*; *Data requirement for national health priority areas*; *Health Surveys*; *Public health information*; and *Health service outcomes and quality of health care*. Data for small area analysis in these areas are particularly deficient.

Details of data limitations, with an emphasis on small area data, are included in the introductions to Chapters 6 and 7. In addition to the collection-specific limitations noted, two important overall limitations of the data for undertaking small area analysis are discussed below. These are the geographic areas to which small area data are classified and the lack of linked data.

Areas

SLAs vary widely in size (both of area and of population). For example, the 2001 Estimated Resident Populations of SLAs in the metropolitan regions range from 2,888 in Playford - Hills to 35,006 in Onkaparinga - Woodcroft; and, in country areas of South Australia, from 17 in Unincorporated Lincoln to 23,600 in Mount Gambier. Similarly, the area covered by SLAs varies widely, from 3.5 square kilometres to 169.4 square kilometres in the metropolitan regions; and from 18.4 square kilometres in Unincorporated Yorke to 671,466 square kilometres in Unincorporated Far North in country South Australia.

These differences lead to major difficulties using data of the type in this atlas, whether directly from the maps, or through the correlation analysis, without reference to the population covered by the variable. The relevant SLA population size is included in the discussion to minimise this issue.

Data linkage

There are many datasets in Australia that include information which, when linked, can potentially increase their value for research and policy analysis. This is equally so for small area analyses. Results from data linkage can lead to changes in the way services are delivered. Data linkage is attracting increasing attention in Australia and in South Australia. It is to be hoped that ways can be found to enable data linkage to proceed in this State in a much broader and speedier way than at present.

Important points to note

The following points should be noted when reading the maps and text.

Usual residence

The maps in this atlas generally reflect the distribution of the population (with various characteristics) by location of their 'usual residence'. For some people their current usual residence will have been the same for many years,

while for others, it will be only a recent address. It is not possible to distinguish in the statistics between long and short term residents. *The analysis assumes, therefore, that the populations mapped in each area usually reside in those areas, or in other areas sharing similar characteristics.* This is a common assumption in analyses of this nature, and a reasonable assumption for the majority of the data analysed (see comments on page 19 regarding results of the analysis of Western Australian data).

In those instances where this assumption is not warranted, or can be less certainly applied, the analysis has been constructed to take this into account, or attention is drawn to this deficiency. For example, this may occur in relation to deaths data, where a substantial proportion of deaths of people aged 65 years and over occurs in residents of nursing homes. The location of the nursing home is quite likely to be different from that of the residents in their pre-nursing home lives, so the analysis is of deaths at ages under 65 years (and also because deaths at under 65 year of age can be considered to be 'premature').

The treatment of deaths data is discussed in more detail in Chapter 6 (pages 279 to 282).

Reading the maps

The choropleth mapping technique adopted for the atlas inevitably involves a degree of generalisation because it conceals variations within the areal units used. The larger the areal unit, the greater the degree of generalisation, and for this reason, the values (percentages, ratios, rates) shown on the maps for large SLAs, in particular those which are sparsely and irregularly populated, or have very small populations, must be treated with caution.

This problem can be minimised by presenting the data by very small areas, such as the Census Collection District (CD) used in the social atlas series produced by the ABS for capital cities. However, only Census data are generally available at the CD level, whereas the SLA (or postcode) is the smallest area for which most health status and service use information is available across Australia.

3 Regional profile

This chapter is an abbreviated version of a longer paper prepared for the atlas by Professor Graeme Hugo, from The University of Adelaide, and titled, *A Regional Profile of South Australia's Population*. The full version of this paper is available from the PHIDU website at www.publichealth.gov.au.

Introduction

South Australia has had a distinctive demography in the Australian context (Hugo 1983; 1996; 1999; 2002a and b). Population growth has been the lowest of the mainland states over much of the last decade. The most recent ABS population estimates show that the State's population grew at 0.6% from 2004 to 2005, compared with 1.2% for the nation as a whole (ABS 2005) to reach 1,542,000 in June 2005. This represented the fastest annual rate of growth of the State's population since 1998-1999. Nevertheless, partly as a result of the generally slow growth, the State had the largest percentage of its population aged 65 years and over (15.0% in 2005 compared with 13.0% in Australia as a whole) of any of the States and Territories. The State government and others in the community have expressed concern about these and other aspects of South Australia's population.

This chapter seeks to outline the major features of the demography of South Australia's population. In particular, it examines aspects of the population living in the various areas of the State, especially as reflected in the results of the 2001 Census of Population and Housing. Some 73.1% of the State's population currently reside in the Adelaide Statistical Division – the largest proportion of any of the States. The numerical dominance of the State's metropolitan population has meant that the population in regional parts of the state is often not given sufficient attention in analyses of the state population.

This chapter examines the nature of each of the health regions delineated by government following the Generational Health Review (GHR), and discusses their population dynamics and some of the specific health challenges which they currently face. At the outset, however, it is necessary to briefly overview the development of South Australia's total population.

Overview of the population

The Indigenous population

Background

The Aboriginal and Torres Strait Islander population of South Australia has a unique demography. No other sub-group in the State's population differs from the total population as much in its social, economic and demographic characteristics. Over thirty years ago, the National Population Inquiry (NPI 1975) summarised the situation as follows:

> *In every conceivable comparison, the Aborigines and Islanders … stand in stark contrast to the general Australian society … They probably have the highest death rate, the worst health and housing, and the lowest educational, occupational, economic, social and legal status of any identifiable section of the Australian population.*

At that time, their demographic characteristics were more those of a Less Developed Country population than of a Developed Country. Although there have been significant changes since then, there is still much validity in this assessment.

The Aboriginal occupation of South Australia goes back at least 25,000 years and possibly up to 40,000 years. As Griffin and McCaskill (1986) have written, "The Aboriginal occupation of South Australia exceeds 1,200 human generations compared with a maximum of eight generations of European occupation." There are substantial difficulties in the counting of the Aboriginal population partly associated with the marginal circumstances in which many live, leading to them being missed in censuses. This problem has been overcome to a degree in recent censuses through the ABS employing special procedures, which undoubtedly have led to successively greater proportions of the Aboriginal population being counted.

Population numbers

A greater problem relates to variations between censuses in the extent to which people do or do not identify themselves as Aboriginal and or Torres Strait Islander in the census. Increased readiness to identify oneself as Indigenous undoubtedly is a major factor in the rapid increase in numbers between 1981 and 1986. Regardless of these data collection problems, however, it is salutary to note that the approximate Aboriginal population in South Australia at the time of first white settlement in Australia (1788) is estimated to have been at a minimum, 15,000 (Smith 1980). The subsequent decimation of the State's Indigenous population was such that it has taken some 200 years to get back to that level.

Table 3.1 shows the changes in the South Australian and Australian Indigenous populations over the period since initial European settlement. Although the data are poor, the pattern they reveal

is definitely indicative of the trajectory of decline and growth in the Aboriginal population over the last two centuries. At the time of initial European settlement, 4.7% of the continent's Aboriginal population lived in South Australia. At the 1986 census, this had increased to around 6.3%, compared with 8.6% of the national population being enumerated in South Australia. In 2001, the proportion of both had declined to 5.6% and 7.6% respectively.

Table 3.1: Estimates of total Indigenous population, South Australia and Australia, 1788 to 2001

Year	Australia	South Australia	% in South Australia
1788	314,500	15,000	4.8
1861	179,482	9,000	5.0
1871	155,285	7,500	4.8
1881	131,366	6,346	4.8
1891	111,150	5,600	5.0
1901	94,598	4,888	5.2
1911	80,613	4,692	5.8
1921	69,851	4,598	6.6
1933	67,314	4,699	7.0
1947	70,465	5,600	7.9
1954	75,567	6,300	8.3
1961	85,685	7,200	8.4
1966	101,978	8,100	7.9
1971	115,953	9,450	8.1
1976	160,915	10,714	6.7
1981	159,897	9,825	6.1
1986	226,837	14,291	6.3
1991	282,979	17,239	6.1
1996	386,049	22,051	5.7
2001	460,140	25,620	5.6

Note: Figures up to 1971 are estimates of Smith (1980) and involve adjusting census figures upward. In subsequent years the unadjusted census totals are given.
Source: NPI 1975; Smith 1980; ABS 1976, 1981, 1986, 1991, 1996 and 2001 Censuses

This is not the place to analyse in detail the tragic decline of the Aboriginal population under the catastrophic impact of European settlement, which saw their numbers decline to less than a third of their pre-contact population by the 1921 census (in the nation as a whole the decline was to less than a quarter). Suffice it to say that the major elements were:

- increased mortality due to introduction of new diseases, disruption of living patterns, usurpation of traditional lands, displacement from livelihood and outright slaughter;
- greatly decreased fertility due to introduced disease rendering many women infertile; and
- the devastating effects of European penetration on the Aboriginal culture, social patterns and economy.

The 2001 census count was the most reliable census of the Aboriginal population yet. It is clear that, despite considerable problems with the data and especially comparability between censuses, there has been significant growth of the State's Aboriginal population. Over the last intercensal period, the Aboriginal population increased by 16.1% while the total population of the State increased by only 2.2% (for further discussion, see Chapter 4).

Inequality: deaths

There is no greater inequality between people than inequality in the face of death. This is the ultimate, unarguable evidence of the disadvantaged situation of the State's Aboriginal population. Currently the death rate among the Indigenous population in Australia is more than twice that of the total Australian population. Moreover, the ABS points out that the poor quality of identification of the Indigenous population in deaths' registrations means that this differential is likely to be significantly greater (ABS 2002). The ABS estimate across Australia that the coverage of Indigenous deaths is about 58%, and, in South Australia, it is 66% (ABS 2003). It is important to bear in mind that the differentials outlined here comparing Indigenous and total deaths tend to understate the actual level of difference.

The ABS has developed an experimental life table of Indigenous people (Table 3.2), which shows that, at birth, Indigenous boys have an expected life span of 18.1 years less than all boys and for girls the difference is 14.8 years. Even in older years, the difference remains substantial. It must be reiterated that this represents an inequality of major and concerning dimensions.

Table 3.2: Comparisons of life expectancy at selected ages, Indigenous[1] and total populations[2], South Australia

Age	Males			Females		
	Indigenous	Total Population	Difference	Indigenous	Total Population	Difference
0	58.5	76.6	18.1	67.2	82.0	14.8
20 years	40.7	57.4	16.7	48.8	62.7	13.9
40 years	25.2	38.7	13.5	30.9	43.3	12.4
60 years	13.4	20.8	7.4	16.2	24.7	8.5

Source: [1] ABS Abridged Experimental Indigenous Life Tables, SA & WA 1996-2001 (ABS 2003); [2] ABS unpublished data, for the period 1998-2000

The level of mortality among infants is one of the most sensitive indicators of differences in social wellbeing between groups. In the late 1960s, the Infant Mortality Rate (the number of children born alive and dying at under one year of age per 1,000 live births) for Aboriginal people was estimated at 144 for males and 143 for females (NPI 1975), while the comparable levels for the total Australian population were 18.8 for males and 15.0 for females. From 2001 to 2003, the State figures fell to 5.3 for males and 12.9 for females (ABS 2003).

The dramatic decline in infant mortality rates has been a result of decreased fertility (reducing the number of high risk births), greater prenatal and post-natal care, greater education especially among Indigenous women but also the enormous changes in the availability of health services following documentation of exceptionally high infant mortality levels in the 1980s (Thomson 1983). Nevertheless, in 2002, the Aboriginal infant mortality rate was twice as high as that for the total population. This compares to four times as high in 1975 and 1980 (Hugo 1990). The South Australian rates for the Indigenous population are considerably lower than the estimated national figure (12.7).

The causes of comparatively high levels of infant mortality are the ongoing consequences of poverty and inequality, and the excessive Aboriginal deaths at the youngest ages are gastro-intestinal and respiratory infections, and accidents. In principle, almost all such deaths are preventable, and there is still a considerable challenge to provide accessible and appropriate health services.

In each of the leading causes of death, the median age at death for the Indigenous population is lower than for the total population. The standard causes of death do not show the deeper underlying causes of death but rather the disease that caused death. The deeper underlying causes are associated with poverty, deprivation, dispossession, powerlessness, and the loss of culture and hope. Thomson (1984), in demonstrating the failure of more than a decade of special Aboriginal health programmes to attain the goal of equal health status, accurately identifies these inequalities as stemming from "the extreme social inequality experienced by Aborigines. The social inequality is characterised by poverty and powerlessness, and is directly related to the dispossession and discrimination to which Aborigines have been, and are still being, subjected". One needs look no further to explain the huge contemporary differences between Aboriginal mortality in South Australia and that of the population as a whole.

Population distribution

Over recent decades, South Australia's Indigenous population living in metropolitan Adelaide increased from less than a quarter in 1971 to a third in 1986 and to 44.8% in 2001. The proportion in 'other urban areas' increased from a fifth in 1971 to almost a third in 1986 and has remained steady. On the other hand, the proportion in rural areas has fallen, from more than half to less than a quarter. This reflects the continuing urbanisation of the Indigenous population in the state. While this distribution is converging toward the overall pattern of distribution of the state's population, the Indigenous population is still much more dispersed than the total population, and is much less concentrated in Adelaide.

By far the largest group of the non-metropolitan Indigenous population is in Port Augusta and this has been the case over a long period. There are also substantial communities in the west coast cities of Whyalla, Port Lincoln and Ceduna and in Coober Pedy in the north. However, the most rapidly growing 'other urban' communities are in Murray Bridge and Mount Gambier.

Despite a decline in its relative significance in the State's Aboriginal population distribution, the far north remains the area with the highest proportion of its total population made up of Aboriginal people. More than one in five persons 'outside the cities' are Aboriginal. The area is a huge one – covering more than two thirds of the State – so it is important to consider the distribution of the Aboriginal population within it.

Adelaide now has the largest single community of Aboriginal people within the State and is the focal point of many Aboriginal organisations. Gale (1980) found that, in the Adelaide Aboriginal

population, there were several competing forces operating to shape their spatial distribution within the metropolitan area. Firstly, there are forces making for spatial agglomeration. These include the kin networks, which are such an important influence shaping Aboriginal settlement. Moreover, the fact that most Aboriginal people have low incomes greatly restricts the areas in which they can afford housing.

Secondly, there is a set of influences that are encouraging a more dispersed pattern of settlement. One element here is the fact that a high proportion of the Indigenous population occupy rented State housing authority dwellings, and these SA Housing Trust (SAHT) houses are almost entirely restricted to low socioeconomic status areas. In 2001, the largest concentration of Indigenous people was in the local government area of Salisbury, followed by Port Adelaide and Enfield, Playford, Elizabeth and Woodville. The north-west orientation of the Indigenous population is clear, and reflects their disadvantaged position within the total community, being concentrated in lower socioeconomic status areas.

Table 3.3: Estimated resident population, Indigenous status by section of state and South Australia, 30 June 2001

Section	Persons					
	Indigenous		Non-Indigenous		Total	
	No.	%	No.	%	No.	%
Major urban	11,451	44.8	1,023,266	68.9	1,034,717	68.4
Other urban	8,206	32.1	260,926	17.6	269,132	17.8
Bounded locality	2,229	8.7	44,472	3.0	46,701	3.1
Rural balance	3,658	14.3	157,520	10.6	161,178	10.7
South Australia	25,544	100.0	1,486,184	100.0	1,511,728	100.0

Source: ABS, South Australian Office

There is a concentration of South Australia's Indigenous population in the north-western corner of the State, the region to which the Pitjantjatjara people gained full title in 1981. Other concentrations are found in the small urban centres of the far north – Oodnadatta, Coober Pedy and Marree. The Aboriginal population in the opal-mining centre of Coober Pedy has increased, but the numbers in Marree and Oodnadatta have declined. The other major concentrations are in Yalata on the far west coast of the State, and Nepabunna.

Another major pattern is the concentration of Aboriginal people in small towns and rural areas near former missions or reserves. Hence, the concentrations in the Riverland around the Gerard mission, in the Central Yorke Peninsula area near the Point Pearce mission and in the Murray Mouth area near the Point McLeay (Raukkan) mission. The recent patterns of growth in non-metropolitan South Australia, apart from the provincial cities, are clearly on the west coast, Yorke Peninsula, the Upper Murray and the Coorong area, and in the north. These are all areas where missions were previously located.

Age structure

The Indigenous age structure is substantially younger than the total population of South Australia, reflecting the different fertility and mortality patterns outlined earlier (see Figure 4.2, Chapter 4, page 56). This means that the structure of service need and demand differs substantially between the two groups. There is clearly a strong 'over-representation' of dependent children and young adults (especially in the school-leaving age groups) and low representation of older age groups. At the 2001 census, while only a third (32.2%) of non-Aboriginal South Australians were aged less than 25 years, the proportion of Aboriginal people in the age category was close to two thirds (64.9%) (64.4% in 1981). On the other hand, only 2.8% of Aboriginal people were aged 65 years and over (4.0% in 1981) compared with 14.9% of the non-Indigenous population. Thus, the Indigenous population profile has not aged markedly between 1981 and 2001.

There are, however, regional variations in the age structure of Aboriginal groups. Children are predominant in the age structure in provincial urban centres, as are young adults in Metropolitan Adelaide. The rural population has an older age structure, although it is still significantly younger than the total rural population. The oldest age structure among the total population is in the metropolitan sector and the youngest in rural areas. Again, this has significant implications for planning service provision for the Aboriginal populations.

The Aboriginal age structure also reflects the relatively high levels of fertility and mortality in the population described earlier. It is important to point out that the age structure carries the potential for high rates of growth in the future. This is because it is clear that over the next fifteen years, the number of women in the childbearing years is going to increase significantly. Whereas the

number of Aboriginal women aged 15 to 44 years in 2001 was 6,105, those aged 0 to 29 (who will be aged 15 to 44 in 2016) was 8,260.

Hence, even if significant declines in fertility (births per woman) occur over that period, the fact that there will be substantially more potential mothers than in the past will see a continuation of large numbers of births and a high growth rate. The other issue relating to the age structure is the implication for social welfare and for particular types of services. The need for education of Aboriginal children will continue to expand while that of the total population stabilises. The number of Aboriginal youth coming into the labour force ages will greatly expand over the next 15 years.

In a contemporary situation of a tight labour market, this raises the question of how this group, who are currently excluded from many parts of the labour market, can be absorbed.

Inequality: socioeconomic factors

Assessment of the levels of wellbeing among the Aboriginal population has been a difficult task, partly due to lack of suitable data, but also as Young (1985) points out:

> *"Census definitions and criteria are derived from internationally recognized standards which enable them to be used in a comparative sense. But they may not be appropriate to the real life situation of many Aboriginal groups".*

Hence, in interpretation of data to the wellbeing of Aboriginal people, it is essential to be sensitive to the meaning of the indicators used to the Aboriginal population. Nevertheless, regardless of the data problems, it is clear that the incidence of poverty and deprivation is far greater among the Aboriginal population than any other large sub-groups in the total population.

It is apparent from Table 3.4 that the Indigenous population has significantly lower rates of employment than for the total population. This applies in all age groups for both males and females. Overall, in 2001, 49.5% of the Aboriginal population aged 15 years and over was in the workforce, compared with 60.8% of the total population. Participation rates are slightly higher in Adelaide than elsewhere in the State. Young (1985) has discussed the reasons for low Aboriginal labour force participation rates and these include:

- Cultural factors which involve such considerations as 'whether the job is interesting and relevant to community interests, or whether the duties of the job will be comparable with other demands on the person's time'.
- Personal relationships and individual contacts greatly influence whether or not an Aboriginal person is able to get a job.
- Attachment to the local region may prevent them seeking work elsewhere.

Table 3.4: Labour participation and unemployment of Indigenous and non-Indigenous persons aged 15 years and over, South Australia, 2001

Variable	Indigenous %	Non-Indigenous %
Labour Force Participation Rate	49.5	60.8
Males	56.2	68.6
Females	43.2	53.3
Unemployment Rate	20.3	7.4
Males	22.8	8.2
Females	17.4	6.5

Source: ABS 2001 Census

One of the major pressing problems within the Aboriginal community is the high rate of unemployment. In 1986, 34.5% of Aboriginal workers in the State were unemployed compared with 9.6% for the total population. Although the comparative figures in 2001 were 20.3% and 7.4%, it remains a huge problem.

Unemployment is especially high in provincial urban centres and lower in rural areas than in Adelaide. Unemployment rates are highest among young Indigenous groups.

Nowhere are the contrasts between the Aboriginal community and the non-Indigenous population of South Australia more apparent than in a consideration of incomes (see Table 3.5).

Table 3.5: Indigenous and non-Indigenous persons, equalised gross household income, South Australia, 2001

Variable		Indigenous	Non-Indigenous
Mean	$	351	531
Income quintile			
Lowest	%	45.9	22.4
Second	%	28.8	21.9
Third	%	13.1	21.1
Fourth	%	7.6	19.8
Highest	%	4.6	15.4
Total	%	100.0	100.0
Total		20,985	1,139,253

Source: ABS 2001 Census

Although there is a much greater proportion of the total population who are aged persons receiving pensions, the mean household weekly income of Aboriginal people is far lower ($351) than that for the total population ($531). Moreover, because 15.1% of Aboriginal people did not state their income at the census compared with 9.1% of the non-Indigenous population, the data probably understate the differences in their income distribution. The concentration in the two largest income quintiles of Indigenous people (74.7%) compared with the non-Indigenous population (44.3%) is also apparent in Table 3.5.

Table 3.6: Indigenous and non-Indigenous persons aged 15 years and over, highest level of schooling, South Australia, 2001

Variable		Indigenous	Non-Indigenous
Still at school	%	5.7	3.4
Did not go to school	%	3.6	0.8
Year 8 or below	%	17.6	10.5
Year 9 or equivalent	%	12.0	7.1
Year 10 or equivalent	%	21.5	19.3
Year 11 or equivalent	%	16.8	19.5
Year 12 or equivalent	%	14.9	34.9
Not stated	%	8.0	4.3
Total	no.	14,388	1,131,878

Source: ABS 2001 Census

One area in which the disadvantageous situation of the Aboriginal population is evident is education. This is illustrated in Table 3.6, which shows that, while 34.9% of the non-Indigenous population completed year 12, only 14.9% of the Indigenous population did so. Only 14.4% of the State's Aboriginal population aged 15 years or more had a degree compared with 32.6% of the non-Indigenous population.

The profile of educational qualifications is lower in rural than urban areas. Educational attainment is important because it has significant effects on labour force experience, earning capacity and access to goods and services (ABS 1988).

Moreover, at the 2001 Census, only 17.1% of the Indigenous population recorded using computers at home compared with 42.1% for the rest of the population. The equivalent percentages for Internet usage are 17.1% and 26.5% respectively.

In summary, the disadvantaged situation of South Australia's Indigenous population is reflected across a wide range of socioeconomic indicators in Table 3.7. Despite two decades of rapid social and economic change, as a group, they are still the most disadvantaged in the State. The removal of this huge inequity must remain an important priority for all South Australians.

Table 3.7: Comparison of various demographic and social characteristics of the Indigenous and total population, South Australia, 2001

Characteristics	Indigenous Population	Total Population
Expectation of life at birth (years) - male	55.1	76.7[1]
Expectation of life at birth (years) - female	61.0	82.4[1]
Infant mortality rate (deaths per 1,000 live births)	10.6	5.3
Total fertility rate (births per 1,000 women)	2.0	1.7
Percentage in major urban centres	45.2	68.3
Percentage aged less than 15 years	38.5	19.7
Unemployment rate	20.3	7.6
Percentage employed as managers, administrators, professionals	29.2	38.6
Percentage labourers and related workers	24.3	10.8
Percentage with diploma, degree or higher	6.1	17.9
Individual income $199 or less per week (per cent)	47.8	30.1
Individual income $600 and over per week (per cent)	12.5	26.5
Percentage of households living in public rental accommodation	49.3	7.7
Percentage of persons in prisons, corrective and detention institutions, 18 years and over	1.0	0.1

[1]**Figure for total population is for Australia.**
Source: ABS 2001 Census.

The total population

Australia's population is ageing, with the proportion of the population aged over 65 years increasing from 8.3% in 1971 to 12.7% in 2001. Over the same period, the proportion of South Australia's population aged over 65 went from being only slightly above the national average (8.5% compared with 8.3%) to well above it (14.7% compared with 12.7%). Hence, while South Australia's total population grew at well below the national average over the last 15 years, its aged population grew at an annual rate of 3.4%, six times as fast as the total population. This is a faster rate of growth than the national aged population, so that South Australia's population is ageing faster than the nation as a whole. This is due to two factors:

- The fact that there was a net influx of people from interstate and overseas in the 1947 to 1954 period. At that time, most were young adults and they have aged in place.
- The continuous net loss of young adults through interstate migration.

Hence, South Australia has a smaller proportion of its population aged under 34 and a higher proportion aged 45 years and over, than the national population.

One dimension of the ageing of South Australia's population, which is often neglected in policy discussions, relates to its changing spatial distribution. Between 1981 and 2001, the population aged 65 years and over has been growing at 2.09% in Adelaide, compared with 0.64% per annum for the total population.

However, the proportion of the State's older population living in Adelaide declined from 72.7% in 1981 to 71.4% in 2001.

On the other hand, the elderly have become disproportionately represented in 'other urban areas' during the last twenty years, where they were previously under-represented (Hugo 1986). In 2001, some 19.3% of the elderly lived in other urban areas compared with 17.8% of the total population. The older population of centres with between 1,000 and less than 100,000 inhabitants grew by 3.14% per annum between 1981 and 2001 – faster than the aged population of Metropolitan Adelaide and almost three times as fast as the total population of these centres. The proportion of the elderly living in rural urban areas has declined between 1981 and 2001, and only 10.7% of the State's population aged 65 years and older live in such areas. However, the rural elderly grew faster (2.15% per annum) than the total population in rural areas (0.24%) between 1991 and 2001.

Virtually all of Adelaide's inner and central suburbs experienced a decline in the numbers of persons aged 65 years and over during the 1996 to 2001 intercensal period, despite the fact that most of Adelaide's aged care homes and hostels are located in these areas of declining older population.

On the other hand, the most rapid growth of this age group was in the outer suburbs, which are poorly serviced by aged services.

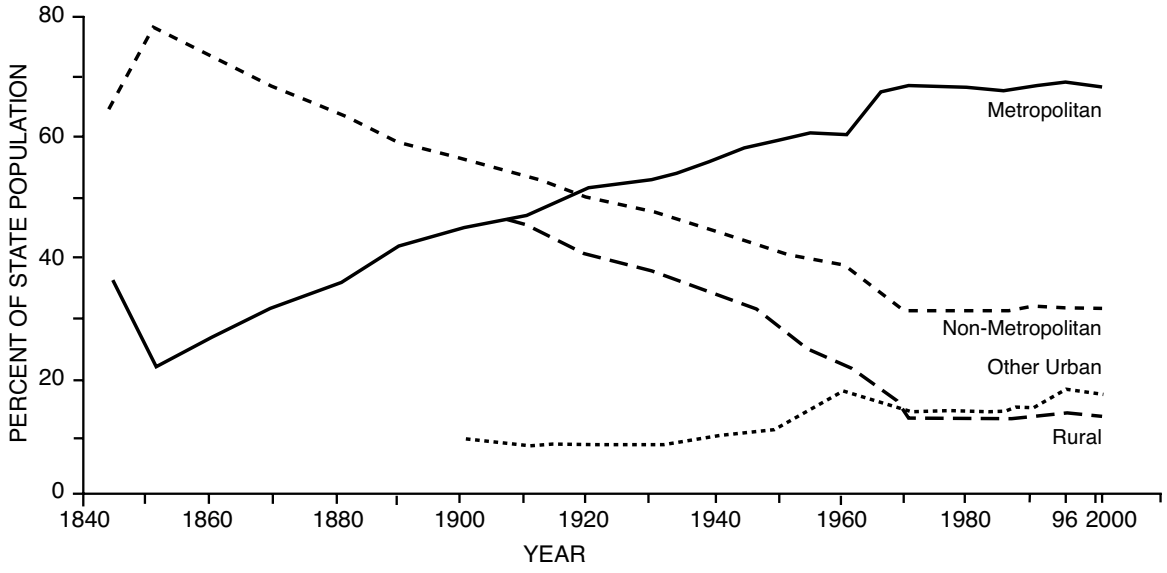
Turning to non-metropolitan South Australia, the spatial patterns are also striking. Elsewhere (Hugo 1986), the types of areas in Australia that tend to have above average concentrations of elderly persons have been identified. The 'types' outside the major urban centres are as follows:

- Firstly, there are certain concentrations in non-metropolitan coastal resort areas, with the growth fuelled particularly by retirement migration toward attractive environments and equable climates.
- A similar resort development is apparent along the River Murray and in favourable ecological niches outside but near Adelaide.
- Many country towns have an above average concentration of older people. This often reflects a pattern of older people retiring from farm properties into nearby towns, which allows them to maintain (and perhaps even enhance) existing local social networks and remain close to their children who have taken over the farm.
- The remainder of non-metropolitan LGAs with above average concentrations of older people are found in the more closely settled agricultural areas. These also tend to be the longest settled agricultural parts of the country. Although located beyond the commuting zones of the largest cities, they tend to be the most accessible of the purely agricultural areas to the capital cities. Here, the above average levels of ageing are less a function of in-movement of older persons than of the heavy out-movement of younger adults. One of the stereotypical characteristics of rural depopulation is an 'old' population structure. In particular, in certain localities (especially in seaside, riverside and other scenically attractive medium-sized country towns), this effect may be supplemented by in-migration of retirees, especially those moving from farms.

There have been substantial changes in the population balance between rural and urban areas in the State and in the proportion of the State's population living in Metropolitan Adelaide (Figure 3.1). After more than a century of increasing concentration of the State's population in Metropolitan Adelaide, the proportion of South Australia's population living in Metropolitan Adelaide has stabilised over the last quarter century. For example, the proportion of the State's population living in the Adelaide Statistical Division was 73.1% in 1991 and 73.4% in 2001.

This illusion of stability, however, masks considerable mobility. For much of the post-war period, Metropolitan Adelaide has accommodated increased population by lateral extension of the built up area, thus reducing population density.

Figure 3.1: Changing distribution of the population between metropolitan, other urban and rural areas, South Australia, 1844 to 2001



Source: Hugo 1971; ABS censuses 1971 to 2001

The pattern of population change in Adelaide was the classical 'doughnut' pattern, with population decline in inner and middle suburbs grading to moderate population growth in the middle suburbs, and rapid growth on the urban fringe. However, it is evident that this pattern no longer holds and there are significant areas of the inner and middle suburbs that are experiencing population growth. This is due to the following elements:

- Gentrification, which has seen the movement of well-to-do, often two income couples into attractive older housing areas and inner and middle suburbs associated with changed lifestyle preferences for living near the city centre.

- Urban consolidation activities of state, local and city governments which have seen development of land in established suburbs, formerly occupied by factories, schools and other extensive uses developed for medium density housing.
- The ageing of the massive cohort, which moved into new housing in the 1950s and 1960s, has seen many die off or move into specialised elderly accommodation. This has meant unprecedented numbers of houses in the middle suburbs come onto the Adelaide housing market. This has offered possibilities for younger people to move in, as individual house blocks or groups of them are redeveloped for housing.
- It may be that the large baby boom cohort is showing a difference to earlier generations of 'empty nesters' in their late 40s and early 50s. Whereas most of earlier generations have stayed in the family suburban home after 'launching' their children, there are signs that many baby boomers may be trading down to smaller, more centrally located houses.

The major net gains by intrastate migration have been within the inner, and some middle and coastal suburbs. Certainly some areas on the periphery have experienced net gains, but it is far from the "doughnut" patterns in net migration observed in the pre-1990s period.

There were distinct patterns of population change in the non-metropolitan part of the State. Growth was strongly concentrated in the area around Metropolitan Adelaide as well as in and around prominent centres. The Outer Adelaide Statistical Division was the fastest growing statistical division in the State in 1991 to 1996 with its population expanding at 2.3% per annum. It remained the fastest growing statistical division over 1996 to 2001. However, although it grew at a rate three times as fast as the Metropolitan Adelaide rate, it was at a slower rate than in 1991 to 1996.

The fastest rates of growth were in Victor Harbor (3.6%) and in the Goolwa-Port Elliot area (3.0%). Clearly, the South Coast area's function as a resort-settlement focus is increasing. In addition, however, it has become an increasingly important dormitory area for Metropolitan Adelaide. The numbers commuting each day from SLAs in the Outer Adelaide Statistical Division (OASD) to the Adelaide Statistical Division (ASD) to work increased from 11,115 in 1991 to 14,735 in 2001. The proportion of workers in the OASD who work in the ASD has increased from 29.3% to 31.0%. Other parts of the Outer Adelaide Statistical Division all grew at more than 1.0% per annum except for Kangaroo Island, which grew at only 0.1%.

In the Yorke Peninsula and Lower North Statistical Division, the annual rate of increase of population doubled from 0.1% in 1991 to 1996 to 0.2% in 1996 to 2001. The population of Yorke Peninsula declined slightly but there was significant growth (1.3%) in the Copper Coast settlements to the north of the peninsula. The Clare and Gilbert Valleys grew slightly.

The Murray Lands Statistical Division grew by 0.1% per annum in both 1991 to 1996 and 1996 to 2001. However, growth was confined to the urban centres of Murray Bridge, Berri, Renmark, Loxton and Waikerie.

In the South East, there were more or less static overall population numbers in 1991, 1996 and 2001. However, Mount Gambier's population grew by 0.5% per annum in 1996 to 2001 and Robe grew by 0.4%.

On Eyre Peninsula, a small decline in 1991 to 1996 (0.1% per annum) was transferred to a (0.5% per annum) gain in 1996 to 2001. However growth was largely confined to Port Lincoln (1.6% per annum), Cowell (1.3%) and Ceduna (0.6%).

In the Northern Statistical Division, a growth rate of 0.4% per annum in 1991 to 1996 increased slightly to 0.5% in 1996 to 2001. However, the bulk of growth was in Roxby Downs (5.6% per annum) and there were declines in most other areas.

Most SLAs experienced net losses in intrastate migration. Virtually all of the non-metropolitan areas experiencing net gains were in the Outer Adelaide Statistical Division, especially the Barossa Valley and South Coast regions, which are the main poles of growth (with Mount Barker) in the Outer Adelaide Statistical Division. There were small outliers of growth in the Northern York Peninsula town of Wallaroo/Kadina and Moonta and in the remote mining community of Roxby Downs. Elsewhere, there was either net migration loss or stability. The heaviest net migration loss was in the Whyalla - Port Augusta area.

Background to the formation of the new Health Regions

It is now recognised that a broad range of factors determine our health, both at an individual level and at a population level. In order to optimise the health of all South Australians, we need a balance between supporting those social, economic and environmental conditions that will encourage good health and prevent illness, and offering the care necessary to treat sickness and disease, and provide rehabilitation and palliative care.

Historically, in South Australia, the majority of resources in the health system have been placed in the acute hospital care sector to treat injury and

illness in individuals once these have occurred (DHS 2003a). Far fewer resources have been invested in preventing illness and injury, and promoting the health and wellbeing of the whole community. This has led to an over-reliance on the 'ill-health' part of the system, without supporting those elements of the system that are aimed at healthy development, disease prevention and earlier intervention; and has meant reduced opportunities to achieve a healthier population overall in this State.

The requirement to redress the balance in South Australia's health care system to reflect a greater focus on prevention and early intervention was identified over thirty years ago (Bright 1973). At that time, the need for a shift in the proportion of resources spent on acute hospital-based services to community-based preventive health care and wider health promoting programs was highlighted. This also meant a greater role for general practitioners and other health practitioners in improved primary health care, and a larger proportion of health funding for community health centres and programs (Bright 1973).

However, progress in achieving change in South Australia over the following decades was slow. In May 2002, the South Australian Government initiated a Generational Health Review (GHR) of the health care system. The aim of the Review was to deliver a plan that would provide effective strategies for reform of the health system, to ensure that "all South Australians could enjoy the best possible health and have access to high standards of care".

The final report was released in April 2003. There were many challenges identified for the State:

- population changes - people were living longer and were ageing at a faster rate than other states;
- changing disease burden - more people were suffering from diseases such as cancer and heart disease, and there was a growth in the number of people who had multiple, chronic and complex health conditions;
- distribution of services - ensuring that the right services were available at the right place at the right time to meet the health needs of all citizens;
- fragmentation and duplication of planning, patient assessment processes and the delivery of services;
- health inequalities - some population groups had very poor health or limited access to health services. These groups included Aboriginal people, children and young people, the frail aged and those with a mental illness (DHS 2003a).

The Review outlined a number of key themes critical to delivering the required health reform agenda. These themes were:

- promoting a population health approach;
- promoting primary health care;
- accountability and transparency;
- workforce development; and
- health inequalities, and health as a human right.

The objectives for the health care system, in partnership with governments and communities, were 'to strive to maintain and improve the health of the population with an emphasis on addressing health inequalities, and to ensure safe, accessible, efficient and effective health care' (DHS 2003a).

The State Government began a process of reform in response to the GHR (DHS 2003b). Key requirements were to reorient the system towards primary health care whilst balancing the critical role of hospitals; to focus on population health needs and system coordination; and to achieve sustainability in the longer term. This also meant defining the role of a new Department of Health (DH).

In July 2004, the metropolitan area of Adelaide was divided into two geographic regions and a population-based region, with each region overseen by a new Board responsible for coordinating all the health services within the region.

These were:

- the Central Northern Adelaide Health Service;
- the Southern Adelaide Health Service; and
- the Children, Youth and Women's Health Service.

The three Boards replaced twelve hospital and health service boards, which agreed to dissolve. The Repatriation Hospital remained as an independent entity, but working in concert with the new Southern Adelaide Health Service. The Institute for Medical and Veterinary Science (IMVS) and Metropolitan Domiciliary Care were also left as separate entities.

In the country areas, the existing seven regions remained. However, they were diverse geographically and also had significant population differences across the regions, with three country regions having only 30,000 to 34,000 people. Access to specialised health care services and recruitment and retention of skilled staff continue to be major issues facing non-metropolitan health services. Reforms to the non-metropolitan health services are planned in line with the Government's reform agenda, and the Department will consider the non-metropolitan area as one region for the purposes of resource allocation.

Metropolitan health regions

The Central Northern Adelaide region

The Central Northern Adelaide region covers the central, western, eastern and northern suburbs of the Metropolitan Adelaide (excluding Gawler) incorporating the Local Government Areas (LGAs) of Adelaide, Prospect, Walkerville, Burnside, Campbelltown, Charles Sturt, Norwood Payneham St Peters, Playford, Port Adelaide-Enfield, Salisbury, Tea Tree Gully, Unley, West Torrens and part of Adelaide Hills. The region contained 763,508 people at the 2001 Census (774,714 in mid 2004) – some 50.5% of the State's total population. Its population grew at a slower rate than the State as a whole between 1996 and 2001 (0.48% compared with 0.50%) and between 2001 and 2004, its annual growth rate (0.49%) remained below the level of the total State (0.51%).

Since the region has just over half of the State's population, its age structure is strongly similar to that of the State as a whole. However, Figure 4.1 (Chapter 4, page 55) shows there is an over-representation in the young adult ages – a cohort in which South Australia as a whole is deficient compared with Australia as a whole. Both the 0 to 4 and 5 to 14 year old age groups were under-represented in the area, compared with South Australia as a whole; but the decline in the 0 to 4 year age group was lower, and the increase in the 5 to 14 year age group was greater in the region than in the State as a whole.

The 15 to 24 year old youth age category is one of the most crucial from the perspective of the State's economic and social development. Between 1991 and 2001, the number of persons in South Australia aged between 15 and 24 years declined by 18,930 or nine per cent. However, fully 74% of this decline was accounted for by the Central Northern region, which saw a loss of 14,007 in this age category between 1991 and 2001. Nevertheless, the group were still slightly over-represented at the 2001 population census. The loss in these ages is partly a function of lower fertility cohorts moving into this age group, but especially of the sustained net migration loss of this age group, which South Australia experienced in the 1990s.

The experience for the 65 years and older age group is in stark contrast to the younger ages with a massive growth of 16.8% between 1991 and 2001 in the region, but this was not as substantial as the growth in the State as a whole (19.9%). Nevertheless, the proportion aged over 65 years (14.7%) is the same as for the State as a whole.

It is important to underline that the Central Northern region is very large and heterogeneous, and the whole of region trends discussed here are the average between sub regions with much higher or lower values. For example, the region contains some of the State's largest growing populations (e.g. Salisbury LGA was the largest growth area in Adelaide in 2003 to 2004, increasing by 2,100 persons) as well as areas experiencing population declines (e.g. Tea Tree Gully LGA's population decreased by 170 persons).

In no area is this intra regional diversity more evident than in socioeconomic status. The Index of Relative Socioeconomic Disadvantage (IRSD) scores for the region is only slightly lower than for the State as a whole and the metropolitan regions, but the region contains the areas of both highest and lowest scores in the metropolitan area. A similar proportion of families are in the low income category (23.1%) to the State as a whole (23.8%), and the proportion has increased substantially since 1991 when 17.7% of families in the region had low incomes (compared with 19% in the State as a whole). It is important to note that low income families in this region not only include families in poverty, but also many older persons and older couples who are asset rich, but income poor.

It is interesting that while the State's population grew by only 7.5% between 1991 and 2001, the number of households grew by 14.6%. However, the bulk of extra growth was in single person households and the number of families increased by only 6.1%. In the Central Northern region, the increase of five per cent in the number of families was even smaller. There was a slightly higher proportion of families made up of single parent families in the Central Northern region (11.5%) than is the case in the State as a whole (11.0%). This reflects the inclusion of some of the metropolitan regions' poorest areas (such as the Parks and some northern suburbs) in the region. This is exemplified by the fact that 20.4% of families with one or more children in the region had no parent employed, compared with 18.7% in the State as a whole.

The proportion of the workforce that comprises unskilled and semi-skilled workers was 17.4% compared with 18.9% in the State as a whole. However, there are wide differences between the different parts of the area in the occupational structure with the proportion of unskilled and semi-skilled workers being much lower in the eastern and central suburbs than in the northern and western suburbs. In the region, the proportion of the workforce that was unemployed fell from 12.4% in 1991, to 6.9% in 2001, reflecting the improvement in the labour market situation over the decade. This compares to a decline from 11.6% to 6.8% in the State as a whole.

Female labour force participation in the region decreased from 69.4% in 1991 to 65.8% in 2001. In the State as a whole, the rate fell from 69.5% to

66.3%. Educational participation levels have, on the other hand, increased from 75.7% to 80.1%, compared with 76.6% to 80.1% in the State as a whole.

One of the distinguishing features of the Central Northern region is that it is more diverse than the State and the metropolitan regions as a whole. Some 1.1% of the population is Indigenous (up from 0.8% in 1991). While this is lower than the State as a whole (1.6% compared with 1.2% in 2001), it is higher than the proportion across the entire metropolitan regions (1.0%). Persons from a Non-English Speaking Background (NESB) decreased from 123,065 to 102,767 between 1991 and 2001, reflecting the downturn in immigration to the State over the last decade. The number of NESB people in the region in 2001 who had arrived in Australia over the previous five years declined by more than a third from 16,042 to 10,535. Nevertheless, 71.7% of newly arrived NESB people in the State lived in this region in 2001. This is reflected in the fact that 3.0% of the region's adults speak a language other than English at home, compared with 1.8% in the State as a whole, and 2.3% in the metropolitan regions.

A characteristic of the region is that a higher proportion of the housing stock is public, being rented from the South Australian Housing Trust (SAHT) housing (8.7% compared with 7.7% in the State as a whole and 8.0% in metropolitan regions). However, this masks the fact that the region contains some of the major concentrations of SAHT housing in the metropolitan regions. The reduced availability of state housing is reflected in the fact that the number of SAHT dwellings in the region declined from 31,745 in 1991 to 25,848 in 2001. The large number of poor households and households comprised of elderly persons accounts for the region having 11.6% of all households without a motor vehicle, compared with 9.9% in the State as a whole. The proportion using the Internet at home in the last week (18.6%) was slightly above the State average (18.3%).

While the region is diverse, the various parts of it will face different challenges over the next decade or so, which will impinge on the need for health services in the region. These include the following:

- The trajectory that the region's population takes, over the next two decades, will be strongly influenced by the extent to which South Australia is successful in its population policy efforts to increase population growth (Government of South Australia 2004). If the State's population were to continue to increase at current rates or at somewhat higher rates, the increase would be disproportionately absorbed in the Central Northern region, particularly in the northern SLAs of Playford and Salisbury. These SLAs will continue to be the fastest growing in the metropolitan regions since they still have substantial parcels of land, which have yet to be put under housing.
- The inner and middle-eastern, western and northern suburbs and central Adelaide are part of the region, and these areas will experience greater population growth than in the recent past due to increased infill, urban consolidation and gentrification.
- There will be an increasing contrast between the eastern and inner areas, which will continue to be higher income, older areas with their young adult populations having small numbers of children. The outer areas will continue to have lower incomes, larger families and a greater incidence of poverty.
- The Parks region, despite considerable efforts to change it, remains a substantial concentration of socioeconomic disadvantage and presents a significant challenge to planners.
- The region's share of South Australia's older population will increase, and the numbers in the more dependent elderly ages over 75 will increase even faster than that of the total population, so this will create considerable pressure on health services.
- The region will continue to be the most multiculturally diverse within South Australia. This diversity will increase with the growing numbers of refugee-humanitarian settlers from the Horn of Africa (Sudan, Ethiopia, and Eritrea) who are now dominating Australia's refugee intake and are settling in disproportionately large numbers in metropolitan regions – most in the Central Northern region. The region's share of the State's Indigenous population is also likely to increase.
- While there is variation within the region, it is certain that there will be a disproportionate concentration in some parts of the region of groups experiencing multiple disadvantages – socioeconomic, physical or mental disability, low levels of skill and training, and exclusion from the workforce and other areas of society.

The trends anticipated above have a number of implications for health services in the region, which will need to be addressed:

- The region contains some of the best-served (central city, eastern suburbs) as well as least well-served parts of the metropolitan regions, with respect to availability of general practitioners. The latter applies to much of the north-western and northern suburbs.

- This difference is also evident across the entire array of specialised medical services and in allied health practitioners.
- There is, on the other hand, a greater concentration of many of the risk factors for poor physical and mental health such as concentrations of people with low socioeconomic status, significant groups of excluded persons, concentrations of unemployed persons, single parent families, disabled persons, people with low levels of education and persons with poor proficiency in English.
- There are, in the north and parts of the northwest, concentrations of culturally distinct groups such as Indigenous people, Vietnamese and recently arrived African refugees, who have distinct health needs.
- One characteristic of the area is that there are areas of low rates of private health insurance taken up, which also places heavy pressure on the region's public health facilities.

The Southern Adelaide region

The Southern Adelaide health region contains the remainder of the population of the metropolitan regions and includes the SLAs of Holdfast Bay, Marion, Mitcham and Onkaparinga. It included 326,133 people in 2001, or 21.6% of the total State's population, or 30.0% of the population in metropolitan regions.

Adelaide's metropolitan lateral expansion is constrained by the Gulf of St Vincent in the west and the Adelaide Hills in the east, so most of the extension of the built up area has been to the north and south. That development to the south has not been as pronounced as in the north, in line with the Metropolitan Planning strategy (Planning SA 2003). Nevertheless, its rate of growth over the 1996 to 2001 period was somewhat faster than that of the north.

Like the north, it is a very heterogeneous area although it does not include any of the inner suburban SLAs, which are all part of the northern region. However, much of the Holdfast Bay SLA is a coastal community, which shares many of the characteristics of the inner and central suburbs – an early settled area with significant amounts of housing built more than a century ago, high and increasing density of housing, a significant "yuppie" (double income, no children) population, a high level of renting, and increasing high rise housing. It does include substantial tracts of middle suburban areas in Mitcham and Marion and extensive recently-settled low density housing, and remaining undeveloped areas suitable for housing. There is also significant socioeconomic variation within the region, although the numbers of low income, poor groups are much less than in the northern region.

The age and sex profile of the region is shown in Figure 4.1 (Chapter 4, page 55). The region has an over-representation, compared with the State, in the baby boomer 40 to 54 year age group, the 15 to 24 year age category and women aged 75 years and over. There were declines in the numbers in the dependent age population, reflecting the slow growth of the State's population as a whole over the last decade. However, the region did not lose its population of 15 to 24 year olds over the period to the same extent as the State's population as a whole. This suggests that the population of the South expanded rapidly in the 1980s with the in-movement of young families whose children grew up in the 1990s. However, like the metropolitan regions as a whole, there was a rapid growth of the older population – the bulk of it in the middle suburbs.

As in South Australia generally, there has been an increase in the number of households growing faster than the population. The number of families in the Southern region increased by 8.1% compared with 6.1% in the State as a whole. It has a slightly higher proportion of its families made up of single parent families (11.4%) than the State as a whole (11.0%). This partly reflects the substantial part of the area being made up of outer suburban low-density suburbs.

It is interesting that the region has a lower proportion of low income families (21.0%) than South Australia (23.8%). However, there was a faster increase in the number of such families over the last decade (38.6%) than in the State as a whole (25.1%). A smaller proportion of families with children had no parent employed (16.6%) than in South Australia, reflecting the fact that the region includes some of the better off areas of the metropolitan regions.

It also has a smaller proportion of the total workforce unemployed (5.9%) than the State as a whole (6.8%) and of unskilled and semi-skilled workers (15.8% compared with 18.9%). Female labour force participation rates (68.6%) are higher than in South Australia overall (66.3%), reflecting a substantial number of two income families in the region. Educational participation rates (82.4%) are higher than the State average (80.1%) as well as higher levels of educational performance than the State average.

The region is somewhat less multicultural than the Central Northern region with 0.7% of residents being Indigenous (compared with 1.6% in all of South Australia) and 8.0% being of NESB origin (compared with 12.2% in metropolitan regions). However, while the Indigenous population in the

area increased from 5,656 to 8,439 persons between 1991 and 2001, the numbers of those of NESB origins fell from 29,208 to 25,172. In particular, there was a fall in the number of recent arrivals (those resident in Australia for less than five years) from 4,082 to 2,731. The low degree of multiculturalism in the region is evident in the fact that only 0.8% of residents have a poor proficiency in English.

The above average mean levels of socioeconomic status in the Southern region is reflected in only 6.4% of households being in SAHT housing; and the number declined from 9,019 to 7,995 in 2001. In addition, despite its older population, there is a slightly lower proportion of the population living in a household without access to a motor vehicle (9.3%) compared with both metropolitan regions combined (10.9%).

This Southern region faces a number of challenges over the next two decades. Much will depend on State planning policy with respect to development of the southern parts of the metropolitan area. Hitherto, there has been a stronger focus on development in the north. The south lacks a north-south public transport line, while the north has a railway, and this will continue to exert some influence. Nevertheless, the south will be one of the main areas, which will be expected to absorb any population increases experienced by South Australia. As indicated earlier, the future population growth in this region will be dependent on the extent to which the State's population policy is able to reach its goals of population growth. Like the north, this region would be expected to absorb a disproportionately large amount of this increase.

Some of the major challenges being faced by the region are as follows:

- At present, the region has a lower level of unemployment than the State as a whole. There are some questions regarding the future of the largest employer in the region, Mitsubishi, but, at the time of writing, the economic prospects of the region are buoyant.
- Like the north, the region will be influenced by processes of urban consolidation as government planning policy stresses increasing housing density in middle suburbs and urban infill. However, there will continue to be growth in peripheral areas on the edge of the expanding metropolitan fabric.
- While the region has above average socioeconomic levels, overall there are concentrations of poverty within the region with significant numbers of people who are multiply disadvantaged.
- More than most parts of South Australia, the south will experience a very rapid growth of its older population over the next two decades.

These shifts in the area have some important implications for provision of health services:

- The rapid growth of the older population over the last ten years is only a prelude to an even more rapid growth over the next two decades. The region is currently heavily under-serviced with specialised services for the elderly and this will present challenges. Incidence of chronic disease, disability and the need for a greater range of independent, semi-dependent and supervised housing options is pressing.
- Like the north, there is a low provision of general practitioners, specialised medical practitioners and allied health practitioners and this needs to be addressed.

Non-metropolitan health regions

There are seven country health regions in South Australia, which were established by the South Australian Health Commission (SAHC) in 1996. They are very diverse in their geography, history and demography, and have varied profiles of disadvantage, which pose significant challenges for regional health planning and service delivery.

The Hills Mallee Southern region

The first of the country health regions, Hills Mallee Southern includes the southern part of the Outer Adelaide Statistical Division (part of Adelaide Hills, Mount Barker, Alexandrina, Kangaroo Island, Victor Harbor and Yankalilla SLAs), the regional centre of Murray Bridge, the Coorong Area and the Murray Mallee region (Karoonda-East Murray, Mid Murray and Southern Mallee SLAs).

This region represents the largest population of the country health regions and incorporates the most rapidly growing non-metropolitan area in the State, that of Alexandrina-Victor Harbor on the south coast. This region, like many such "sea change" areas in coastal Australia, has recorded population growth associated with retirement migration, resort development and as a dormitory region for Metropolitan Adelaide. This rapid growth is reflected in the region having the fastest population growth of any of the South Australian Health Regions in both the 1996 to 2001 (1.38% per annum) and 2001 to 2004 periods (1.57% per annum). However, it must be stressed that the region contains both rapidly growing areas and areas like the Mallee where the population has fallen.

The age composition of the area is depicted in Figure 4.3 (Chapter 4, page 57). Like all non-metropolitan parts of the State, there is a deficit in the 15 to 34 year age categories reflecting the out

migration of young people in the school leaving and labour force entry age categories. There is an over-representation of the dependent child age categories reflecting higher fertility in the area than in the metropolitan area. However, an interesting feature is the marked over-representation in the 40 to 74 year age categories. This reflects the fact that much of the immigration into Alexandrina-Victor Harbor is comprised of pre-retirement and early retirement age categories.

There was a small decline in the numbers of children aged 0 to 4 years between 1991 and 2001, but this group makes up 6.4% of the regional population which is higher than the State average (6.1%). There were increases in all other age groups. There was substantial growth (13.9%) in the numbers of children aged 5 to 14 years compared with a very small growth (0.7%) of this age group in the State as a whole, reflecting the significant in-movement of established families into the south coast region, as well as to the Adelaide Hills communities like Mount Barker. In addition, there was even a small growth in the 15 to 24 year age group, which was an age group that declined in size in South Australia over the 1991 to 2001 period. This reflects the significance of young families in the Adelaide Hills region, in Murray Bridge and the South Coast region. However, this age group remained a smaller proportion of the total regional population (10.7%) than the State as a whole (13.1%) reflecting the situation across all non-metropolitan areas and the strong out-migration of the group from the South Coast and the Mallee-Coorong areas.

The most striking pattern is in the older age groups with the 65 years and over age group increasing by 37.4%, nearly twice as fast as the group's growth in South Australia as a whole. They increased their share of the region's population from 13.2% to 15.3%. Moreover, it is apparent from Figure 4.3 in Chapter 4 that there are large cohorts aged 40 to 59 years in 2001, and thus poised to enter the retirement age groups in the next two decades. Hence, the current rapid growth of the older population will only get more pronounced during this period. Again, it needs to be stressed that this growth of the older population is spatially concentrated in particular areas.

The growth in the numbers of families in the region over the 1991 to 2001 period was 19.8%, the highest of any region and substantially faster than the population increased (8.2%) over this period. The older age structure of the region means that two-person older households are over-represented in the area. Single parent families make up 9.7% of all families compared with 11.0% in the State as a whole. However, there is an over-representation of low income families (28.0%) compared with South Australia as a whole (23.8%). While there are pockets of rural poverty in the region, this is predominantly a function of the older age structure, which means that there are substantial numbers of 'income poor but asset rich' retirees in the region.

The proportion of families with children aged less than 15 years where the parent(s) are unemployed was lower in the Hills Mallee Southern region (16.4%) than in South Australia (18.7%). The overall unemployment level (5.2%) was lower in this region than the State as a whole (6.8%) and the proportion of workers who are unskilled and semi-skilled was greater (21.6% compared with 18.9%) than the State as a whole, but lower than the average for the non-metropolitan regions (24.3%). Hence, in some ways, this region is transitional between metropolitan and non-metropolitan areas, since many of its residents, while living outside Metropolitan Adelaide, commute to work in the city. Female labour force participation levels are similar to the State as a whole and the level of educational participation is only marginally lower (79.3% compared with 80.1%) but on educational performance, scores slightly higher.

As is common in non-metropolitan areas, especially the coastal sea change areas, there is a low level of multiculturalism. The proportion of the population of NESB origin (3.6%) is substantially smaller than for the State as a whole (9.8%) and declined slightly in the 1991 to 2001 period in sharp contrast to the trend in the total population. This reflects the fact that the "sea change" movement is very much an Anglo-Saxon, established Australian resident phenomenon. Only 0.2% of the population of the region have a poor proficiency in English, compared with 1.8% in the State as a whole. There is, however, a significant Indigenous population in the region, which increased from 1,027 in 1991 to 1,589 in 2001, although they only make up 1.5% of the regional population (similar to the 1.6% in South Australia). The Indigenous population is strongly spatially concentrated in the Murray Bridge-Coorong area.

There was a low proportion of all housing that was public rental housing (3.9%) compared with the State as a whole (7.7%), and their numbers declined substantially from 2,005 dwellings in 1991 to 1,638 in 2001. There were also only 6.6% of households which did not have a motor vehicle compared with 9.9% in South Australia. This raises the issue in the sea change areas of whether older people will be able to stay in such areas if their capacity to drive is impaired. The proportion of households using the Internet at home was lower (16.8%) than the State as a whole (18.3%).

The Hills Mallee Southern region is very diverse including sea change coastal areas, commuting rural-peri-urban areas, dormitory areas to

metropolitan regions, a regional city (Murray Bridge), intensively cultivated areas along the River Murray and dry farming areas in the Mallee. Hence, it is not possible to generalise about the issues and problems in the region, as they vary considerably.

However some of the major challenges include the following:

- In the coastal areas experiencing "sea change" type growth, there are a number of pressing issues associated with the rapid growth and the difficulty in keeping up an appropriate level of service provision.
- The region also contains rural areas experiencing considerable difficulty because of structural change in the economy and increasing restrictions on water use from the River Murray. Much of the Murray Mallee area is marginal cropping country with a relatively high frequency of drought. These areas face significant challenges over the next decade.
- As with the other regions considered so far, much depends on the trajectory of population growth over the next two decades and the effects of State population policy. This region contains communities which will become significant dormitories for city workers.
- The City of Murray Bridge is experiencing solid growth and is increasingly adopting a dual role of regional centre and the location of intensive activity serving the metropolitan regions – having chicken batteries, piggeries, recreation facilities, and so on.
- Kangaroo Island faces a range of particular challenges associated with its isolation from the mainland. However, the buoyancy of its tourist industry promises to be an increasing part of its economy in the future.

There are a number of health provision issues which follow from these challenges:

- In the Victor Harbor - Alexandrina - Yankalilla area, there are a number of health issues, which surround the influx of retirees and pre-retirees into the region. It is well known that need for health services increases exponentially once people enter their 70s. Clearly, the rapid influx of people in their 50s and 60s into this area presages a substantial increase in the demand for health services in the next two decades should these immigrants decide to remain in the South Coast area throughout the rest of their lives. The reality is, however, that there has been a longstanding pattern of circularity in this movement, so that many of these in-migrants tended to return to their home area, especially if there is a change in their circumstances with the death of a spouse or the onset of disability. However, there is no research to indicate whether this is a function of "pull" or "push" factors: is it people being pushed out of the retirement-resort areas by the lack of medical and other services, the lack of public transport, and poor accessibility to services, or is it that the pull of children and grandchildren in origin areas is sufficient to bring people back, especially if they are going to be more reliant on getting help from their families? Or is it a mix of both elements? There is also anecdotal evidence of a significant return flow occurring within a short period after arrival because the sea changers are disillusioned by the lack of networks at the destination area. The critical question here from a health service provision perspective is the extent to which it can be anticipated that the in-migrants will remain in the South Coast as they enter the dependency stages of old age. This is a critical determinant of the level to which the demand for a range of health services will increase in the area over the next two decades.
- A less discussed health issue in this region as well as elsewhere in the State is mental health. There are a number of emerging issues in mental health in the area. Related to the first issue, loneliness among older people is one of the most significant barriers to their wellbeing in Australia. This may be exacerbated when they are in-migrants to a coastal community and lose a partner. In the rural sections of the region, there are issues with families facing economic difficulty due to market realignments, restructuring of the economy and drought. The mental strain this places on the people involved is frequently overlooked, and it will be an issue of increasing significance in the region over the next decade.
- A challenge in health service provision in this area is the considerable diversity in the pattern of health needs. The region varies from resort-retirement commuter, dormitory areas for metropolitan regions, sparsely settled rural areas and intensive agricultural areas.
- Rapid population growth in the region will place pressure on local health resources. Hills Mallee Southern has been the fastest growing health region in the State over the last decade and is likely to remain so in the near future.

The South East Region

The South East is one of South Australia's most distinctive non-metropolitan health regions, occupying the south eastern corner of the State and including the SLAs of Grant, Mount Gambier, Lacepede, Naracoorte and Lucindale, Robe, Tatiara

and Wattle Range. The South East has been one of the State's most prosperous agricultural areas and did not experience the population decline during the post-war period which has characterised many of the State's rural communities.

Over the 1996 to 2001 period, the region's population declined by 0.04% per annum compared with an increase of 0.50% per annum for the State as a whole. From 2001 to 2004, the population grew by 0.66% compared with an increase of 0.51% in the State as a whole.

The South East has a varied economy based on a number of primary industries – forestry, fishing, grazing and intensive agriculture, although tourism is of increasing significance. Its urban system is dominated by the regional centre of Mount Gambier (with a 2001 population of 23,503 – the largest regional urban centre in South Australia). Provision of health services in the region is complicated by the fact that there is considerable overlapping of community of interest areas across the boundary with Victoria.

The age and sex profile of the region is depicted in Figure 4.3 (Chapter 4, page 57) at the 2001 Population Census. The South East is significantly younger than the State's population as a whole. All of the age groups under 54 years for males are over-represented except for ages 20 to 29 years. The under-representation in the 20s is a function of the pattern in all rural areas of an out-migration of youth, although it is less marked in the South East than in many other areas. It is interesting that there is no over-representation in the 30 to 49 year age groups among women as there is for men, although there is a strong over-representation of dependent children. There is an under-representation of older people in the South East compared with the State as a whole.

The over-representation of the 0 to 14 year age group is in evidence, but the decline in these ages over the 1991 to 2001 period is greater than in the State as a whole. The 15 to 24 year age category is under-represented compared with the State, and declined slightly faster than the State as a whole over the last decade. The 65 years and over age group is also under-represented and, while it grew by 17.1% over the 1991 to 2001 period, the rate was below the State average. Hence, ageing is less pronounced in the South East than elsewhere.

The number of households in the South East region increased by 10.0% between 1991 and 2001, compared with the population declining by 0.4%. Families increased by only 2.2%. Single parent families were under-represented (8.9% of families) compared with the State as a whole (11.0%), as were low income families (21.9%, compared with 23.8%). The fact that this region is generally better off than other rural areas is reflected in the fact that 13.8% of families with children aged less than 15 years had jobless parent(s) compared with 18.7% for the State as a whole. As in other rural areas, the proportion of the workforce who were unskilled and semi-skilled (28.5%) was higher than the State average. However, the tight labour market situation in the South East is reflected in the fact that in 2001, only 4.4% of workers were unemployed, compared with 6.8% for the State as a whole – the lowest level of unemployment for any health region. This may be a factor in the high level of female labour force participation (68.9%, compared with 66.3% in South Australia generally). Like other rural areas, there was a lower than average level of educational participation (78.8%, compared with 80.1%). However, there was a slightly above average level of educational performance.

As is the case with most other non-metropolitan areas, there was a lower level of multiculturalism in the South East than in South Australia as a whole. Only 1.1% of the population was Indigenous compared with 1.6% in the State and 3.1% in the non-metropolitan sector. Only 3.3% of the resident population were from a non-English speaking background – one third of the State average. There was a decline in the NESB population in the South East from 2,502 in 1991, to 2,014 in 2001. Only 0.3% of the South East population had a poor proficiency in English.

There was a stronger representation of SAHT housing in the South East (7.2%) than most non-metropolitan areas. It is a region that is experiencing a significant housing shortage, and this may be a factor in the labour shortage in the region. As in other rural areas, the proportion of households without access to a motor vehicle (6.6%) was lower than the State average (9.9%). Some 15.5% of households used the Internet at home.

The South East's population is substantially influenced by migration. In the 1996 to 2001 period, there was a concentration of net losses in the school leaving and early workforce ages. They were more substantial for interstate migration than for migration within South Australia.

The South East faces a number of challenges over the next two decades:

- The economy of the region has been relatively buoyant over a long period, although the heavy dependence on primary industry exposes the economy to vicissitudes of the market for those goods. However, the fishery, forestry, grazing, viticulture-intensive agriculture and tourism activity have created sufficient job opportunities to create a quite tight job market in the region.

Indeed, a shortage of workers may be a problem in the region in the future.

- Mount Gambier is the largest regional centre in the State but it is not growing very rapidly and the direction which it takes in the future will depend on its ability to expand the diversity of its economic base beyond its current role as a service centre.
- Development in the South East is not as constrained by availability of water as is the case in much of the rest of South Australia. Availability of a plentiful supply of water could be of major advantage to the region in its development over the next two decades.

With respect to health challenges which the region faces over the next two decades, the significant growth in the aged population will continue and the need to provide aged care services to a dispersed low density rural population, while not as extreme in the South East as elsewhere in the State, presents challenges. This especially applies to the health services' sector. While the South East does not have as substantial an ageing effect as other parts of the State, it will be an issue of significance in the region that needs to be planned for. The area is not as disadvantaged as some other parts of non-metropolitan South Australia, but there are pockets of rural poverty that should be identified and the health needs assessed. Like all areas outside the metropolitan area, there are considerable difficulties in attracting appropriate health staff to the region, but the particular attractive qualities of the South East may make it less difficult to attract health professionals than some other parts of the non-metropolitan area.

The Wakefield Region

In 2004, the Wakefield region had an estimated population of 100,983 and covered around 24,000 km^2. The region overlaps the Adelaide metropolitan area since it includes the Adelaide Statistical Division SLA of Gawler, which is an integral part of the Adelaide metropolitan complex. It is a quite varied area as it also includes the tourism – wine growing – dormitory area of the Barossa Valley and the Outer Adelaide Statistical Division SLAs of Light and Mallala, which are part of the peri-urban, commuting belt associated with the Adelaide Metropolitan area.

Further north are the dry farming and viticulture areas of the Clare and Gilbert Valleys SLA and the dry farming areas of Goyder and Wakefield. It also includes Yorke Peninsula with its important retirement – resort area of the Copper Coast. Hence, it is a quite diverse area containing areas with varying demographic characteristics. Over the 1996 to 2001 period, the Wakefield region's population grew by 0.82% per annum compared with 0.50% in the State as a whole. The areas in the Outer Adelaide Statistical Division and Gawler represent the most rapidly growing part of the region, with other parts of the region experiencing slow growth or stability.

The linkages between this area and the metropolitan regions need to be stressed. Table 3.8 shows the significant commuter flow from the Barossa Valley into Metropolitan Adelaide (including Gawler) area each day. In fact, there has been a substantial migration from Adelaide to the Barossa Valley of persons seeking to live in the heritage, ecologically attractive area but maintain their job in Metropolitan Adelaide. Indeed, the increase in housing prices in that region may mean that, if there is an expansion of job opportunities in the wine industry and tourism over the next two decades, many of the new workers required will need to live in the northern part of Adelaide and commute daily to the Barossa Valley.

Table 3.8: Outer Adelaide Statistical Division: Extent of commuting to Adelaide Statistical Division, 2001

SLA	Number of Employed	Commuters to ASD	
		Number	%
Adelaide Hills (DC) - North	3,118	1,747	56.0
Adelaide Hills (DC) Bal	4,051	1,713	42.3
Alexandrina (DC) - Coastal	3,191	544	17.0
Alexandrina (DC) - Strathalbyn	3,651	798	21.9
Barossa (DC) - Angaston	3,553	238	6.7
Barossa (DC) - Barossa	3,243	1,212	37.4
Barossa (DC) - Tanunda	2,113	176	8.3
Kangaroo Island (DC)	1,826	13	0.7
Light (DC)	4,548	1,487	32.7
Mallala (DC)	3,039	1,872	61.6
Mount Barker (DC) - Central	6,592	2,689	40.8
Mount Barker (DC) Bal	3,778	1,633	43.2
Victor Harbor (DC)	3,376	339	10.0
Yankalilla (DC)	1,442	274	19.0

Source: ABS 2001 Census

The age structure of the Wakefield region is depicted in Figure 4.3 (Chapter 4, page 57). The region has a significantly younger age structure than the State as a whole. The 5 to 14 year age group is not only over-represented in the area but also is growing significantly faster than the growth in this age group in all of South Australia. It is apparent too that people in their 40s are also over-represented. Those are the groups who have moved into Gawler, the Barossa Valley and the near north SLAs of Light and Mallala. It will be noted that people in their 20s and early 30s are under-represented in the area, suggesting people in the early working ages have left those areas and moved to the city. Older age groups are over-represented in the area and are growing at a more rapid rate than for the State as a whole. This growth of the aged population is especially concentrated on Yorke Peninsula and in the northern parts of this region. There is retirement migration into parts of this area, similar to, but on a smaller scale than that experienced by the South Coast area and considered earlier. For the period 1996 to 2001, the fastest growth was in all of the older age groups and in the 15 to 19 year age group.

The number of households in the region increased by 17.8% between 1991 and 2001 compared with the population increasing by 9.7%. The number of families in Wakefield increased by 12.4% between 1991 and 2001 – double the increase for the State as a whole (6.1%). This reflects the movement of established families into Gawler, the Barossa Valley and the Outer Adelaide Statistical Division SLAs of Light and Mallala. The number of single parent households increased by 59.5% over the 1991 to 2001 period, dramatically faster than for the State as a whole (30.8%) reflecting the increasing numbers of single parent families in Gawler and the lower north of the State. This partly reflects the availability of cheaper housing in some of these areas. The proportion of families that were single parents (8.7%), however, was still lower than for the State as a whole (11%). The proportion of families with young children where the parents are unemployed was 16.4%, below the State average of 18.7%. The proportion of families that were in the low income category (27.3%) was higher than for the State as a whole (23.8%), partly reflecting the older population in the Copper Coast and Yorke Peninsula SLAs.

As is the case with other non-metropolitan regions, the proportion of the workforce who are unskilled or semi-skilled (22.2%) is above the State average of 18.9%. However, its unemployment rate of 5.6% in 2001 is below the State average of 6.8%. This may reflect the buoyant employment conditions in areas like the Barossa Valley. Female labour force participation (65.5%) is close to the average for South Australia as a whole (66.3%).

The inclusion of part of the metropolitan area (Gawler) and the commuter populations of the Barossa, Light and Mallala in the region leads to the average level of educational participation being above the State average (81.1% compared with 80.1%).

Like other non-metropolitan parts of South Australia, the area has a low level of multicultural diversity. The Indigenous population comprises only 1.1% of the region's residents compared with 1.6% of all South Australians. Only 3.1% of residents are NESB origin migrants who have been in Australia more than five years compared with 8.5% of South Australians. Similarly, 1.1% are NESB residents who arrived in Australia in the last four years compared with 1.6% of the total State population. The number of NESB origin residents in the Wakefield region declined from 3,296 to 2,921 between 1996 and 2001. The proportion of residents in the region who had a poor proficiency in English was only 0.2% compared with 1.8% in South Australia as a whole.

The proportion of dwellings in Wakefield owned by the SAHT was less than half the State average and the proportion of dwellings without access to a motor vehicle (6.1%) was below that for South Australia – 9.9%.

Like that of the Hills Mallee Southern region, the population of the Wakefield Health Region is growing at a rate faster than that of the State as a whole. Moreover, this pattern will certainly continue. This is due to several factors:

- the impact of metropolitan regions on its peri-urban area, and the dormitory area of Gawler;
- the buoyant economy based on the wine industry, tourism and heritage dormitory development in the Barossa;
- the retirement – resort led growth in Yorke Peninsula – Copper Coast.

Wakefield is also a region of considerable diversity so that the health issues faced by residents will vary considerably within the region. Some of the main challenges faced by the region are as follows:

- The continued population growth will undoubtedly create pressures in the Barossa Valley; for example, there is little land left for housing development without compromising the heritage and environmental amenity, which is the basis of its tourism and wine industries. Moreover, the influx of high income commuters will price out lower income workers, which the growing industry of the region will require. Hence, it is likely that, while the Barossa will grow in significance as a dormitory for metropolitan workers, workers employed in the Barossa will necessarily have to live in northern

Adelaide or in the country towns in Light and other nearby SLAs.

- The growth of the older population, especially in the Yorke Peninsula and Copper Coast areas, will raise the issues already discussed for several rural communities in non-metropolitan South Australia.
- There will be pressures on Gawler to increase the amount of housing development.
- The region contains some of the State's richest and most productive dry farming areas. Nevertheless, such areas face pressure from changing markets for products, increased costs and pressure to intensify production.
- In the dry farming areas, many of the country towns have experienced a loss of services due to improved accessibility which allows local residents to shop in Gawler or Adelaide rather than locally (Hugo & Smailes 2001). Accordingly, several have reduced populations, particularly of young people. In such places, the communities have often lost groups such as school teachers, police, stock and station agents, bank officers, and so on, who not only provided services but also contributed to the social and economic life of the community. On the other hand, the availability of cheap housing has seen an influx of groups such as single parent families, and those unemployed who are often not able to play the same roles in the community.

There are a number of health service challenges faced by the Wakefield region over the next decade:

- Within Wakefield, there are seven incorporated health services managing a total of four community health services and twelve hospitals. There will be further pressures on these services, especially in the northern part of the region where population has been stable or marginally declining. Cost demands on services, and pressure to reduce the number of services to achieve economies of scale, will continue. However, the services are crucial not only for the provision of health services to residents, but also as an essential element in community wellbeing.
- The changing population of the region is presenting challenges to the health service system. The influx of urban people, the increasing population reliant on transfers such as single parent families and unemployed persons will be influential. Similarly, the growth of the older population, especially on Yorke Peninsula, will be significant.
- The differing nature of the area means that the types of health services required will vary considerably from metropolitan areas to purely rural communities, regional centres and resort – retirement communities.
- Closeness to Adelaide will be a significant element as transport continues to improve and the ability of people in the area to access resources within the metropolitan area increases.

The Mid North region

The Mid North region lies immediately north of the Wakefield region and comprised a population of 30,695 in 2004, living in an area of 54,000 km^2. Geographically, it lies within the Lower Flinders Ranges and encompasses the SLAs of Barunga West, Mount Remarkable, Northern Areas, Orroroo-Carrieton, Peterborough and Port Pirie. This is one of the diminishing areas in the State with the population declining by 0.68% per annum between the 1996 and 2001 censuses and by 0.71% between 2001 and 2004. The region includes the smelting, regional and port centre of Port Pirie, the mixed farming region of the Mid and Upper North and some sparsely settled pastoral areas to the east. It has a network of country towns, which are stable in population size or declining, as the impact of increased capital-labour substitution in farming, increasing travel to shop in large centres and the withdrawal of government funded services is felt.

The age and sex structure of the Mid North is depicted in Figure 4.3 (Chapter 4, page 57) and it differs dramatically from the State as a whole. There are two age groups over-represented in the area – the under 15 and over 50 year age groups. This reflects the substantial out-migration of young people from the area leaving behind older people. The relatively high fertility of the area is reflected in the strong representation of children – 6.8% of the population are aged 0 to 4 compared with 6.1% in the State as a whole, and 14.9% aged 5 to 14 compared with 13.5% in all South Australia. Nevertheless, the numbers in these age groups declined from 7,553 in 1991 to 6,623 in 2001.

The out-migration of school leavers is reflected in the fact that only 10.3% of the region's population are aged 15 to 24 compared with 13.1% in South Australia in total. Moreover, their numbers declined substantially from 4,152 in 1991 to 3,159 in 2001. The impact of this decline on the community life in the region is considerable since this age group is crucial, especially for sports teams – the demise of which has become commonplace in the Mid North. On the other hand, the 65 years and older population is over-represented, making up 16.9% of the Mid North population compared with 14.7% of that of South Australia. This ageing population, however, is very much a function of the out-movement of young people rather than an in-

movement of older people. Their numbers increased from 4,466 in 1991 to 5,176 in 2001.

Despite the population decline in parts of the region, the number of households increased by 2.8% between 1991 and 2001. The number of family households declined from 8,751 to 8,354. However, the number of single parent families increased from 709 to 842 and their share of all families grew from 8.1 to 10.1%. Moreover, one third of all families in the region were in the low income category, compared with 23.8% of the State as a whole. Hence, the Mid North has a larger proportion of poor families than any other health region in the State. A quarter of families with dependent age children have parent(s) who are unemployed – also the highest proportion of the health regions. The region also has an unemployment rate (10.2%) above the State average of 6.8%. However, the proportion of its workers who are unskilled and semi-skilled is only a little above the State average (21.6%) due to the significance of Port Pirie. Female workforce participation rates in the region (58.4%) are the lowest of all health regions, reflecting the paucity of job opportunities for women in the Mid North. The presence of Port Pirie also explains the educational participation rate being around the State average.

There is more ethnic diversity in the Mid North than in some South Australian non-metropolitan areas. Some 1.8% of the residents are Indigenous compared with 1.6% for the State as a whole. However, the proportion that is of NESB origin and has been in Australia for more than 5 years was only 2.8% and more recent arrivals, only 0.1%. The number of NESB residents in the area declined from 1,208 in 1991 to 907 in 2001. The proportion of persons with a poor proficiency in English was only 0.3%.

The large number of SAHT properties in Port Pirie led to them making up 8.3% of all households in the region compared with 7.7% in the State as a whole. The proportion of households that do not have access to a car (9.6%) is close to the State average but high for a non-metropolitan area. Only 14.7% of households used the Internet at home compared with 18.3% in the State as a whole.

The Mid North faces a number of significant challenges over the next decade or so. The future of the key city of Port Pirie (a population of 14,090 in 2001) is uncertain. It is an important regional centre and port for the produce of its hinterland and those functions are assured. Its smelting operations have been a vital part of the city's economic base but the employment they provide has reduced over the years. Like all Australian centres dependent upon manufacturing, Port Pirie has suffered due to restructuring of the Australian economy, which has reduced the significance of manufacturing. Whether Port Pirie will grow significantly over the next two decades or remain around the present size will be dependent on its ability to attract new employment generating activity. Furthermore, historic lead contamination of soil surrounding the smelting site and current airborne emissions have given rise to significant community concerns, centred on the blood lead levels of children in nearby residential areas (Manins et al. 2001).

Almost all the rural communities of the region have experienced losses of services and falling or static populations for the reasons outlined earlier. This presents difficulties because it not only erodes the basis for supporting a range of services, but it leads to a diminution of community activity. Whether there can be an arresting of this trend or even a reversal will depend on the ability of these communities to diversify their economies. If this does not occur, the outlook is for further population decline.

This region contains a higher proportion of poor families than any of the health regions. The incidence of poverty in this area is considerable and is an important issue. To some extent, the low incomes reflect the older population and an over-representation of retirees, but are also indicative of significant poverty in the Mid North.

There are considerable health provision challenges that face the Mid North region over the next two decades. These include the substantial difficulty of maintaining provision of services to a relatively dispersed population in a situation where the population is static or declining. The point should be made, however, that although the numbers may be static, the substantial ageing of the population and the high incidence of poverty in the region means that the level of need for health services may be increasing, even though the population is not growing.

The substantial outflow of young people is having a substantial effect on social capital in the area and on the ability of small communities to maintain provision of voluntary and semi-voluntary support services in a context where the demand for them may be growing. This problem can also have a negative impact on the wellbeing of individuals in the community and has implications for demand for health services. There is also a significant Indigenous population in the region with specific health needs. The regional centre of Port Pirie also has a range of specific health issues that need to be considered in planning the provision of services in the region.

The Riverland region

The Riverland region has a total area of 24,000 km^2 and lies within the Central Eastern section of South Australia adjacent to the border with Victoria. It includes the SLAs of Berri and Barmera, Loxton, Waikerie and Renmark-Paringa. The majority of the population lives in the intensively irrigated areas along the River Murray, although some areas of the Mallee to the south of the river are included. In 2004, its population was 33,263. It had grown at a miniscule 0.04% per annum between 1996 and 2001 compared with 0.5% for the State as a whole. Between 2001 and 2004, it declined by 0.28% compared with a State population gain of 0.51% per annum.

The age and sex structure of the Riverland is depicted in Figure 4.3 (Chapter 4, page 57). As is typical of non-metropolitan age structures, it is over-represented in the dependent child and 40 to 74 year age categories. It is noticeable that it is not over-represented in the 75 years and over age groups, reflecting the strong movement of the very old to Adelaide seeking specialised aged services. However, the region has above average fertility compared with the State, so that the 0 to 4 year age group makes up 6.7% of the population (compared with 6.1% in South Australia as a whole) and the 5 to 14 year age group, 15% (13.5% in South Australia). However, like other non-metropolitan areas, the Riverland experienced an outflow of its youth and this has contributed to an ageing of its population. The 15 to 24 year age population declined from 4,407 in 1991 to 3,828 in 2001. On the other hand, the over 65 year old age group increased from 3,848 to 4,711. Thus, population growth has been concentrated in the older ages and the momentum of ageing is apparent through the large numbers poised to enter the older age groups.

Despite the limited population growth, the number of households increased by 11.4% between 1991 and 2001. For many settlers, it is important to consider households rather than population. The number of families in the region increased by 3.7% between 1991 and 2001. The number of single parent families in the Riverland increased even faster, at 12%. This is reflected in a higher proportion of families being classified as low income (26.1%) compared with the State as a whole (23.8%). Some 17.8% of families with dependent children had at least one parent who was unemployed but the overall level of unemployment (5.9%) is below the State average. This reflects the buoyancy of many of the in-migration area industries in the late 1990s.

However, the Riverland has the lowest skilled workforce of any of the health regions with 30.5% of workers being unskilled and semi-skilled, compared with 18.9% in the State as a whole. Female labour force participation rates are the highest of any region (69.1%) reflecting the availability of a wider range of jobs for women in the area than is the case in dry farming regions. Education participation levels are slightly below average.

The Riverland is more multicultural than most rural areas in South Australia. Some 2.3% of the population is of Indigenous origin compared with 1.6% in the State as a whole. Some 5.9% of its population were of NESB origin and had lived in Australia for more than 5 years. While this is lower than the State average (8.8%), it is higher than the non-metropolitan average (3.5%). This reflects the substantial settlement of Southern Europeans in the region in the post-war years (Hugo & Menzies 1980). This is one of the few areas in which the number of NESB people resident in Australia less than five years actually increased slightly between 1991 and 2001 (from 230 to 238). The region continues to be a destination for some NESB groups because of the work available in irrigated agriculture. In recent years, refugees and asylum seekers have been important in the harvesting workforce in the region. There is a considerable demand for workers in the region during the harvest times (Hugo 2001). Some 1.6% of the population of the region have a poor proficiency in English.

The proportion of SAHT dwellings (6.6%) is a little below the State average (7.7%), as is the proportion of households not having access to a motor vehicle (7.1% compared with 9.9%). Some 15.5% of households have access to the Internet at home.

The Riverland is one of the most distinctive in the State, with its strong focus on irrigated agriculture and associated processing industries and its higher degree of multiculturalism than other non-metropolitan areas. Its economic fortunes are highly dependent on the demand for the fruit, grapes, and vegetables that it produces. However, there is a diverse range of crops grown in the region and on individual properties, so that the risk is spread. It has benefited from the boom in the wine industry over the last decade or so and this has increased the prosperity of the region. The region has a number of urban centres along the River Murray, none of which is dominant, and this perhaps has led to some higher order services not being provided in the Riverland than would have been the case if there were a single large regional centre. Nevertheless, there is a greater degree of concentration of population along the River Murray than is the case in other rural areas and this facilitates accessibility to services. The challenges to health service provision in the region are hence

not as severe as in other areas of much sparser population distribution and declining populations.

The Eyre region

The Eyre region has a degree of regional distinctiveness comprising the Eyre Peninsula, which has long had a strong identity and separateness emanating from its isolation from Adelaide and the rest of the State. Indeed, earlier generations of people in Eyre Peninsula often referred to Adelaide as the "mainland". The region has a population of 31,799 spread over 72,354 km^2. It is the second most sparsely settled health region with a population density of 0.4 persons per km^2. The region comprises the SLAs of Cleve, Elliston, Franklin Harbor, Kimba, Le Hunte, Lower Eyre Peninsular, Murat Bay, Port Lincoln, Streaky Bay and Tumby Bay. Its urban hierarchy is dominated by the major regional centre of Port Lincoln (population of 13,899 in 2001) and smaller centres of Ceduna, Tumby Bay and Streaky Bay.

There are five Aboriginal communities in the Eyre region – Ceduna, Kooniba, Oak Valley-Maralinga, Port Lincoln and Yalata. The region has experienced difficulties in recent times with a succession of drought years in the early 1990s, and the devastating 2005 bushfires. Nevertheless, its population has grown at about the rate of the State as a whole in recent years by 0.6% per annum between 1996 and 2001, and 0.53% per annum between 2001 and 2004.

The age and sex structure of the Eyre population is depicted in Figure 4.3 (Chapter 4, page 57) and shows less difference to the State age structure than is the case for other non-metropolitan areas. The dominance of the dependent child age group typical of non-metropolitan areas however is evident. The 0 to 4 year age group accounts for 7.3% of Eyre's population compared with 6.1% for the State, while for the 5 to 14 year age group, the proportions are 16.0 and 13.5%. Nevertheless, there was a decline in the number of dependent children in the Region from 8,035 in 1991 to 7,674 in 2001. Like other non-metropolitan areas, Eyre experiences a net out-migration of school leavers, and 15 to 24 year olds make up only 11.4% of the population compared with 13.1% of the State population. Also the numbers of these young people declined from 4,118 in 1991 to 3,770 in 2001.

As elsewhere, there has been an ageing of Eyre's population with the numbers aged 65 years and over increasing from 3,595 in 1991 to 4,480 in 2001 and their proportion of the total population increasing from 11.3 to 13.6% of the population. Nevertheless, the ageing is still below the State average. The momentum of ageing in Eyre, however, is apparent with the numbers aged below 40 years declining and those above it increasing between 1996 and 2001.

The number of households in Eyre increased at a faster rate than the population between 1991 and 2001, 11.7% compared with 2.6%. Similarly, there was an increase in the number of family households from 8,310 to 8,660. The numbers of single parent families increased from 8.1 to 9.3%. The proportion of families which are in the low income category was 27.8% in 2001 - above the State average of 23.8% but the proportion of families with dependent age children in which the parent(s) are unemployed was below the State average - 14.7% compared with 18.7%.

The Eyre region had one of the highest unemployment levels of any health region - 10.8% in 2001, compared with 6.8% in the State as a whole. As with other non-metropolitan areas, the proportion of the workforce that was unskilled and semi-skilled was higher than for South Australia as a whole - 20.4% compared with 18.9%. However, female labour force participation rates were higher (67.5%) than in the State as a whole, perhaps reflecting the number of job opportunities for women in the fishing, tourist and regional centre of Port Lincoln. Educational participation (78.8%) is below the State average, however, partly reflecting the selective out-migration of many of those wishing to proceed to higher levels of education.

The Eyre region is more diverse ethnically than many non-metropolitan areas in South Australia. It has the second largest representation of Indigenous people who make up 5.6% of the population of the region, compared with 1.6% of the population of South Australia. The number of Indigenous people increased from 1,493 in 1991 to 1,851 in 2001. NESB groups have been significant in the development of the Eyre region. In particular, the fishing industries in Port Lincoln and all along the West Coast have had a significant involvement of European migrant groups. However, in 2001 only 2.8% of the population were of this background and their numbers declined from 1,111 in 1991 to 883 in 2001. Only 0.2% of the region's population had a poor proficiency in English. The SAHT accounts for 6.7% of the housing in the region, and 7.1% of the households have no access to a motor vehicle. Some 18.8% of households have access to the Internet.

As indicated earlier, much of Eyre Peninsula suffered significant drought in the 1980s and 1990s. On the other hand, there has been a great deal of prosperity associated with the expansion of fisheries and in recent years, fish farms. The expanding Asian market for high quality food has seen the tuna and other fisheries undergo substantial expansion. Much of the interior of the Eyre Peninsula is dependent on wheat farming and

wheat-sheep farming. The northern margins of the region have been particularly prone to drought. The bushfires of 2005 have also had a devastating impact. Tourism is a significant industry but the region's relative isolation has limited its development.

The region faces a number of significant challenges in providing health services:

- The substantial Indigenous population have particular health issues and are very socioeconomically disadvantaged.
- Issues of providing health services to an isolated and sparsely settled area are a particular challenge. This is exacerbated by the increasing concentration in the growing regional centre of Port Lincoln, and the declining population in much of the interior of the peninsula.
- Ageing is also a factor, with the added problem of isolation and lack of accessibility of those in rural areas to services.

The Northern and Far Western Region

The Northern and Far Western health region is by far the largest in area, covering 756,742 km^2 and containing around 50,000 residents. It is highly distinctive with much of the population living in the two Spencer Gulf cities of Whyalla and Port Augusta, but others concentrated in mining centres, Indigenous communities and tourist developments. It contains the sparsely settled outback parts of the State and has the most substantial concentration of Indigenous people in the State. It has experienced an overall population decline of 0.78% per annum between 1996 and 2001 and of 1.23% per annum between 2001 and 2004. Its population fell from 53,410 in 1996 to 49,544 in 2004.

The majority of the area included in the region is unincorporated, but it also contains the SLAs of Coober Pedy, Flinders Ranges, Port Augusta, Roxby Downs and Whyalla. Whyalla grew rapidly in the early post-war decades and became South Australia's second largest city. However, there has been a continued decline over recent decades as its iron and steel industry shed workers. It has now lost its position as the State's second largest city to Mount Gambier. Its peak population was 33,409 in 1976 but by 2004, it had declined to 21,547. The mining centre of Roxby Downs grew rapidly in the 1990s but its population has stabilised. Port Augusta's role as a railway centre has declined but its tourist industry has expanded.

The age and sex profile of the region is shown in Figure 4.3 (Chapter 4, page 57). The proportion of males is more marked than any other region reflecting the "frontier" nature of part of the region. It is apparent too, that the region's age structure is substantially younger than that of the State's population as a whole. In fact, it has larger proportions of its population aged 0 to 4 years (7.5%) and 5 to 14 years (16%) than any of the other health regions. This is partly a function of relatively high fertility in the region, but also due to the fact that many older people leave the area to be closer to aged care services.

The Northern and Far Western region has a higher proportion of its population in the 15 to 24 year age group than any other non-metropolitan region, due partly to the nature of job opportunities in the region and also to the substantial Indigenous population. Nevertheless, the number of residents in the area aged less than 25 years declined from 22,829 in 1991 to 18,192 in 2001. The numbers aged 65 years and over increased from 3,941 to 5,037, but still only accounted for 10.1% of the total population in 2001.

There has been a decline in the number of households between 1991 and 2001 of 2.8%. The number of family households declined from 14,144 to 12,448 over the same period. On the other hand, the number of single parent families increased from 1,498 to 1,758. In fact, the region had the largest proportion of its families made up of single parent families of any of the health regions (14.1%). The number of such families is especially pronounced in the Indigenous population. The proportion of families that are in the low income category was above the State's average (28% compared with 23.8%). Moreover, in 24% of all families with children less than 15 years of age, the parent(s) were unemployed.

The relatively low representation of aged persons in the area means that the majority of low income families are young. Hence, the area is one with significant rural poverty and it is known that this is especially concentrated among the Indigenous population. The proportion of workers that were unskilled and semi-skilled was 25.7% - well above the State average of 18.9%. However, unemployment levels were by far the highest of any region - 17.3%, almost three times the State average. Again, this is largely a reflection of the substantial Indigenous population in the region. Female labour force participation is one of the lowest levels in the State - 58.9% compared with a State average of 66.3%. Educational participation is the lowest of any health region - 67.3% compared with 80.1% in the State as a whole.

The Northern and Far Western region is the most multiculturally diverse of South Australia's non-metropolitan health regions with 12.0% of the region's population being of Indigenous origin. The number of Indigenous residents increased from 4,971 in 1991 to 5,988 in 2001. Almost a

quarter of the State's Indigenous population live in this region. However, there has been a dramatic decline in the number of NESB origin residents from 4,469 in 1991 to 2,559 in 2001. Their share of the region's population fell from 7.7% to 5.1%. There have been significant concentrations of immigrants in Whyalla, and to a lesser extent, in Port Augusta, but they also have been important in mining communities like Coober Pedy. However, in 2001, only 0.6% of the population in the region had a poor proficiency in English.

The large SAHT presence in Whyalla is reflected in some 17.8% of all dwellings in the region being public rental housing. The region had the largest percentage of households, which did not have access to a motor vehicle - 13.1%. It also had the lowest percentage of households accessing the Internet at home (14.5%).

This region faces a range of challenges over the next decade. Its economy has been based in the past on a number of sectors, which have experienced difficulty in recent decades. The manufacturing industry, especially that located in regional centres, has undergone massive change due to movement of activity offshore and increased substitution of capital for labour. The outlook for Whyalla remains clouded while it is highly dependent on manufacturing. Yet it has the advantage of substantial infrastructure, coastal location, and so on. Its future expansion would seem to depend, however, on diversification of its economy. Port Augusta suffered from withdrawal of some of its functions as a key railway centre but its role as a gateway to outback tourism has potential. Again diversification of the economic base will be crucial.

In Australia's (and South Australia's) arid zone, there has been a history of mining centres growing rapidly, and then declining as ore bodies are worked out or world markets shift. This zone has gained and lost population quickly as a result of this factor and will continue to do so.

Tourism has only influenced the region to a limited degree compared with comparable ecological zones in the United States. The trajectory of the next decade in the region will be influenced by tourism development.

The Indigenous community in the region is significant both numerically and proportionally. They will remain a group of major significance in planning in the region.

In many ways, the health challenges posed by this region are the most distinctive of any in South Australia. The first must relate to the Indigenous population. It has been shown earlier that they remain the most disadvantaged group in the community and have substantial and distinctive health service needs. In this region, issues of remoteness and separate Indigenous communities exacerbate these needs. Remoteness presents challenges in providing services in such a way that can be accessed by low density distribution populations in the shortest time. The age structure of the population, its high mobility and distinctive disease risk factors are all of importance.

Whyalla presents a separate range of issues. Ageing is of significance in the city as are continuing high levels of unemployment. The region will in the future be more and more influenced by temporary populations, those working in the mining and tourism industry, and larger numbers of tourists including recent retirees travelling around Australia.

Regional health inequalities

The health regions face a range of challenges in providing individually focused health services, and population-based health initiatives for their communities. This is not only as a result of their differing demography and geography, but also in response to the existing health of their communities, and their associated health risk and protective factors, including levels of socioeconomic disadvantage, and the available health service resources.

A selection of indicators of regional health status and health service delivery is presented in Table 3.9.

Table 3.9: Selected health status and service delivery indicators, SA Health Regions

Indicator	%/SR/ Rate[1]	Health region[2]								
		CNAHS	SAHS	HMS	W	SE	NFW	E	MN	R
Health status:										
Perinatal and pregnancy:										
- Fully immunised at 12 months	%	94.6	95.0	94.1	95.6	94.7	93.4	94.5	96.3	92.8
- Low birthweight babies	%	7.0	6.4	6.3	7.0	6.4	7.8	6.8	7.0	7.3
- Overweight 4 year old boys	%	11.4	11.1	11.2	14.1	14.6	13.0	15.7	14.2	14.1
- Obese 4 year old boys	%	4.7	4.1	3.4	4.1	4.5	5.1	6.4	5.0	5.2
- Smoking during pregnancy	SR	98**	83**	105	109**	115**	124**	125**	108	135**
Premature and avoidable mortality:										
- Infant mortality rate	Rate	4.5	4.5	4.2	4.8	7.1	6.4	3.8	3.3	5.2
- Males 15-64 yrs: all causes	SR	98*	88**	96	106	97	145**	113	115	113
- Females 15-64 yrs: all causes	SR	99	89**	99	104	98	131**	121	112	135**
- Avoidable mortality	SR	99	86**	100	102	108	142**	108	124**	122
Cancer incidence:										
- All cancers	SR	100	103*	98	98	97	94*	99	100	102
- Prostate cancer	SR	100	103	105	109	101	66*	100	69	99
- Breast cancer (females)	SR	99	109	101	96	84*	81*	90	98	116
- Lung cancer	SR	100	100	86	101	94	139**	84	99	114
Services:										
- Community mental health	SR	98	94**	87**	128**	30**	137**	149**	141**	97
- Child & Adolescent Mental Health	SR	78	93**	137**	101	133**	175**	105	165**	219**
- Dept for Families and Communities	SR	94**	73**	89**	99	133**	175**	105	165**	219**
- Breast screening participation	SR	96	104**	104**	105**	82**	207**	169**	155**	153**
- Cervical screening participation	SR	99	103**	101	100	103**	83**	107**	92**	107**
- GP services to males	SR	109	97**	93**	91**	71**	89**	84**	87*	77**
- GP services to females	SR	106	99**	98**	92**	73**	94**	88**	85**	75**
- Hospital admissions: total	SR	97	100	95**	103**	103**	121**	102*	121**	108**
- Hospital admissions: public acute	SR	89	86**	108**	121**	131**	170**	141**	164**	142**
- Hospital booking lists (6 mths & over)	SR	115	127**	55	74	24	55	44	42	26
- Population per GP	Rate	1,039	1,234	1,149	1,162	1,524	1,303	1,144	1,207	1,290

[1] **SR: Standardised ratio; Rate: Infant mortality rate is infant deaths per 1,000 live births (see page 284) and Population per GP is the number of people per full-time weighted equivalent GP (see page 358)**

[2] **CNAHS: Central Northern Adelaide Health Service; SAHS: Southern Adelaide Health Service; HMS: Hills Mallee Southern; W: Wakefield; SE: South East; NFW: Northern and Far Western; E: Eyre; MN: Mid North; R: Riverland**

4 Demography and socioeconomic status

Introduction

Social inequality is the key to inequality in health. This is the case for all South Australians – for the Indigenous and non-Indigenous populations; for men and women; and for children and young people.

In this chapter, variations in some important indicators of social inequality are shown by geography, using maps of metropolitan regions and country South Australia; and by relative levels of accessibility and remoteness, using graphs of five remoteness classes. Variations by socioeconomic status are shown graphically in Chapter 9 by comparing the relative position of the most well-off and the most disadvantaged population groups, for each of the indicators mapped in this chapter. A comparison is also made of the change over time in the relative positions of these population groups.

Data issues

Data quality of Indigenous population counts

As noted in Chapter 2, *Methods*, the data describing the health status and utilisation of health services by Aboriginal people and Torres Strait Islanders are generally of poor quality. It has become clear with the release of results from the 1996 and 2001 censuses that population data are also less than ideal.

Table 4.1 shows the population of Indigenous South Australians over the fifteen-year period from 1986 to 2001. The number of people who identified themselves as Aboriginal and/or Torres Strait Islander increased by 9,134 people, from 14,291 at the 1986 Census, to 23,425 at the 2001 Census (an increase of 63.6%). Of this total increase of 9,134, over half (57.2%) was recorded in Metropolitan Adelaide, resulting in a striking increase of 89.6% over the fifteen years. The increase in the non-metropolitan areas was around half that but, at 46.2%, was still substantial.

Such increases are not explained by the relatively higher fertility rates among Indigenous people, nor are they explained by a decline in mortality of Indigenous Australians. Rather, it appears that Indigenous Australians have been increasingly prepared to identify themselves as such in the Population Censuses. The question remains as to what proportion of the actual population of Indigenous Australians these current levels of identification represent.

Table 4.1: Indigenous population, 1986 to 2001

Period	Metropolitan Adelaide (incl. Gawler)	Country South Australia	South Australia
Numbers			
1986	5,825	8,466	14,291
1991	6,948	9,284	16,232
1996	9,387	11,057	20,444
2001	11,047	12,378	23,425
Per cent change			
1986 to 1991: 5 years	19.3	9.7	13.6
1991 to 1996: 5 years	35.1	19.1	25.9
1996 to 2001: 5 years	17.7	11.9	14.8
1986 to 2001: 15 years	89.6	46.2	63.9

Source: Calculated from unpublished data supplied by ABS special data services

Socioeconomic status

The Index of Relative Socio-Economic Disadvantage (IRSD), one of four Socio-Economic Indexes For Areas produced by the Australian Bureau of Statistics at the 2001 Population Census, is the summary measure of socioeconomic status used in this atlas. Produced using principal component analysis, the IRSD summarises information available from variables related to education, occupation, income, family structure, Indigenous status, ethnicity (poor proficiency in use of the English language) and housing. The variables are expressed as percentages of the relevant population. The IRSD was produced at the Census Collection District (CD) level and was then calculated for SLAs by weighting the scores for the CDs by their population.

The IRSD is calculated to show the relativity of areas to the Australian average for the particular set of variables which comprise the index. To enable easy recognition of high and low scores, the CD index scores have been standardised to have a mean of 1000 and a standard deviation of 100 across all CDs in Australia. In practice, this means

that around 95% of index scores are between 800 and 1,200 (ABS 2003). This has not been done for indexes aggregated to a larger geography. Scores below 1000 indicate areas with relatively disadvantaged populations, and scores above 1000 indicate areas with relatively advantaged populations.

In this report, the scores have been re-weighted so that the average score for South Australia is 1000.

Data definitions

The indicators calculated from the 2001 Census of Population and Housing data mapped in this chapter are shown in Table 4.2; those from other sources are shown in Table 4.3.

Table 4.2: Details of demographic and socioeconomic indicators calculated from 2001 Census variables

Topic and variable name	Numerator	Denominator
Demography		
children aged 0 to 4 years	all children aged from 0 to 4 years	total population
children aged 5 to 14 years	all children aged from 5 to 14 years	total population
young people aged 15 to 24 years	all young people aged from 15 to 24 years	total population
people aged 65 years and over	all people aged 65 years and over	total population
Families		
single parent families	single parent families with dependent children under 15 and students 15 to 24 years	all families with dependent children
low income families[1]	families with an income less than $26,000 p.a. [$500 per week]	all families with an income
high income families[2]	families with an income of $62,400 or more p.a. [$1,200 per week]	all families with an income
jobless families with children aged under 15 years	families with children under 15 years in which no parent is employed	all families with children under 15 years
Labour force		
unskilled and semi-skilled workers	intermediate production & transport workers; labourers & related workers	total employed labour force
high status occupations[2]	managers & administrators; professionals	total employed labour force
female labour force participation	Females aged 20 to 54 years in the labour force	all females 20 to 54 yrs
Educational participation		
participation at age 16 years	people aged 16 years participating in full-time secondary education	all 16 year olds
Aboriginal and Torres Strait Islander people		
Aboriginal and Torres Strait Islander people	people identifying in the Census as Aboriginal and/or Torres Strait Islanders	total population
People born in non-English speaking countries		
resident for 5 years or more	number born in predominantly non-English speaking countries, resident for 5 yrs or more	total population
resident for less than 5 years	number born in predominantly non-English speaking countries, resident for less than 5 yrs	total population
proficiency in English	people aged 5 years and over born in predominantly non-English speaking countries who speak English 'not well' or 'not at all'	people aged 5 years and over
Housing		
dwellings rented from the SA Housing Trust	occupied dwellings rented from the State housing authority	all occupied dwellings
dwellings with no motor vehicle	occupied dwellings with no motor vehicle garaged or parked there on Census night	all occupied dwellings
Internet use		
People who used the Internet at home[3]	people who used the Internet at home in a one-week period	total population

[1]When interpreting the figures for low income, it should be noted that the indicators used for earlier years ($12,000 per annum or less in 1986, $16,000 per annum or less in 1991, and $21,000 per annum or less in 1996) do not equate to equivalent incomes and have thus not been adjusted based on changes to buying power. Rather, they are based on categories of income available from the Census and denote comparability of income in the particular Census year, based as close as practicable on levels of income of recipients of the supporting parents' payment.

[2]These variables were not mapped, but are included in the correlation analysis.

[3]This variable was adjusted using age standardisation: see Appendix 1.3: Analysis and presentation of data.

Table 4.3: Details of (non-Census) demographic and socioeconomic indicators calculated

Topic and variable name	Numerator	Denominator
Demography		
Total fertility rate	births by age of mother	female population aged 15 to 49 yrs
Labour force		
Unemployment[1]	unemployed people who actively sought work in the previous week	total labour force
Housing		
Rent assistance	renters receiving assistance from Centrelink	all households
Educational participation		
PES, PAS, SAS average subject achievement scores	aggregate subject achievement score for students aged 15 to 18 years	students aged 15 to 18 years

[1]**Department of Employment and Workplace Relations, *Small Area Labour Markets, Australia, March Quarter 2003***

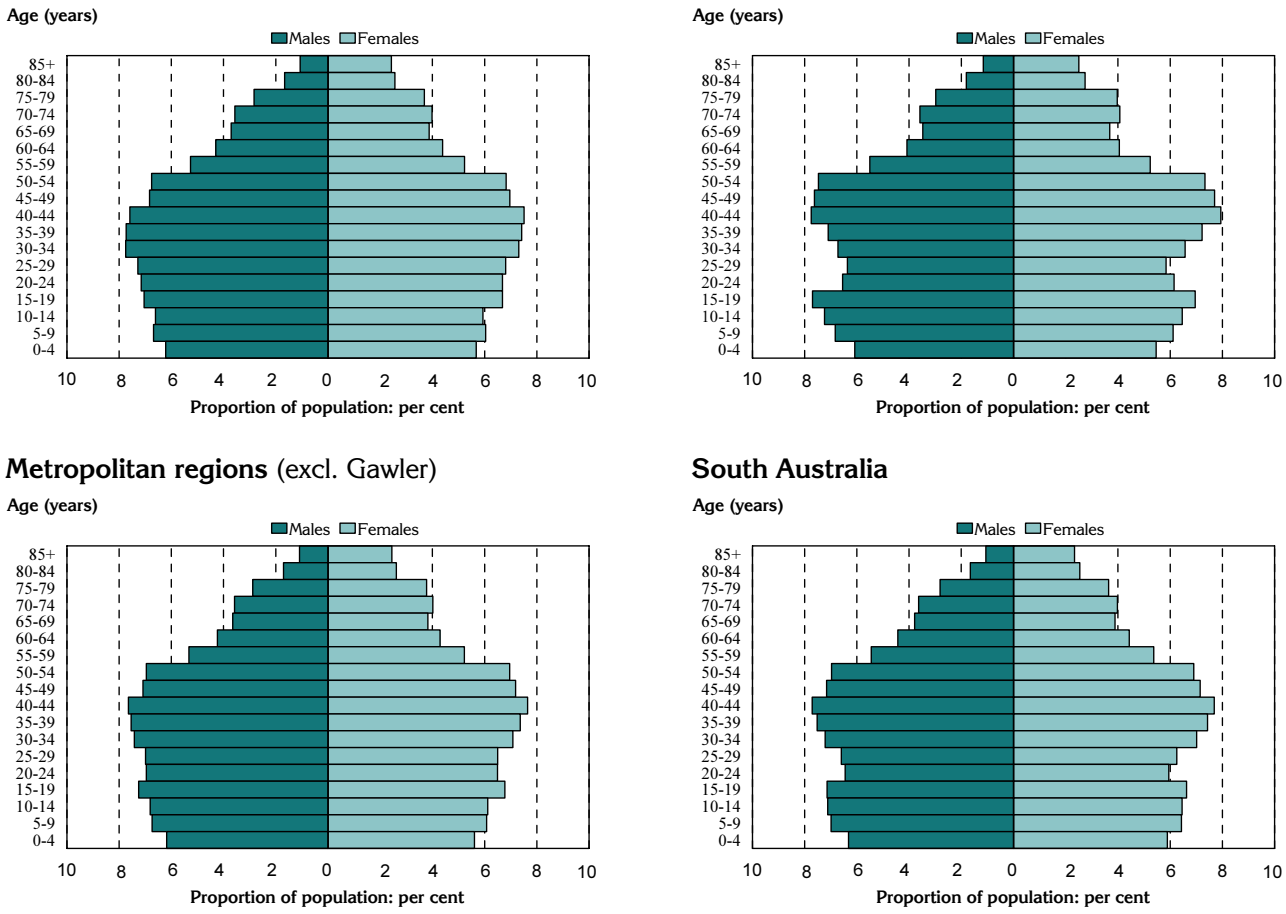
Additional data

Age and sex profiles

Age and sex profiles of the population are shown by health region for the metropolitan area (excluding Gawler) (Figure 4.1) and country South Australia (Figure 4.3), for Aboriginal and Torres Strait Islander people (Figure 4.2) and by groupings of SLAs, where the groups comprise SLAs of similar socioeconomic status (Figure 4.4).

The age/ sex profile (population pyramid) for the metropolitan regions shows a population that is stabilising, with low and declining birth rates and low death rates. The low and declining birth rates have led to an under-cutting of the pyramid since the birth of the 15 to 19 year old age group. The parents of this age group are themselves likely to largely be in the 40 to 44 year and older age groups, the last of the large adult groups; parents of the next cohort of 0 to 4 year olds will largely come from the smaller population age groups below, those aged from 25 to 40 years in 2001, resulting in further smaller birth cohorts. The substantially higher proportions of females at older ages are also clear.

Figure 4.1: Age and sex profiles, metropolitan health regions and South Australia, 2001



Source: Population data from ABS Usual Residents Profile 2001

The main differences in the profiles for the **Central Northern Adelaide** and the **Southern Adelaide** regions (Figure 4.1 above) are the higher proportions in the south in the 10 to 19 year age groups, followed by lower proportions to age 39 years for males (and 34 years for females). There are higher proportions at ages 50 to 54 years for males, and from ages 40 to 54 years for females. The **Southern Adelaide** region has an overall younger age profile, but there is also evidence of a stabilising population, with the undercutting of the pyramid at ages 0 to 4 years reflecting the low birth rate (this is also evident in **Central Northern Adelaide**).

The population pyramid for country South Australia (Figure 4.3) has a markedly different profile from that for the metropolitan regions (Figure 4.1). There are more people at younger ages (notably, higher proportions of males), and fewer at older ages. The influence of higher total fertility rates in country South Australia is evident in the higher proportion of 0 to 4 year olds. The absence of young people aged 15 to 19 is quite marked, and suggests that those at schools in the metropolitan regions may not have been allocated back to their usual residence (these age/ sex data are from the Usual Residents Profile). The 20 to 24 year and 25 to 29 year age groups are more likely to have left permanently, or semi-permanently, working or studying in the metropolitan regions or elsewhere in Australia. The lower proportions at older ages reflect, in part, the tendency for older people to move to the metropolitan regions.

The age/ sex pyramids for the individual country regions have similar profiles to the country total, but with notable variations in the proportions in the various age and sex groups.

Young children (aged 0 to 4 years) make up a higher proportion of the population in **Northern and Far Western,** and **Eyre** (for girls) regions; children aged 5 to 9 years are more predominant in **Eyre**, and **Northern and Far Western**; and the 10 to 14 year age group, one of the largest of all age groups, is most noticeable in **Wakefield** and for girls in **Eyre**. The 15 to 19 year age group is most evident in the **South East** (but higher for males than females), and least evident in **Mid North**, **Wakefield** and **Hills Mallee Southern**. **Northern and Far Western** is the region with the largest proportion of its population in the 20 to 24 year age group, compared with **Mid North**, **Wakefield** and **Hills Mallee Southern** with the lowest proportions.

The 25 to 29 year age group has a higher proportion than the 20 to 24 year age group in all regions, in some cases markedly higher (**Mid North**, **Northern and Far Western** and **Riverland**).

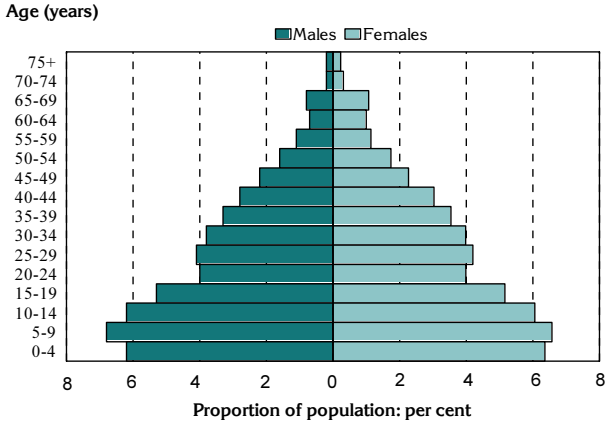
The 35 to 39 year age group is the largest age group for males in **Northern and Far Western** (for females in this region the 30 to 34 year age group is slightly larger); and the 40 to 44 year age group is the largest (along with the 15 to 19 year age group) over a number of regions.

From age 45 the bars retreat, showing declining proportions; a notable exception is in **Northern and Far Western** where the decline starts at age 40 for males and, even younger, at age 35 for females.

The proportions at the oldest ages are smallest in **Northern and Far Western** and largest in **Wakefield**: the other regions have similar proportions. The predominance of females aged 85 years and over is clearly evident, with around twice the proportion of females compared to males in all regions (slightly less than double in **Riverland** and **Eyre,** and higher in the other regions).

The profile of the Indigenous population (Figure 4.2) is completely different from the profile of the total population shown above. The effect of high Indigenous birth rates and the marked drop in the proportion of the population at each age group suggests high death rates are occurring from the youngest ages, with particularly heavy loss of life among teenagers and young adults, and slowing death rates only at older ages. This gives the chart a distinctive triangular shape.

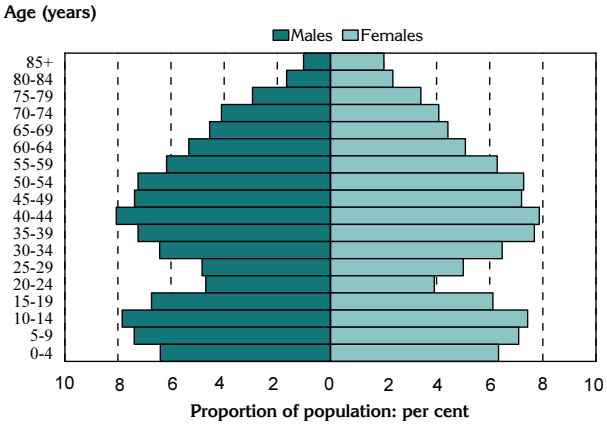
Figure 4.2: Age and sex profile of Aboriginal and Torres Strait Islander people, South Australia, 2001



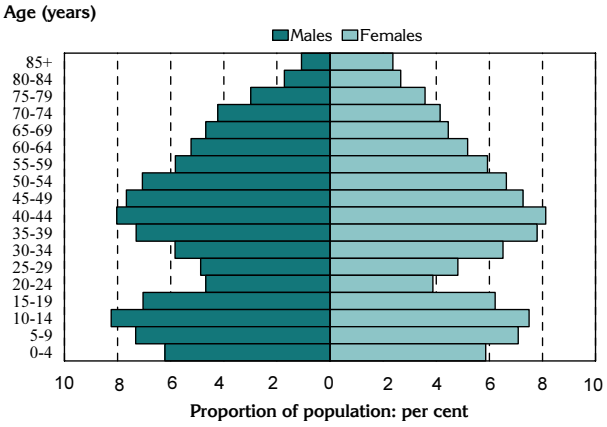
Source: Experimental estimates of Aboriginal and Torres Strait Islander people, ABS (unpublished)

Figure 4.3: Age and sex profiles by health region, country South Australia, 2001

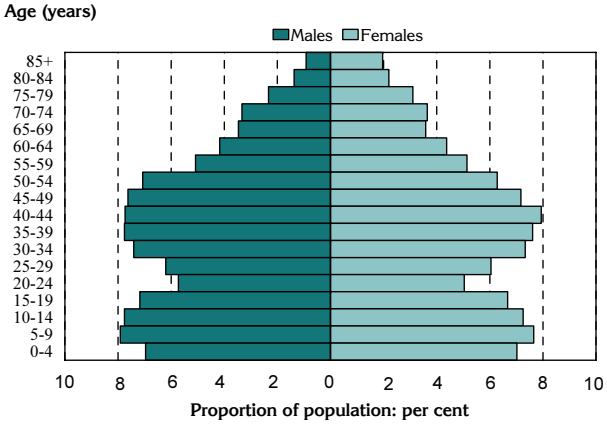
Hills Mallee Southern



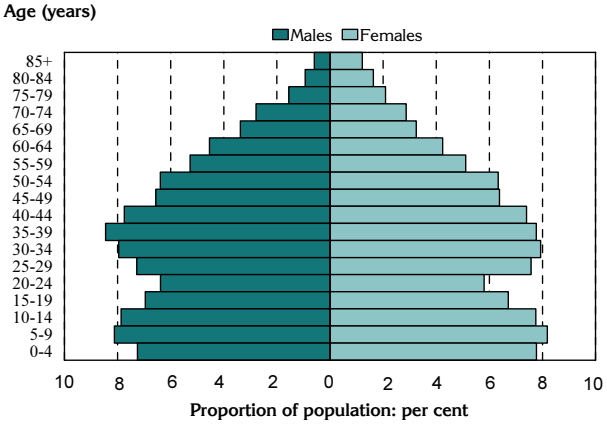
Wakefield



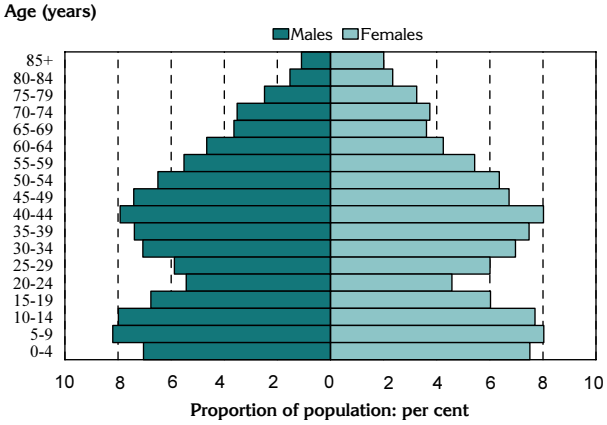
South East



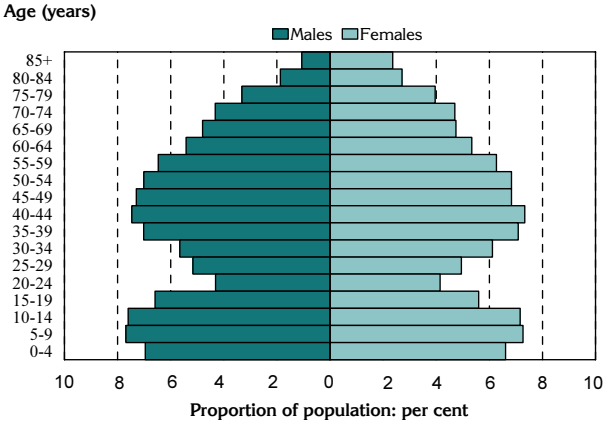
Northern and Far Western



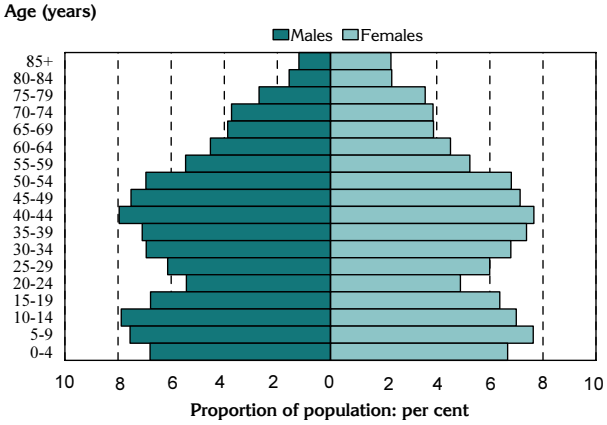
Eyre



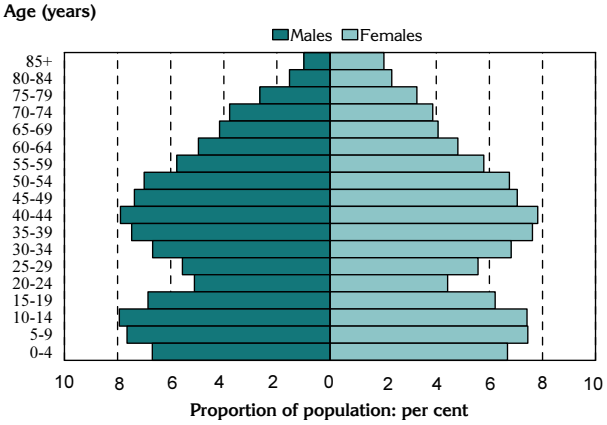
Mid North



Riverland



Country South Australia



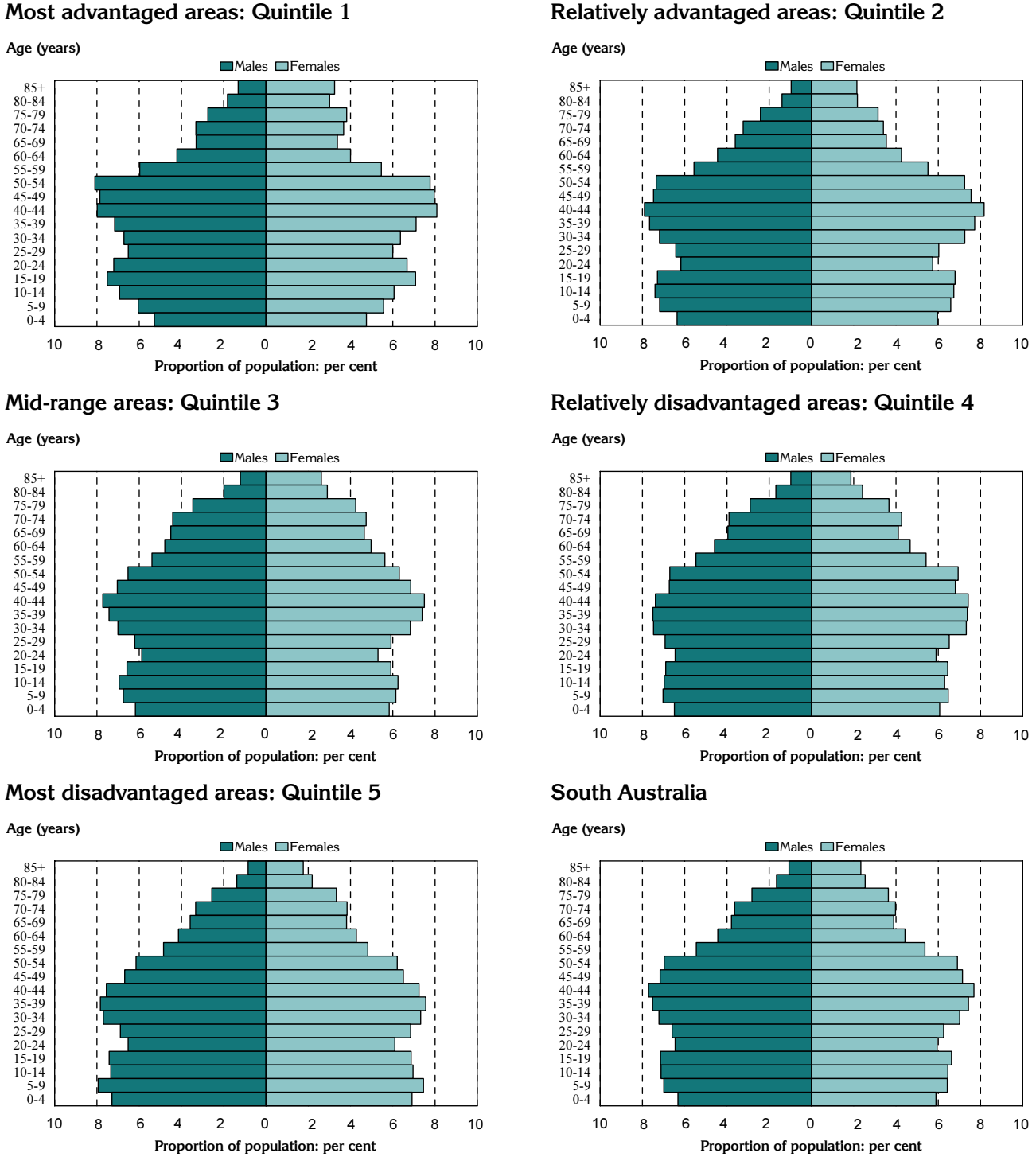
Source: Population data from ABS Usual Residents Profile 2001

Figure 4.4 shows the age/ sex profile of five groups of SLAs, based on the socioeconomic status of the SLAs. The groupings are referred to as 'quintiles of socioeconomic disadvantage of area' and were produced by ranking SLAs by their IRSD score: each quintile comprises approximately one fifth of the State's population.

Similar graphs, of quintiles of socioeconomic disadvantage of area in the metropolitan regions and in country South Australia, are shown in Appendix 1.6.

The charts show a striking variation in the age and sex structure of the population when viewed by quintile of socioeconomic disadvantage of area. The most advantaged areas have the smallest proportions at the youngest ages and the highest proportions at the oldest ages, when compared with the most disadvantaged areas, whose populations are younger and have higher death rates in middle adulthood, as well as substantial out-migration.

Figure 4.4: Age and sex profiles by socioeconomic groupings[1] of areas, South Australia, 2001



Source: Population data from ABS Usual Residents Profile 2001 and quintiles calculated from data in ABS SEIFA package

[1] **As measured by the IRSD**

Unemployment and CDEP

The estimates of unemployment mapped in this chapter are from data provided by the Economic and Labour Market Analysis Branch, Department of Employment and Workplace Relations. They are consistent with the definition of unemployment used in the Australian Bureau of Statistics' Monthly Labour Force Survey, the official estimates of unemployment, from which the data in the following table have been compiled (Table 4.4).

Unemployment is highest at the youngest ages for both males and females, in **Metropolitan Adelaide** and **country South Australia**. In absolute terms, males make up almost two thirds (64.0%) of those unemployed. Another difference between the sexes is that more unemployed females describe themselves as seeking part-time rather than full-time work: 36.0% in Metropolitan Adelaide compared with 13.0% of unemployed males, and 30.6% in country areas compared with 19.7% of unemployed males.

Table 4.4: Unemployment rates by age and sex, South Australia, 2001

Per cent of the labour force

Age (years)	Per cent male labour force unemployed		Per cent female labour force unemployed	
	Metropolitan Adelaide (including Gawler)	Country SA	Metropolitan Adelaide (including Gawler)	Country SA
15 to 19	17.6	19.3	17.2	14.1
20 to 24	10.5	9.8	7.5	11.9
25 to 34	9.8	9.1	6.6	4.4
35 to 44	6.9	4.9	4.3	4.9
45 to 54	6.5	3.2	3.4	-
55 to 59	6.2	3.4	3.3	1.8
60 to 64	9.7	-	-	-
Total - %	8.7	7.0	6.1	4.5
- No.	**25,300**	**7,100**	**14,600**	**3,600**

Source: ABS Labour Force, Australia, 2001, ABS Cat No. 6291.0.55.001

Indigenous communities can receive unemployment benefits under the Community Development Employment Project scheme (CDEP). This scheme is generally referred to as an employment program for Aboriginal people. However, it is, effectively, an unemployment program, as non-Indigenous people in similar circumstances receive an unemployment benefit.

For this analysis, the number of people covered by each CDEP scheme has been added to the number of unemployed people in the same SLA as that in which the CDEP scheme is based. The CDEP data (by geographic location) were provided by the Aboriginal and Torres Strait Islander Service (Table 4.5).

Table 4.5: Unemployment data used, South Australia, 2003

Health Region	CDEP[1]		Unemployed (DEWR[2])		Total unemployment	
	No.	%	No.	%	No.	%
Hills Mallee Southern	261	0.5	2,542	4.8	2,803	5.2
Wakefield	115	0.2	2,472	5.4	2,587	5.6
South East	84	0.3	1,382	4.2	1,466	4.4
Northern & Far Western	1,261	5.6	2,615	11.7	3,876	17.3
Eyre	647	4.0	1,113	6.8	1,760	10.8
Mid North	-	-	1,327	10.2	1,327	10.2
Riverland	83	0.5	920	5.4	1,003	5.9
Country SA	**2,451**	**1.3**	**11,816**	**6.1**	**14,267**	**7.4**
Central Northern Adelaide	102	0.0	26,911	6.9	27,013	6.9
Southern Adelaide	-	-	9,802	5.9	9,802	5.9
Metropolitan Adelaide (incl. Gawler)	**102**	**0.0**	**37,268**	**6.6**	**37,370**	**6.6**
South Australia	**2,553**	**0.3**	**49,084**	**6.5**	**51,637**	**6.8**

[1]**Community Development Employment Project data, July 2003**

[2]**Department of Education and Workplace Relations data, March 2003**

Source: CDEP data supplied by ATSIS for July 2003; DEWR data from *Small Area Labour Markets, Australia, March Quarter 2003*, Department of Employment and Workplace Relations

The main impact of the CDEP scheme on unemployment rates is in country South Australia, and in particular, in regions where Aboriginal and Torres Strait Islander people live. The largest numbers of people involved in CDEP schemes are in **Northern and Far Western** (1,261 people), **Eyre** (647) and **Hills Mallee Southern** (261). The addition of people in these schemes makes a significant difference to the unemployment rates in some SLAs (see page 96).

Country of birth

Data are mapped for people born overseas in 'predominantly non-English speaking countries'. These countries include all but the following overseas countries, which are loosely designated as 'predominantly English-speaking': Canada, Hong Kong, Ireland, New Zealand, South Africa, United Kingdom and the United States of America.

Table 4.6: Selected countries of origin of people born in predominantly non-English speaking countries, Metropolitan Adelaide, 1991 and 2001[1]

Country of origin	Number		Per cent	
	1991	2001	1991	2001
Italy	26,734	23,223	24.1	21.3
Greece	12,077	10,560	10.9	9.7
Viet Nam	8,989	10,212	8.1	9.4
Germany	11,367	10,068	10.3	9.2
Poland	7,740	6,502	7.0	6.0
Netherlands	7,258	6,134	6.6	5.6
Malaysia	3,915	3,982	3.5	3.7
Philippines	2,508	3,851	2.3	3.5
China[2]	2,530	3,474	2.3	3.2
India	2,532	3,133	2.3	2.9
Other	25,055	27,814	22.6	25.5
Total	110,705	108,953	100.0	100.0

[1]Excludes Former USSR, former Yugoslavia and Croatia for which comparable time series data are not available
[2]Excludes Hong Kong, Macau and Taiwan Province
Source: ABS 2001 Time Series Table T07

In the post-war period (in particular from the 1950s), the majority of immigrants from non-English speaking countries came from Europe, particularly Italy, Greece, Germany, the Netherlands, former Yugoslavia, Poland and the former USSR; in recent years, these groups have declined in importance.

The most rapidly growing non-English speaking groups are now from Asia, including from countries such as China, India and Cambodia.

Perhaps the most notable feature of the data in Tables 4.6 and 4.7 is the decline in the proportions of the population from Italy, Greece and the Netherlands, as these groups age and die.

Table 4.7: Selected countries of origin of people born in predominantly non-English speaking countries, country South Australia, 1991 and 2001

Country of origin	Number		Per cent	
	1991	2001	1991	2001
Germany	2,752	2,592	20.1	19.8
Netherlands	2,528	2,167	18.5	16.5
Italy	2,123	1,741	15.5	13.3
Greece	1,495	1,117	10.9	8.5
Philippines	536	661	3.9	5.0
India	422	555	3.1	4.2
Poland	582	409	4.3	3.1
Austria	357	337	2.6	2.6
Iraq	2	322	0.0	2.5
Hungary	367	277	2.7	2.1
Iran	22	265	0.2	2.0
Viet Nam	222	229	1.6	1.7
Other	2,283	2,451	16.7	18.7
Total	13,691	13,123	100.0	100.0

[1]Excludes Former USSR, former Yugoslavia and Croatia for which comparable time series data are not available
Source: ABS 2001 Time Series Table T07

The Italian born population is proportionally much less significant in country South Australia than in Metropolitan Adelaide. People recently arrived from Iraq and Iran are new inclusions in 2001 (Table 4.7).

Family type by tenure

Single parent families are often severely restricted in their access to housing and are much more heavily concentrated in rented accommodation than other family types. In 1991, 54.2% of single parent families with dependent children were in rental accommodation: 30.0% in public rental housing, and a further 24.2% in private rental housing (Table 4.8). By 2001, although the overall proportion remained virtually unchanged (53.3%), the split between public and private rental had changed substantially, with just 17.5% in public rental housing and 35.8% in private rental housing. Although the majority of these families would receive rental subsidies, they could still face higher costs than if they were in public rental housing.

The reduction in provision of public rental housing is discussed later in the chapter under the indicator topic of dwellings rented from the South Australian Housing Trust (page 144).

Table 4.8: Housing tenure by family type, Metropolitan Adelaide, 1991 and 2001

Per cent

Family type	Owner/ Purchaser	Government Rental	Private Rental	Other	Total
			1991		
Single parent with dependent children	43.1	30.0	24.2	2.7	**100.0**
Single parent, no dependent children	68.0	19.6	8.8	3.6	**100.0**
Couple with dependent children	82.3	6.9	8.1	2.7	**100.0**
Couple, no dependent children	78.5	7.7	11.0	2.8	**100.0**
Other	54.7	11.3	29.1	4.9	**100.0**
Total	**76.2**	**10.0**	**11.0**	**2.8**	**100.0**
			2001		
Single parent with dependent children	43.8	17.5	35.8	2.9	**100.0**
Single parent, no dependent children	70.6	14.5	12.3	2.5	**100.0**
Couple with dependent children	85.2	3.1	9.7	2.0	**100.0**
Couple, no dependent children	81.8	4.2	10.6	3.4	**100.0**
Other	53.5	12.9	26.7	6.9	**100.0**
Total	**70.1**	**8.1**	**17.7**	**4.1**	**100.0**

Source: ABS Census 1991 Basic Community Profile Table B41 and Unpublished data, ABS Census 2001

Similar data for country areas in South Australia for 2001 show that the position is remarkably similar, with 55.5% of single parent families with dependent children in rental accommodation: 18.8% in public rental housing, and a further 36.7% in private rental housing (Table 4.9).

Table 4.9: Housing tenure by family type, country South Australia, 2001

Per cent

Family type	Owner/ Purchaser	Government Rental	Private Rental	Other	Total
Single parent with dependent children	40.6	18.8	36.7	3.9	**100.0**
Single parent, no dependent children	71.1	12.2	13.4	3.3	**100.0**
Couple with dependent children	79.8	3.2	12.9	4.1	**100.0**
Couple, no dependent children	82.7	3.3	9.5	4.5	**100.0**
Other	55.7	11.6	23.5	9.2	**100.0**
Total	**70.8**	**6.9**	**16.6**	**5.7**	**100.0**

Source: Unpublished data, ABS Census 2001

Children aged 0 to 4 years, 2001

Children are major users of health services, especially in the first years of life. Developmental immaturity makes them particularly vulnerable to the influence of adverse experiences and poor living conditions. Children living in families of lower socioeconomic status are more likely to have poorer health status and generally make more use of primary and secondary health services than those who are better off (see pages 1-5). Their geographic distribution is therefore an indicator of likely health service demand and the need for early preventative programs.

Over the last four Censuses, the proportion of children aged 0 to 4 years in South Australia has steadily declined, dropping from 7.1% in 1986 to 6.1% in 2001 (Table 4.10). The rate of decline was notably greater in country areas (19.4%) than in Metropolitan Adelaide (including Gawler) (13.1%). Both the low percentage of 0 to 4 year old children and their declining proportion reflect the low fertility rate in South Australia (page 78).

After a small increase, from 67,574 in 1986 to 68,666 in 1991, the number of 0 to 4 year old children in Metropolitan Adelaide declined to 64,654 in 2001, representing 5.9% of the total metropolitan population and 69.3% of the State's children at these ages. The number and proportion of children aged 0 to 4 years in country South Australia has also declined. In 1986, there were 31,259 children aged 0 to 4 years, representing 8.2% of the country population. In 2001, this number had declined to 27,063, representing 6.6% of the total country population and 30.5% of the State's children at these ages.

Table 4.10: Proportion of children aged 0 to 4 years

Per cent Estimated Resident Population

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	6.7	6.5	6.3	5.9	-13.1
Country	8.2	7.9	7.4	6.6	-19.4
South Australia	7.1	6.9	6.6	6.1	-15.1

[1]**Per cent change over 15 years in the proportion of people aged 0 to 4 years**

Metropolitan regions

The highest proportions of young children were located in the outer northern and southern areas, while the lowest proportions were in the more established inner and middle areas of the metropolitan regions (Map 4.1).

The correlation analysis showed an inverse association at the SLA level with the variables for managers and administrators, and professionals; female labour force participation; high income families; and full-time educational participation, indicating that population groups with these characteristics are less likely to be found in areas with high proportions of young children (Table 8.1).

Central Northern Adelaide

There were 43,921 children aged 0 to 4 years in Central Northern region, 5.9% of the region's population and over two thirds (70.7%) of this age group in the metropolitan regions (Table 4.11).

SLAs with the highest proportions of young children were located in the outer north, and included Playford - West Central (9.9%), Playford - East Central (9.0%), Salisbury - Inner North (8.8%), Salisbury Balance (8.3%), Tea Tree Gully - North (7.6%), Playford - Elizabeth (7.5%), Salisbury - Central (6.8%), Playford - Hills and - West (both 6.6%), Salisbury - North-East (6.5%) and Tea Tree Gully - Central (6.5%).

The largest numbers of 0 to 4 year olds were similarly located in the outer north, in Salisbury - Inner North (2,129 children), Salisbury - South-East (2,051), Tea Tree Gully - North (1,945), Playford - Elizabeth (1,869), Salisbury - Central (1,844), Tea Tree Gully - South (1,836), Tea Tree Gully - Central (1,714), Playford - East Central (1,678) and Port Adelaide Enfield - Coast (1,639).

The SLAs with the lowest proportions of children aged 0 to 4 years in the Central Northern region were Adelaide (2.7%), Norwood Payneham St Peters - West (4.1%), Burnside - North-East (4.2%), Charles Sturt - Coastal (4.3%), Burnside - South-West (4.4%) and Walkerville (4.5%),

Southern Adelaide

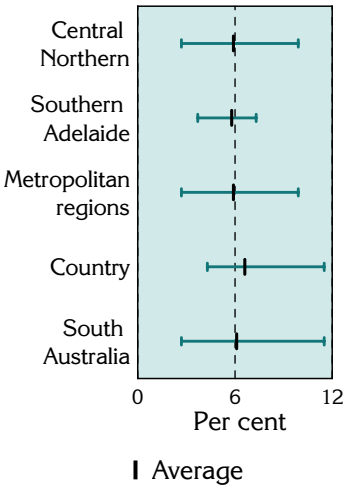
There were 18,231 children aged 0 to 4 years in the Southern region, a similar proportion (5.8%) to that in Central Northern region, but less than a third (29.3%) of the metropolitan regions' young children.

The following parts of Onkaparinga - Woodcroft (7.3%), Hackham (7.2%), Morphett (6.8%) and South Coast (6.7%) - all had high proportions of 0 to 4 year olds, as did Marion - South (6.6%).

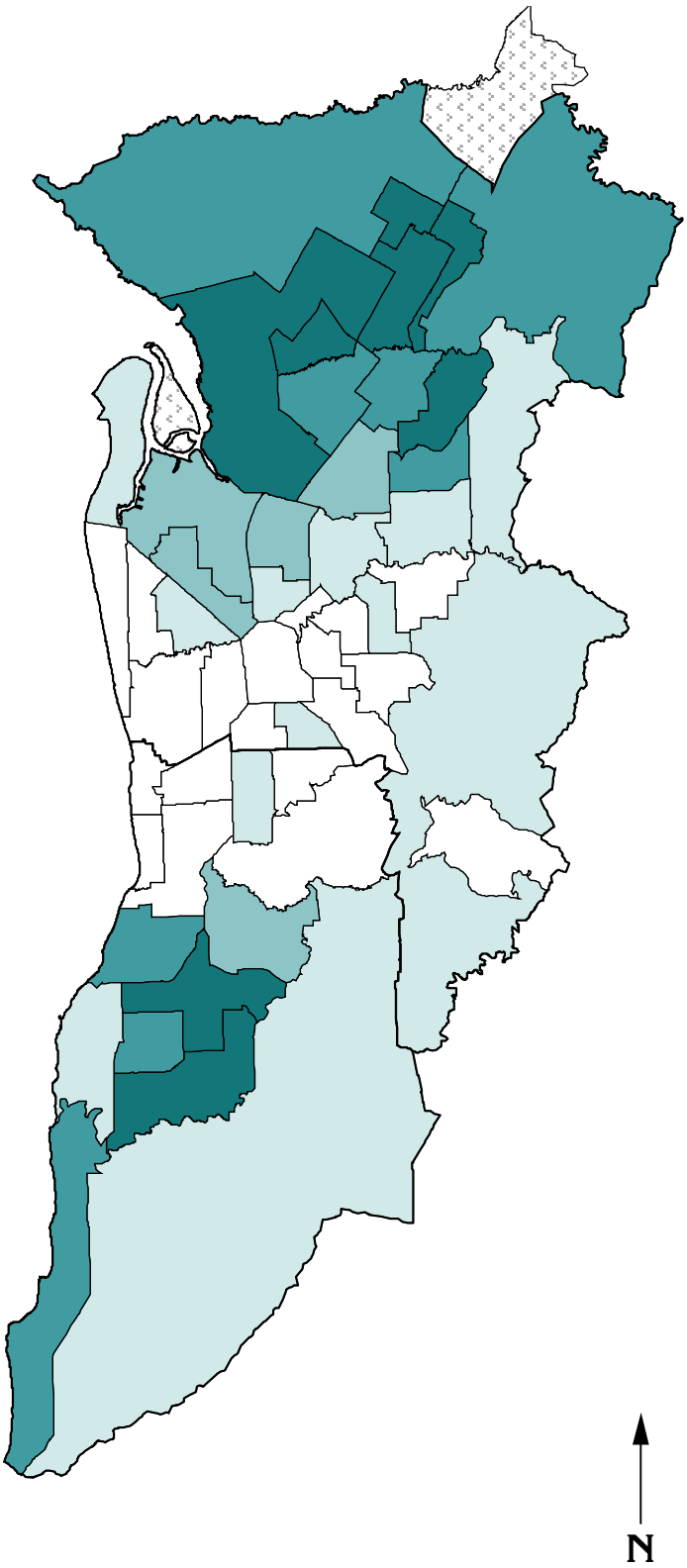
There were few SLAs with relatively large numbers of 0 to 4 year olds in the Southern region, the largest being in Onkaparinga - Woodcroft (2,468 children) and Onkaparinga - Morphett (1,620).

SLAs with the lowest proportions of children aged 0 to 4 years were Holdfast Bay - North (3.7%) and - South (3.9%), Mitcham - North East (4.6%) and Marion - Central (4.8%).

Map 4.1
Children aged 0 to 4 years, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent aged 0 to 4 years, by SLA

- *7.0% or more*
- *6.5 to 6.9%*
- *6.0 to 6.4%*
- *5.5 to 5.9%*
- *fewer than 5.5%*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Children aged 0 to 4 years, 2001

Country South Australia

The regions with the highest proportions of young children were **Northern and Far Western** (7.5%) and **Eyre** (7.3%) (Table 4.11 and graph opposite).

The highest proportions of 0 to 4 year olds were located in the north of the State and in some parts of the west coast. The lowest proportions were located on the Yorke Peninsula and in SLAs close to the metropolitan regions (Map 4.2).

Table 4.11: Regional totals, children aged 0 to 4 years, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	6,898	6.4	7.7
Wakefield[1]	5,737	6.0	6.4
South East	4,248	7.0	4.7
Northern & Far Western	3,739	7.5	4.2
Eyre	2,401	7.3	2.7
Mid North	2,076	6.8	2.3
Riverland	2,196	6.7	2.5
Country SA	**27,334**	**6.6**	**30.5**
Central Northern	43,921	5.9	49.1
Southern	18,231	5.8	20.4
Metropolitan regions	**62,152**	**5.9**	**69.5**
South Australia	**89,486**	**6.1**	**100.0**

[1]**Gawler is included in Wakefield region**

There was no consistent evidence in the correlation analysis of an association at the SLA level between high proportions of 0 to 4 year old children and socioeconomic status (Table 8.2).

The Regions

Within **Northern and Far Western**, there were high proportions of 0 to 4 year old children in Roxby Downs (11.5%, 402 children) and Unincorporated Far North (8.1%, 482). Although it did not map in the highest range, the second largest number of children in country South Australia was located in Whyalla (1,547, 7.2%). There were a further 934 young children in Port Augusta (7.0%).

In **Eyre**, 7.3% of the population were aged 0 to 4 years old, with high proportions in Unincorporated West Coast (10.4%, just 62 children), followed by Ceduna (9.1%, 321), Elliston (8.8%, 99) and Port Lincoln (7.6%, with the large number of 1,020 children). Tumby Bay had a low proportion of children (4.9%, 123 children).

The **South East** had 4,248 children in this age group (7.0%), which included 1,676 in Mount Gambier (7.3%), the SLA with the largest number of children in this age group in country South Australia. There was a high proportion of 0 to 4 year olds in Tatiara (8.5%, 581).

The **Mid North** had 6.8% of the population in this age group. Although none of the SLAs in the **Mid North** mapped in the highest range, there were a large number of 0 to 4 year olds in Port Pirie - City (999 children, 7.3%). The proportion of children at these ages in Orroroo/Carrieton was low (4.6%, 46 children).

The **Riverland** had 2,196 children aged 0 to 4 years (6.7%). The largest numbers in this region were located in Renmark Paringa - Renmark (533 children, 6.8%), Berri and Barmera - Berri (487, 7.2%) and Loxton Waikerie - East (486, 6.7%).

Some of the largest numbers of 0 to 4 year old children were in the **Hills Mallee Southern** region (6,898 children, 6.4%), in particular in the SLAs of Murray Bridge (1,197, 7.2%), Mount Barker - Central (1,180, 7.8%), Mount Barker Balance (589, 7.3%) and Adelaide Hills Balance (582, 7.0%). Some of the lowest proportions were found in Victor Harbor (4.3%, 460 children), Alexandrina - Coastal (4.6%, 437), and Yankalilla (4.8%, 181).

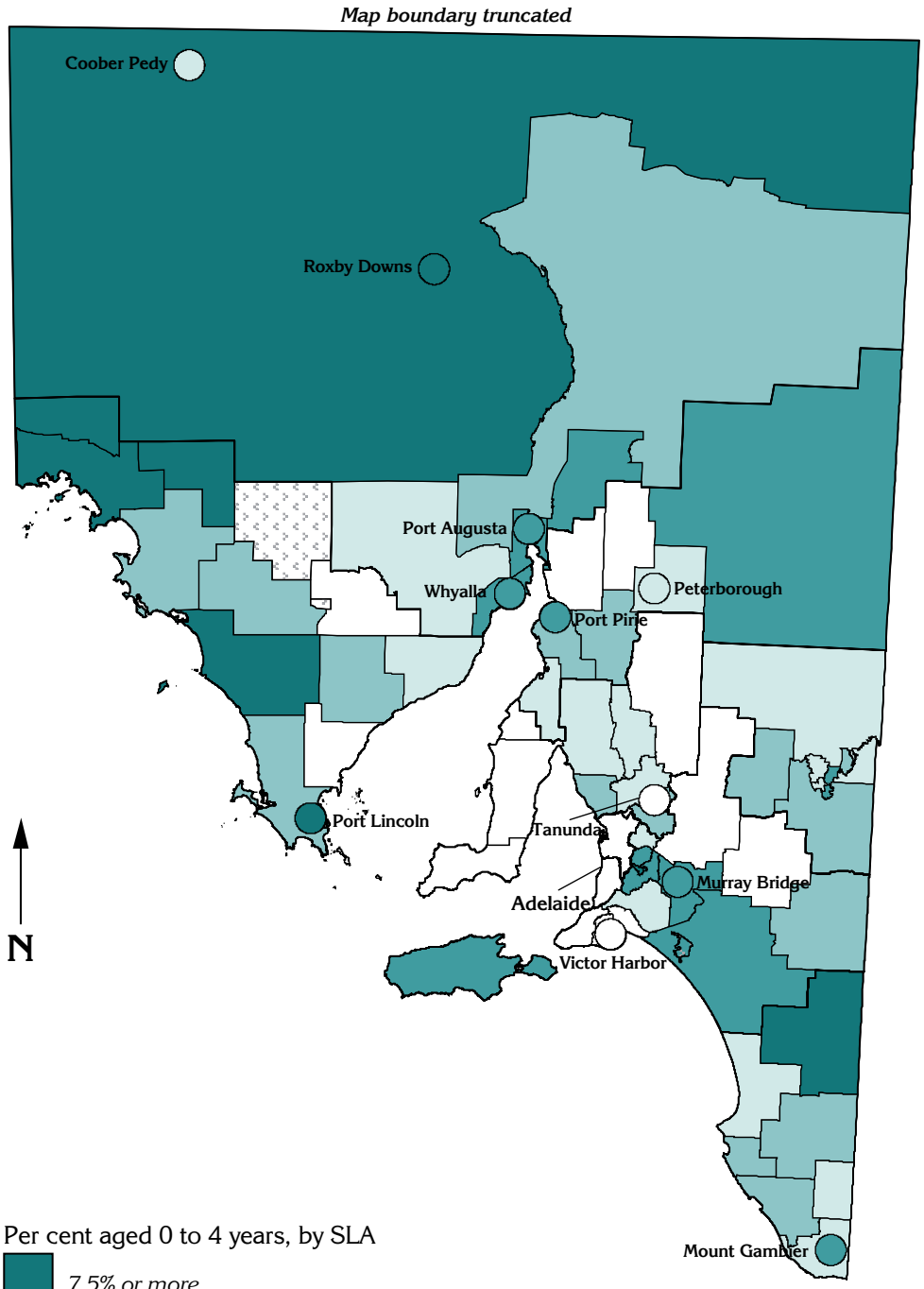
There were generally lower proportions of 0 to 4 year old children in **Wakefield** (6.0%, and a large number of 5,737 overall). There were notable numbers in the SLAs of Gawler (1,059 children, 5.9%), Light (661 children, 6.4%), Copper Coast (588, 5.5%) and Clare and Gilbert Valleys (501, 6.2%).

Throughout most of country South Australia, children aged 0 to 4 years comprised between five and eight per cent of the population. Areas with smaller proportions were primarily located on the Fleurieu Peninsula, at Victor Harbor (4.3%), Alexandrina - Coastal (4.6%) and Yankalilla (4.8%), and elsewhere, in Orroroo/Carrieton (4.6%) and Tumby Bay (4.9%).

ASGC Remoteness classification

The graph of the proportion of children aged 0 to 4 years (opposite page) shows a strong relationship with remoteness, increasing steadily across the remoteness areas from 5.9% in the Major Cities areas to 8.0% in the Very Remote areas. Conversely, the numbers of children drop rapidly across the remoteness classes.

Map 4.2
Children aged 0 to 4 years, South Australia, 2001

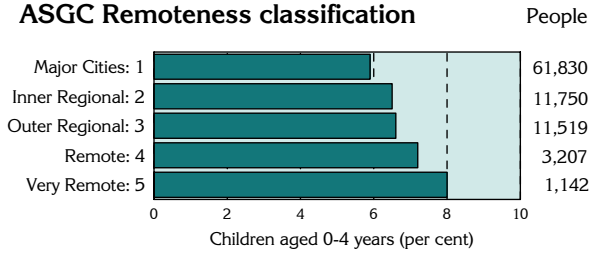


Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent aged 0 to 4 years, by SLA

- *7.5% or more*
- *7.0 to 7.4%*
- *6.5 to 6.9%*
- *5.0 to 6.4%*
- *fewer than 6.0%*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100*



Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Children aged 5 to 14 years, 2001

Children aged 5 to 14 years are school aged, and are significant users of health and other services. Children of these ages living in families of lower socioeconomic status are more likely to have poorer health status and generally make greater use of primary and secondary health services than those who are better off (see pages 1-5). Their geographic distribution is therefore an indicator of likely service demand and the need for early preventative programs.

Over the last four Censuses, the proportion of children aged 5 to 14 years in South Australia has steadily declined, dropping from 14.5% in 1986 to 13.2% in 2001 (Table 4.12). The rate of decline was greater in the country areas (9.0%) than in Metropolitan Adelaide (including Gawler) (8.8%).

Table 4.12: Proportion of children aged 5 to 14 years

Per cent Estimated Resident Population

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	13.8	13.1	12.9	12.6	-8.8
Country	16.4	15.8	15.7	14.9	-9.0
South Australia	14.5	13.8	13.7	13.2	-8.9

[1]**Per cent change over 15 years in the proportion of people aged 5 to 14 years**

Metropolitan regions

In 2001, there were 135,346 children aged 5 to 14 years living in the metropolitan regions (excluding Gawler), comprising 12.8% of the total metropolitan population and 68.4% of the State's children at these ages (Table 4.13). The highest proportions of children aged 5 to 14 years were located in the outer northern, southern and outer eastern SLAs (Map 4.3).

There was no consistent evidence in the correlation analysis of an association at the SLA level between high proportions of children aged 5 to 14 years and socioeconomic status (Table 8.1).

Central Northern Adelaide

In 2001, there were 93,275 children aged 5 to 14 years in the Central Northern region, comprising 12.6% of the region's population and 68.9% of this age group in the metropolitan regions.

The highest proportions of these children were located in the outer suburban SLAs of Playford - West Central (18.6%), Playford - East Central (18.3%), Salisbury - Inner North (18.0%), Playford - Hills (18.0%), Playford - West (17.5%), Salisbury Balance (17.2%), Tea Tree Gully - North (17.1%) and Salisbury - Central (15.2%). There were also high proportions in Adelaide Hills - Central (15.8%) and Adelaide Hills - Ranges (15.4%).

The largest numbers of children aged 5 to 14 years in the Central Northern region were located in Tea Tree Gully - North (4,396 children), Salisbury - South-East (4,353), Salisbury - Inner North (4,327), Salisbury - Central (4,110), Tea Tree Gully - South (3,931), Playford - Elizabeth (3,710), Tea Tree Gully - Central (3,611), Port Adelaide Enfield - Coast (3,479), Campbelltown - East (3,464), Playford - East Central (3,391) and Salisbury - North-East (3,263).

The smallest proportion of children in this age group in the metropolitan regions was in the SLA of Adelaide (4.2%), with other low proportions generally located in inner SLAs, including West Torrens - East (8.9%), Norwood Payneham St Peters - East (9.3%) and - West (9.3%), and West Torrens - West (9.7%).

Southern Adelaide

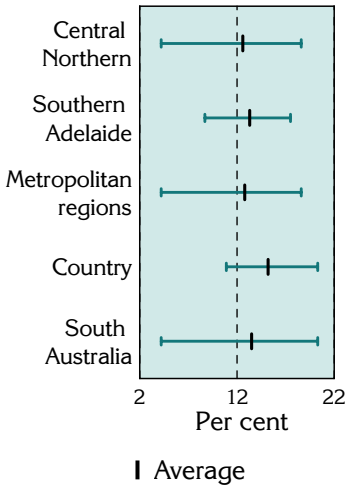
There were 42,065 children aged 5 to 14 years in the Southern region, comprising a larger proportion of the population than their counterparts in the Central Northern region at 13.3% of the total population, but less than one third (31.1%) of this age group in the metropolitan regions.

In the Southern region, the highest proportions of children in this age group were located in Marion - South (17.5%), Onkaparinga - Hackham (16.9%), Onkaparinga - Hills (16.2%), Onkaparinga - Reservoir (16.1%), Onkaparinga - Woodcroft (15.7%) and Onkaparinga - South Coast (15.6%).

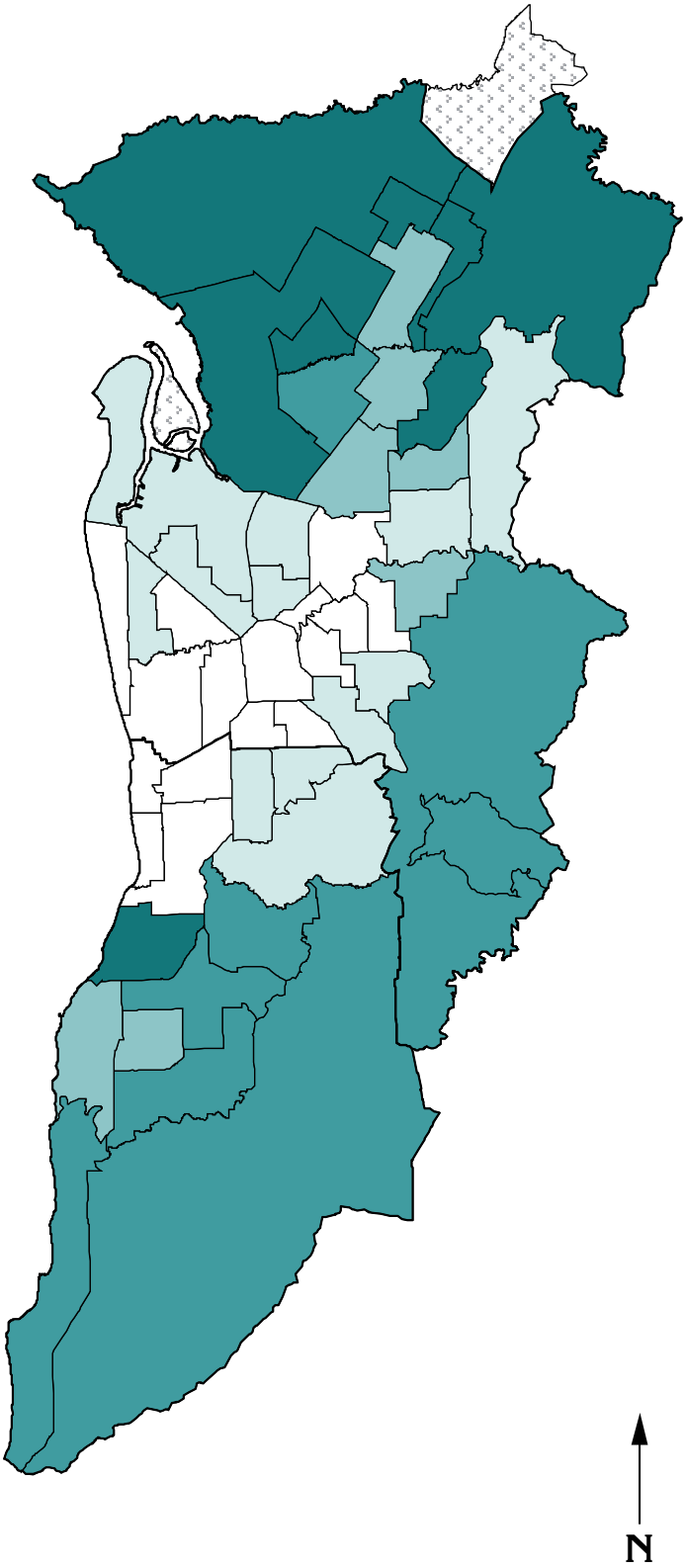
Onkaparinga - Woodcroft (5,340 children) had the largest number of children aged 5 to 14 years at the SLA level in the metropolitan regions. There were also large numbers of children in Onkaparinga - Reservoir (3,935), Onkaparinga - South Coast (3,553), Marion - South (3,457), Onkaparinga - Morphett (3,394) and Marion - Central (3,353).

The SLAs with the smallest proportions of children in this age group in the Southern region were Holdfast Bay - North (8.7%) and - South (9.6%), and Marion - North (10.0%).

Map 4.3
Children aged 5 to 14 years, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator proportions at the SLA level within the region.



SLA
Health Region

Per cent aged 5 to 14 years, by SLA

- *17.0% or more*
- *15.0 to 16.9%*
- *13.0 to 14.9%*
- *11.0 to 12.9%*
- *fewer than 11.0%*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In 2001, there were 62,461 children aged 5 to 14 years living in country South Australia, comprising 15.2% of the total country population and 31.6% of the State's children at these ages. This was a notably higher proportion than in the metropolitan regions (12.8%) (Table 4.13).

There were high proportions of 5 to 14 year old children in the north of the State, along the west coast and the western part of the Eyre Peninsula. There were low proportions in the Yorke Peninsula, the eastern part of the Eyre Peninsula and in the east of the State (Map 4.4).

Table 4.13: Regional totals, children aged 5 to 14 years, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	16,115	14.9	8.1
Wakefield[1]	14,320	15.1	7.2
South East	9,291	15.3	4.7
Northern & Far Western	7,954	16.0	4.0
Eyre	5,273	16.0	2.7
Mid North	4,547	14.9	2.3
Riverland	4,902	15.0	2.5
Country SA	**62,461**	**15.2**	**31.6**
Central Northern	93,275	12.6	47.2
Southern	42,065	13.3	21.3
Metropolitan regions	**135,346**	**12.8**	**68.4**
South Australia	**197,807**	**13.5**	**100.0**

[1]**Gawler is included in Wakefield region**

There was no consistent evidence in the correlation analysis of an association at the SLA level between high proportions of children aged 5 to 14 years and socioeconomic status (Table 8.2).

The Regions

In the **Northern and Far Western** region, there were 7,954 children aged 5 to 14 years, comprising 16.0% of the 49,835 people in this region. High proportions of children at these ages were recorded in Roxby Downs (20.3%), Unincorporated Flinders Ranges (18.0%), and Unincorporated Far North (16.1%). Although they did not rank among the highest proportions, the SLAs with the largest numbers of children in this age group in the **Northern and Far Western** region were Whyalla (3,400, representing 15.8%) and Port Augusta (2,048, representing 15.4%).

In the **Eyre** region, 16.0% of the population were aged 5 to 14 years in 2001, with 5,273 children in this age group. Despite the high proportions in the SLAs of Elliston (18.4%), Lower Eyre Peninsula (17.3%), Ceduna (17.2%), Kimba (17.1%), Unincorporated West Coast (16.8%), Cleve (16.4%) and Streaky Bay (16.1%), the only SLA in the region with a large number of children in this age group was Port Lincoln (2,046 children).

There was a relatively large number of 5 to 14 year old children in the **Wakefield** region in 2001 with 14,320 children, comprising 15.1% of the population. The highest proportions were in the SLAs of Mallala (18.0%), Light (16.6%), and Barossa - Barossa (16.4%). Large numbers of children were recorded in Gawler (2,677 children), and Copper Coast (1,471).

The largest number of children in this age group (16,115 children) was recorded in the **Hills Mallee Southern** region, representing 14.9% of the total population. Within the region, there were high proportions located in the SLAs of Adelaide Hills - North (17.4%), Southern Mallee (17.0%), Mount Barker Balance (17.0%), Karoonda East Murray (16.3%) and Mount Barker - Central (16.3%).

Some of the largest numbers of 5 to 14 year old children in country South Australia were located in the SLAs of Murray Bridge (2,508 children), Mount Barker - Central (2,460), Mount Barker Balance (1,362) and Alexandrina - Strathalbyn (1,312)

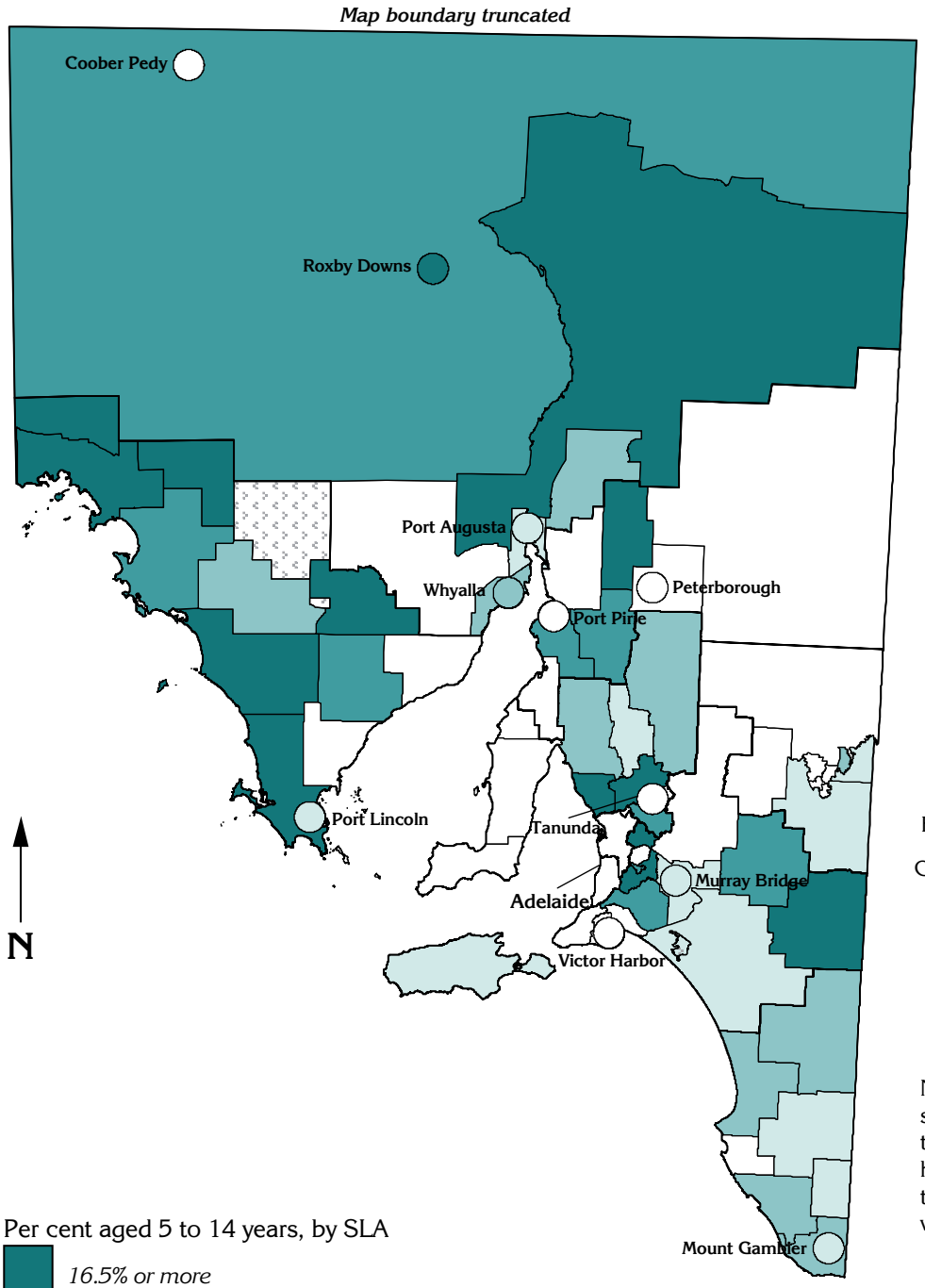
In the **Mid North** region, where 14.9% of the population were in this age group (4,547 children), there were high proportions in Orroroo/Carrieton (16.9%) and Northern Areas (16.2%). The SLA with the largest number of 5 to 14 year old children in this region was Port Pirie - City with 1,984 children.

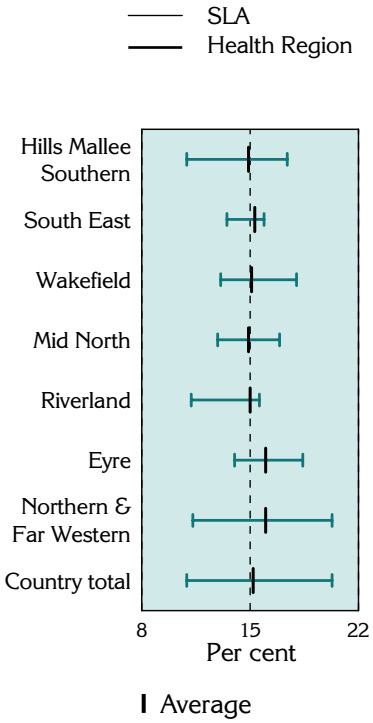
The SLA with the largest number of 5 to 14 year old children in country South Australia was Mount Gambier, in the **South East** region, with 3,441 children (15.0%). Wattle Range - West also had a relatively large number of children for this region (1,361 children).

ASGC Remoteness classification

The proportion of children aged 5 to 14 years increased with increasing remoteness (see graph opposite), ranging from 12.8% in the Major Cities areas to 16.0% in the Very Remote areas (15.9% in Remote).

Map 4.4
Children aged 5 to 14 years, South Australia, 2001



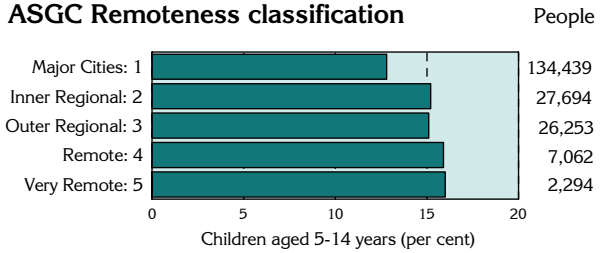


Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent aged 5 to 14 years, by SLA

- *16.5% or more*
- *16.0 to 16.4%*
- *15.5 to 15.9%*
- *15.0 to 15.4%*
- *fewer than 15.0%*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100*



Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Young people aged 15 to 24 years, 2001

Young people do not utilise services to the extent of their representation in the community. Many are unaware of the services that are available to them or how to access these services, particularly when they are in distress. Their use of health services is also influenced by factors such as cost, availability of public transport, accessibility, and perceived authoritarian and judgmental attitudes of service providers. These can lead to young people foregoing appropriate health care. Young people of lower socioeconomic status are more likely to have poorer health status than those who are better off. Their geographic distribution is therefore an indicator of likely health service demand and the need for youth-friendly, accessible preventative programs.

Over the last four Censuses, the proportion of young people aged 15 to 24 years in South Australia has steadily declined, dropping from 16.7% in 1986 to 13.1% in 2001 (Table 4.14). The decline in numbers was notably greater in country areas (down by 26.6%) than in Metropolitan Adelaide (down by 19.7%).

Table 4.14: Proportion of young people aged 15 to 24 years

Per cent Estimated Resident Population

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	17.1	16.1	14.6	13.8	-19.7
Country	15.6	13.5	11.7	11.4	-26.6
South Australia	16.7	15.4	13.8	13.1	-21.4

[1]**Per cent change over 15 years in the proportion of people aged 15 to 24 years**

Metropolitan regions

In 2001, there were 145,045 young people aged 15 to 24 years in the metropolitan regions, comprising 13.7% of the total metropolitan population (excluding Gawler). Young people at these ages are over-represented in the metropolitan regions' population, comprising 75.6% of the State's youth, compared with 72.0% of people of all ages who live in the metropolitan regions (Table 4.15). The highest proportions of young people were located in the northern areas, inner SLAs and through the south (Map 4.5).

There was no consistent evidence in the correlation analysis of an association at the SLA level between high proportions of young people aged 15 to 24 years and socioeconomic status (Table 8.1).

Central Northern Adelaide

There were 101,828 young people aged 15 to 24 years in the Central Northern region in 2001, 13.8% of the total population for this region. This is over half of all young people in the State (53.1%) and more than two thirds of those in the metropolitan regions (70.2%).

With nearly one in four people in this age group, the City of Adelaide had the highest proportion of young people (22.6%). This was followed by Salisbury Balance (15.9%), Norwood Payneham St Peters - West (15.8%), Salisbury - Central (15.4%), Salisbury - Inner North (15.4%), Tea Tree Gully - Central (15.2%), Playford - West Central (14.9%), Salisbury - North-East (14.6%), West Torrens - East (14.6%), Unley - West (14.5%), Tea Tree Gully - South (14.5%), Tea Tree Gully - Hills (14.2%), Playford - Elizabeth (14.1%) and Tea Tree Gully - North (14.0%).

The largest numbers of young people were located in the outer SLAs of the Central Northern region, in Tea Tree Gully - South (4,686 young people), Salisbury - South-East (4,501), Salisbury - Central (4,166), Tea Tree Gully - Central (3,981), Charles Sturt - Coastal (3,847), Salisbury - Inner North (3,695), Campbelltown - East (3,691), Port Adelaide Enfield - East (3,658), Tea Tree Gully - North (3,599), Playford - Elizabeth (3,546) and West Torrens - West (3,417).

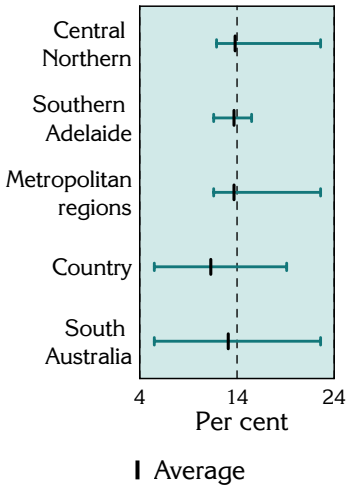
Southern Adelaide

In the Southern region, there were 43,208 young people aged 15 to 24 years, comprising a similar proportion of the region's population to their counterparts in the Central Northern region, of 13.7%.

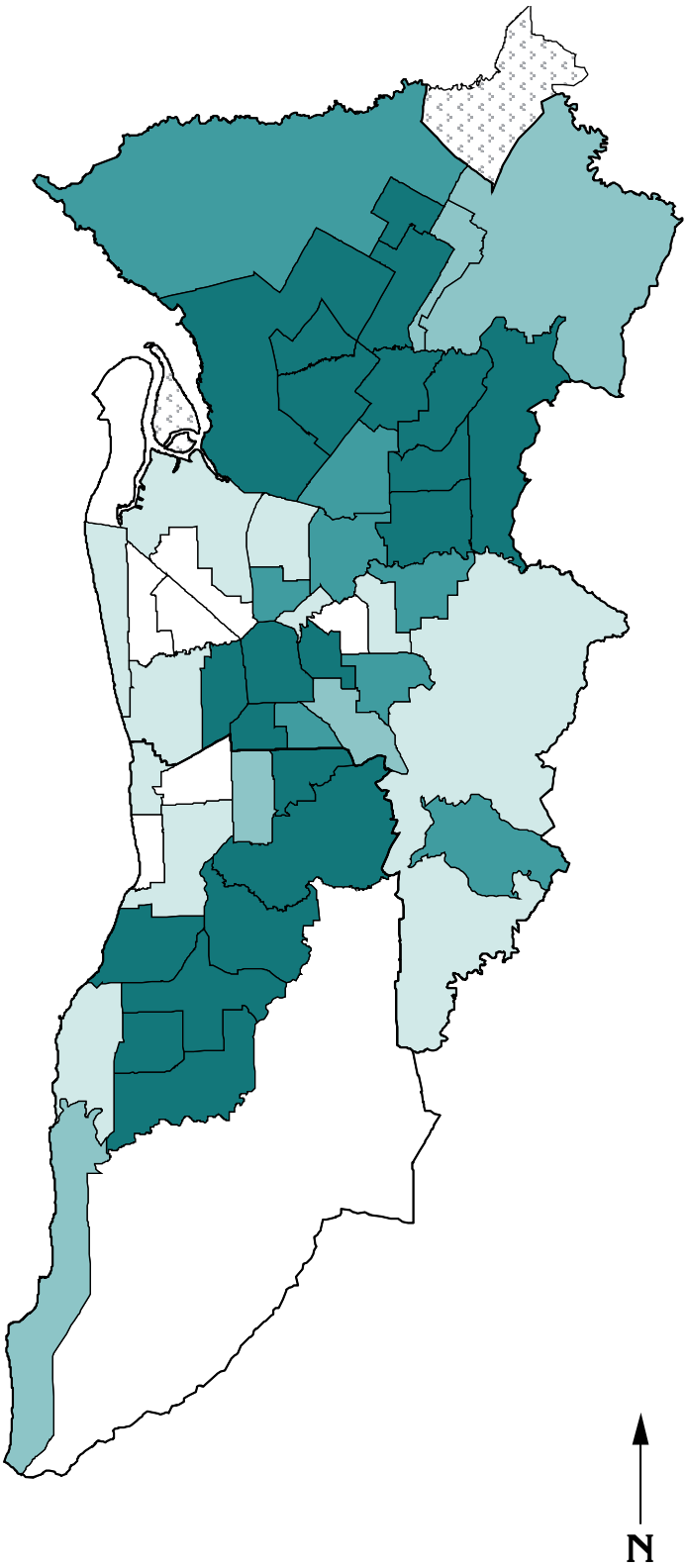
The highest proportions of young people were recorded in Onkaparinga - Reservoir (15.5%), Onkaparinga - Morphett (15.1%), Marion - South (14.9%), Onkaparinga - Hackham (14.8%), Mitcham - Hills (14.5%), Onkaparinga - Woodcroft (14.2%) and Mitcham - North-East (14.2%).

The largest numbers of young people in the metropolitan regions were located in Onkaparinga - Woodcroft (4,811 young people). The Southern SLAs of Marion - Central (4,109 young people), Onkaparinga - Reservoir (3,777), Onkaparinga - Morphett (3,582) and Mitcham - Hills (3,359) also had large numbers of this population group.

Map 4.5
Young people aged 15 to 24 years, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent aged 15 to 24 years, by SLA

- *14.0% or more*
- *13.5 to 13.9%*
- *13.0 to 13.4%*
- *12.5 to 12.9%*
- *fewer than 12.5%*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In 2001, there were 46,856 young people aged 15 to 24 years living in country South Australia, comprising 11.4% of the total country population and 24.4% of the State's young people. This was a lower proportion than in the metropolitan regions (13.7%).

The regions with the highest proportions were **Northern and Far Western** (12.9%) and **South East** (12.3%) (Table 4.15 and graph opposite). The highest proportions of 15 to 24 year olds were located in the north of the State, on the west coast, in SLAs close to the metropolitan regions and in parts of the south-east. There were low proportions of young people on the Eyre and Yorke Peninsulas (Map 4.6).

Table 4.15: Regional totals, young people aged 15 to 24 years, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	11,630	10.7	6.1
Wakefield[1]	10,361	10.9	5.4
South East	7,478	12.3	3.9
Northern & Far Western	6,449	12.9	3.4
Eyre	3,770	11.4	2.0
Mid North	3,159	10.3	1.6
Riverland	3,828	11.7	2.0
Country SA	**46,856**	**11.4**	**24.4**
Central Northern	101,828	13.8	53.1
Southern	43,208	13.7	22.5
Metropolitan regions	**145,045**	**13.7**	**75.6**
South Australia	**191,901**	**13.1**	**100.0**

[1]**Gawler is included in Wakefield region**

There was no consistent evidence in the correlation analysis of an association at the SLA level between high proportions of young people aged 15 to 24 years and socioeconomic status (Table 8.2).

The Regions

Northern and Far Western region had the greatest proportion of population in the 15 to 24 year age group, with 12.9%, representing 6,449 young people. The SLAs of Unincorporated Far North (19.1%), Port Augusta (12.9%) and Whyalla (12.3%) all had relatively high proportions.

In the **South East** region, 12.3% of the population were aged 15 to 24 years. There were 7,478 young people in this region, including 3,040 living in Mount Gambier (13.3%), the largest SLA population of 15 to 24 year olds in country South Australia.

The SLAs of Naracoorte and Lucindale (12.5%, 993 young people), Grant (12.1%, 910 young people) and Wattle Range - East (12.0%, 381 young people) also had relatively high proportions of young people.

There were 3,828 young people in the **Riverland** in 2001, comprising 11.7% of the population. Within the region, there were high proportions of 15 to 24 year olds located in Berri and Barmera - Berri (13.3%, 900 young people), and Unincorporated Riverland (13.3%, although a small number of only 19 young people).

In the **Eyre** region, there were 3,770 young people, representing 11.4% of the population. The largest proportion within this region at the SLA level was located in Unincorporated West Coast (13.8%), with 82 young people; and the largest number was located in Port Lincoln with 1,838, also representing a relatively large proportion, of 13.7%.

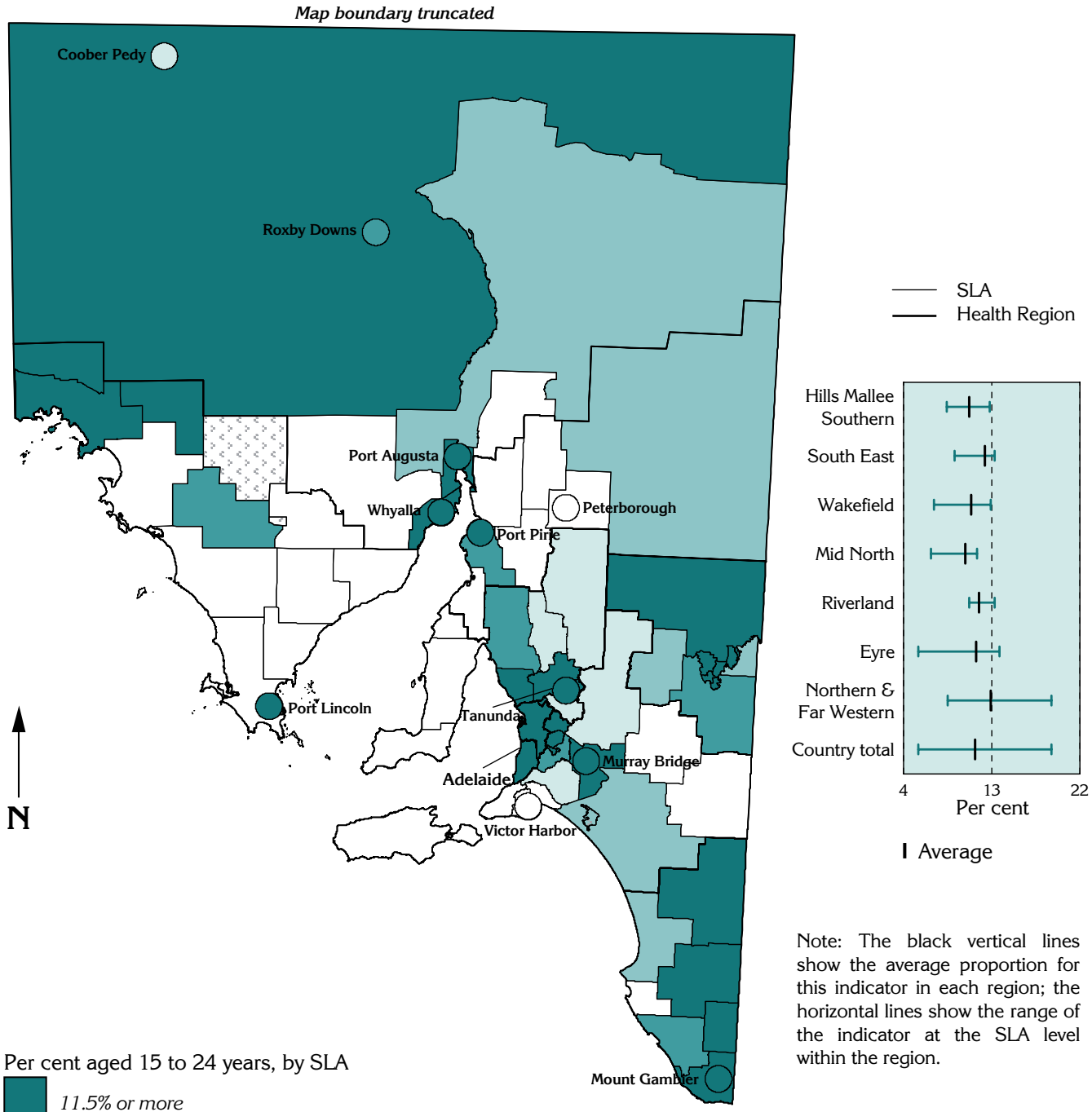
In the **Wakefield** region, 10.9% of the population were aged 15 to 24 years, a total of 10,361 young people. Within the region, there were high proportions of young people in Gawler (12.9%, 2,306 young people), Barossa - Angaston (12.6%, 938) and in Light (12.3%, 1,266).

The largest numbers of young people in a region were located in the **Hills Mallee Southern** region of country South Australia, with 11,630 young people, representing 10.7% of the population. In the SLA of Mount Barker – Central, there were 1,932 young people (12.8%) and in Adelaide Hills Balance, 1,009 young people (12.1%).

ASGC Remoteness classification

The proportion of the population aged 15 to 24 years decreased steadily over the first four remoteness areas (from 13.7% in the Major Cities areas to 10.8% in the Remote areas), before increasing in the Very Remote areas (to 13.7%).

Map 4.6
Young people aged 15 to 24 years, South Australia, 2001



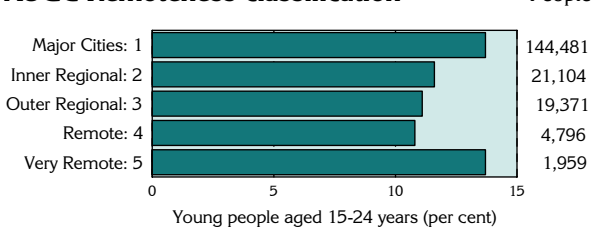
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent aged 15 to 24 years, by SLA

- *11.5% or more*
- *11.0 to 11.4%*
- *10.5 to 10.9%*
- *10.0 to 10.4%*
- *fewer than 10.0%*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100*

ASGC Remoteness classification



Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

People aged 65 years and over, 2001

Australia is an ageing society, brought about in part by reduced mortality rates at older ages, a trend that has become especially evident over the past two to three decades. Reduced mortality is often associated with increased morbidity, and the incidence of an older population is likely to indicate areas where increased health services will be required.

In the last four Censuses, the proportion of the population aged 65 years and over in South Australia has increased substantially, rising from 11.7% in 1986 to 14.6% in 2001 (Table 4.16). The proportion of older people increased at a greater rate in country areas (up by 33.3%) than in Metropolitan Adelaide (22.5%). These proportions, currently the highest in Australia, are projected to continue to increase, and to remain among the nation's highest (ABS 2003). While the overall population of South Australia saw a growth of 9.0% between 1986 and 2001, half (49.5%) of this growth was attributable to the increase in this older population, with ramifications for service provision now and in the future. In previous census years, there has been a younger age structure in country areas compared with Metropolitan Adelaide. However, with a greater annual change in country areas, the proportions in 2001 were similar.

Table 4.16: Proportion of the population aged 65 years and over

Per cent Estimated Resident Population

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	12.1	13.2	14.2	14.8	22.5
Country	10.6	12.0	13.4	14.2	33.3
South Australia	11.7	12.9	14.0	14.6	25.2

[1]**Per cent change over 15 years in the proportion of people aged 65 years and over**

Metropolitan regions

In 2001, there were 156,498 people aged 65 years and over in the metropolitan regions, 14.8% of the total metropolitan population and 72.6% of the State's older people (Table 4.17). The proportion of total growth in the metropolitan regions attributable to the increasing population aged 65 and above was 44.5%.

The main concentrations of older people in the metropolitan regions are in the inner and middle suburbs, with an above-average proportion in the outer north, in Playford-Elizabeth (Map 4.7). Although the distribution pattern of the largest numbers of older people was slightly different, the trend of settlement along the metropolitan coastal SLAs was still apparent, with smaller numbers in the inner suburbs.

There was no consistent evidence in the correlation analysis of an association at the SLA level between high proportions of people aged 65 years and over and socioeconomic status. There was, however, a strong association between this population group and low TFRs, low proportions of children and high proportions of dwellings without a motor vehicle (Table 8.1).

Central Northern Adelaide

The inner suburbs with the highest proportions of people aged 65 years and over were Norwood Payneham St Peters - East (23.1%), West Torrens - West (22.6%), Campbelltown - West (21.9%), Walkerville (21.3%), Port Adelaide Enfield - Inner (20.6%), Charles Sturt - Inner East (19.9%), Charles Sturt - Inner West (19.2%), and Burnside - South-West (19.4%), and - North-East (19.2%).

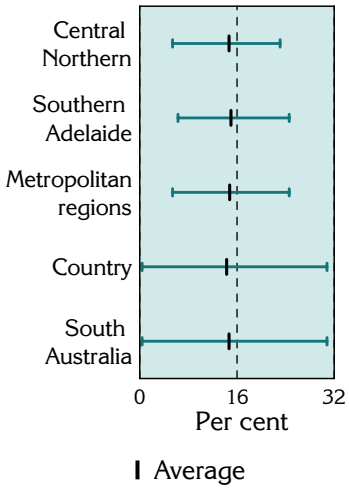
The largest numbers of people aged 65 years and over were distributed in a similar pattern with high numbers in West Torrens - West (6,191 people), Charles Sturt - Coastal (5,707), Charles Sturt - Inner West (4,605), Port Adelaide Enfield - East (4,556), Tea Tree Gully - South (4,459), Playford - Elizabeth (4,383), Port Adelaide Enfield - Port (4,365), Port Adelaide Enfield - Coast (4,330), Charles Sturt - Inner East (4,150), Campbelltown - West (4,086) and Charles Sturt - North-East (4,062).

Southern Adelaide

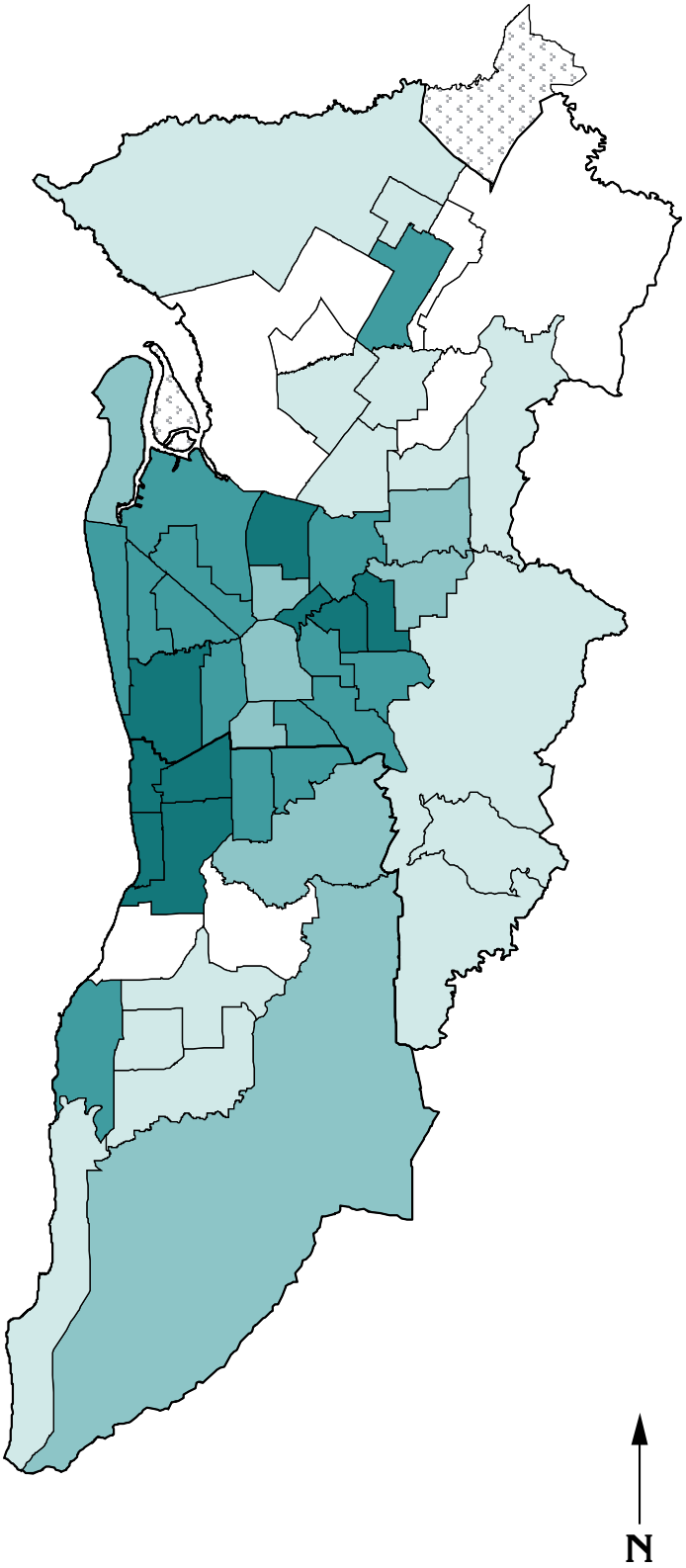
The greatest proportions of older people in the metropolitan regions, where almost a quarter of the population was aged 65 years and over, were located in Holdfast Bay - South (24.6%) and - North (24.3%). There were also high proportions in the SLAs of Marion - North (23.2%), Marion - Central (21.1%), Mitcham - North-East (19.8%) and Mitcham - West (19.2%).

In the Southern Region, there were large numbers of people aged 65 years and over in Marion - Central (6,763 people), Marion - North (5,756), Holdfast Bay - North (4,506) and Mitcham - West (4,207).

Map 4.7
People aged 65 years and over, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent aged 65 years and over, by SLA

- *20.0% or more*
- *16.0 to 19.9%*
- *12.0 to 15.9%*
- *8.0 to 11.9%*
- *fewer than 8.0%*
- *data not mapped**

*Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

Almost two thirds (66.1%) of the growth in the total population in country areas from 1996 to 2001 was due to growth in the aged population (compared with 44.5% in the metropolitan regions). This is partly as result of the movement of younger age groups into metropolitan regions to take advantage of greater work and educational opportunities, and of the tendency for people to retire to peri-urban areas.

In 2001, there were 59,105 older people living in country South Australia, 14.4% of the population aged 65 years and over (Table 4.17). The highest proportion was in **Mid North** (16.9%) and the lowest proportion was in **Northern and Far Western** (10.1%).

Table 4.17: Regional totals, people aged 65 years and over, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	16,543	15.3	7.7
Wakefield[1]	15,146	15.9	7.0
South East	7,865	12.9	3.6
Northern & Far Western	5,037	10.1	2.3
Eyre	4,480	13.6	2.1
Mid North	5,176	16.9	2.4
Riverland	4,711	14.4	2.2
Country SA	**59,105**	**14.4**	**27.4**
Central Northern	108,897	14.7	50.5
Southern	47,595	15.0	22.1
Metropolitan regions	**156,498**	**14.8**	**72.6**
South Australia	**215,603**	**14.7**	**100.0**

[1]**Gawler is included in Wakefield region**

There was no consistent evidence in the correlation analysis of an association at the SLA level between high proportions of people aged 65 years and over and socioeconomic status (Table 8.2).

The Regions

Mid North had the highest proportion of people aged 65 years and over (16.9%, 5,176 people), and high proportions in the SLAs of Barunga West (21.8%, 559), Orroroo/Carrieton (20.7%, 206) and Peterborough (18.2%, 362). The largest number at this age was in Port Pirie - City (2,181 people, 16.0%).

Hills Mallee Southern region had 15.3% of the population in this age group (16,543 people) and the largest proportion and number of older people in a country SLA living in Victor Harbor (30.8%, 3,311 people). Alexandrina - Coastal also had a high proportion (21.5%, 2,028), with large numbers of older people located in Murray Bridge (2,427, 14.6%) and Mount Barker - Central (1,688, 11.2%).

In **Wakefield**, 15.9% (15,146 people) of the population were aged 65 years and over. There were high proportions in the SLAs of Yorke Peninsula - South (22.5%, 882 people), Yorke Peninsula - North (22.0%, 1,608), Copper Coast (21.7%, 2,317), and Barossa - Tanunda (18.1%, 798). Large numbers of this population group were also living in Gawler (2,816 people, 15.7%), Clare and Gilbert Valleys (1,286, 15.9%), Barossa - Angaston (1,206, 16.2%), and Light (1,138, 11.1%).

In the **Riverland**, 14.4% of the population were aged 65 years and over (4,711 people); however, only Berri and Barmera - Barmera (17.8%, 761) had a high proportion in this age group. Relatively large numbers of people at these ages were living in Renmark Paringa - Renmark (1,134 people, 14.5%), Loxton Waikerie - East (1,072, 14.8%), and Berri and Barmera - Berri (844, 12.4%).

The population in the **Eyre** region included 4,480 people (13.6%) aged 65 years and over. The highest proportion was in Tumby Bay (20.5%, 520 people) and the largest numbers were in Port Lincoln (1,804 people, 13.5%), Lower Eyre Peninsula (495, 12.0%) and Ceduna (343, 9.7%).

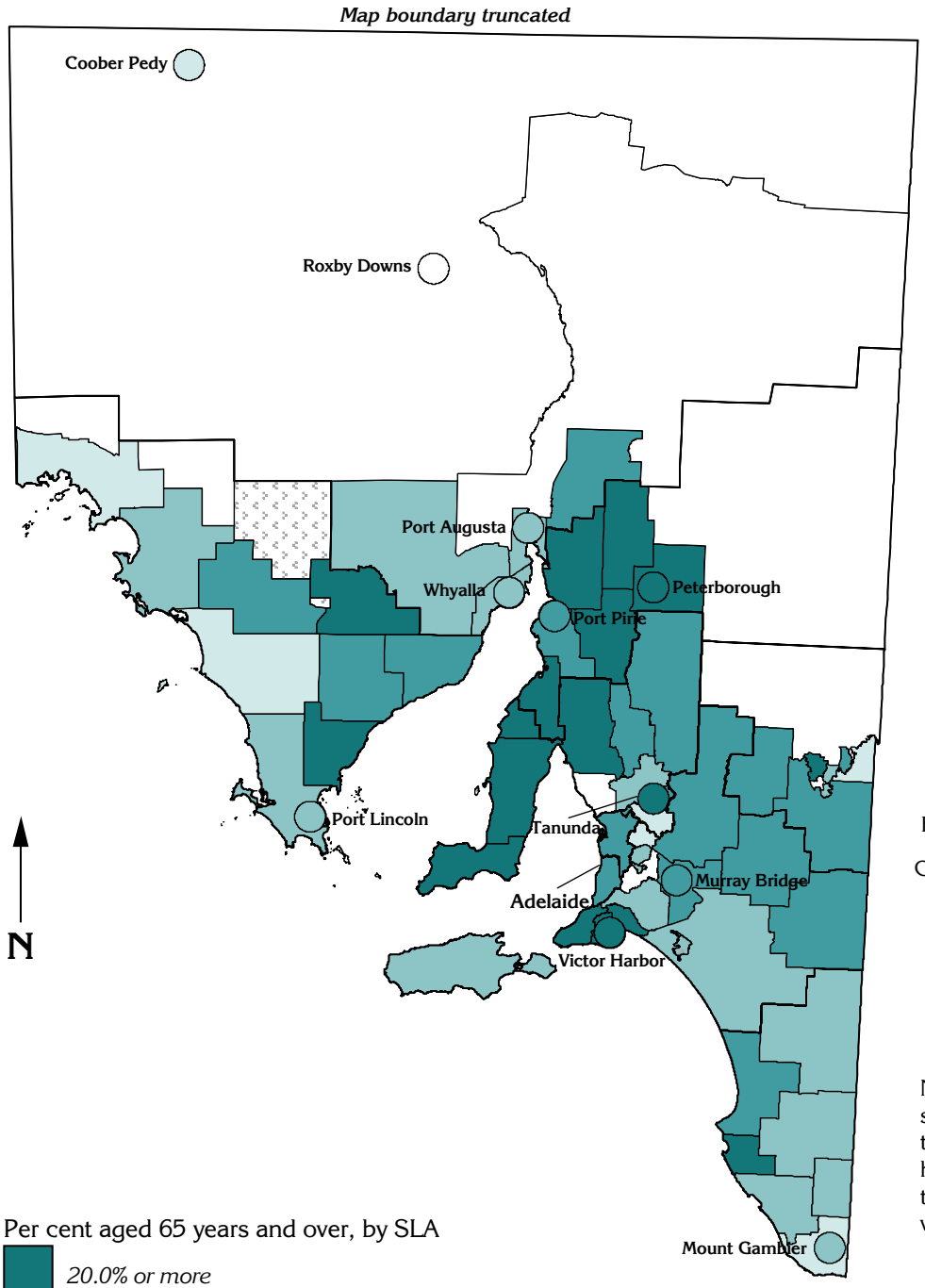
Despite a lower proportion (12.9%) in the **South East**, a number of SLAs had large numbers, including Mount Gambier (with the second largest population in this age group in country South Australia), with 3,014 people (13.2%). There were also large numbers in Wattle Range - West (1,214 people, 13.9%), and Naracoorte and Lucindale (1,051, 13.2%).

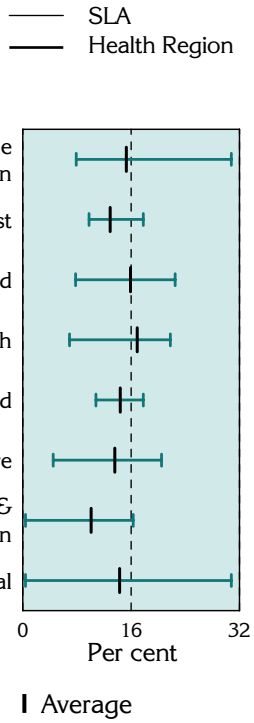
The **Northern and Far Western** region had some of the lowest proportions of older people, where Indigenous people, a population with a younger age structure due to high mortality rates, make up a significant proportion of the population. Low proportions were recorded in Unincorporated Flinders Ranges (4.1%, 51 people) and Unincorporated Far North (4.6%, 272). There was a very low proportion in the mining town of Roxby Downs (0.4%, 15 people). In contrast, Whyalla had the third largest SLA population of older people in country South Australia, with 2,605 people (12.1%).

ASGC Remoteness classification

The highest proportions of people aged 65 years and over were found in the Major Cities and Outer Regional areas, both with 14.9% of the population. The Very Remote areas had the lowest proportion (8.2%). These results indicate the value that older people place on access to health, welfare and other services, which are largely located in the more accessible areas of the State.

Map 4.8
People aged 65 years and over, South Australia, 2001





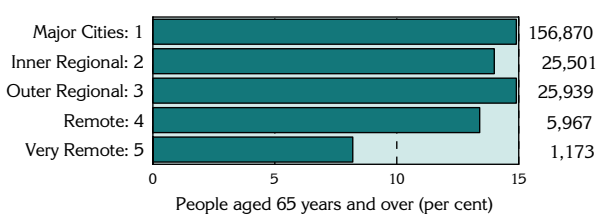
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent aged 65 years and over, by SLA

- *20.0% or more*
- *16.0 to 19.9%*
- *12.0 to 15.9%*
- *8.0 to 11.9%*
- *fewer than 8.0%*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100*

ASGC Remoteness classification



Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Total fertility rate, 2000 to 2002

The total fertility rate (TFR) measures the production of children and is calculated from details of the age of the female population, the number of births and the age of the mother at birth. SLAs recording fewer than 20 births were excluded from the analysis.

The TFR in country areas of South Australia is higher than in Metropolitan Adelaide, and rates in both of these areas have declined by similar amounts (Table 4.18). Aboriginal and Torres Strait Islander women have higher TFRs than other South Australian women, with rates of 3.16 in Metropolitan Adelaide, 2.86 in country South Australia and 2.99 in South Australia as a whole.

Table 4.18: Total fertility rate[1]

Section of State	1990-92	1992-95	2000-02	Per cent change[2]
Metropolitan Adelaide (incl. Gawler)	1.68	1.64	1.62	-3.6
Country	2.12	2.12	2.04	-3.8
South Australia	1.78	1.75	1.70	-4.5

[1]**TFRs are the annual average over the years shown**
[2]**Per cent change over 10 years in the TFR**

Metropolitan regions

There were 37,479 births in the metropolitan regions over the period from 2000 to 2002, which equates to 12,493 births per annum and a total fertility rate (TFR) of 1.61 (Table 4.19).

The highest TFRs were recorded in a number of outer northern SLAs, with relatively high rates in the outer south and in some north-western and outer southern SLAs (Map 4.9). This geographic distribution is consistent with that in Maps 4.1 and 4.2, of the 0 to 4 and 5 to 14 year age groups.

The correlation analysis showed a very strong association with unskilled and semi-skilled workers, and a strong association with single parent, jobless families, the Indigenous population, and unemployment. There were also strong inverse correlations with female labour force participation, managers and administrators, and professionals, PAS and SAS scores (and very strong with PES scores), high income families, 16 year olds in full-time education, the population aged 65 years and over and people of non-English speaking background resident in Australia for less than five years. These results, together with the strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between high total fertility rates and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

The TFR for the Central Northern region was 1.61 (just below that for the whole of the metropolitan regions), with 26,850 births over the period from 2000 to 2002.

The highest TFRs in the metropolitan regions were in Playford - West Central (a TFR of 2.63, 744 births), Playford - Elizabeth (2.27, 1,172), Playford - Hills (2.08, 111), Playford - East Central (2.08, 928), Salisbury - Inner North (1.99, 1,172), Port Adelaide Enfield - Inner (1.93, 802), Salisbury Balance (1.89, 271), Port Adelaide Enfield - Port (1.89, 1,015) and Salisbury - Central (1.81, 1,096).

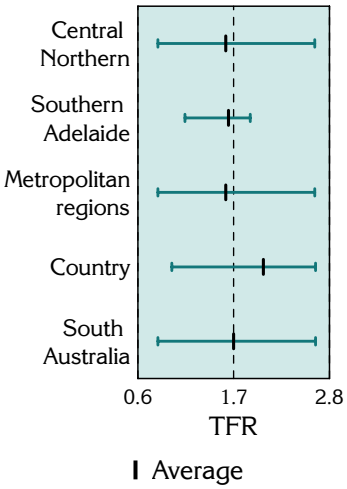
The SLAs with the lowest TFRs in this region were Adelaide (a TFR of 0.73, 247 births), Unley - West (1.26, 515), Norwood Payneham St Peters - West (1.26, 558), Burnside - North-East (1.31, 492), Charles Sturt - Coastal (1.32, 775), Unley - East (1.37, 638), Norwood Payneham St Peters - East (1.39, 506), Prospect (1.45, 701) and West Torrens - East (1.45, 896).

Southern Adelaide

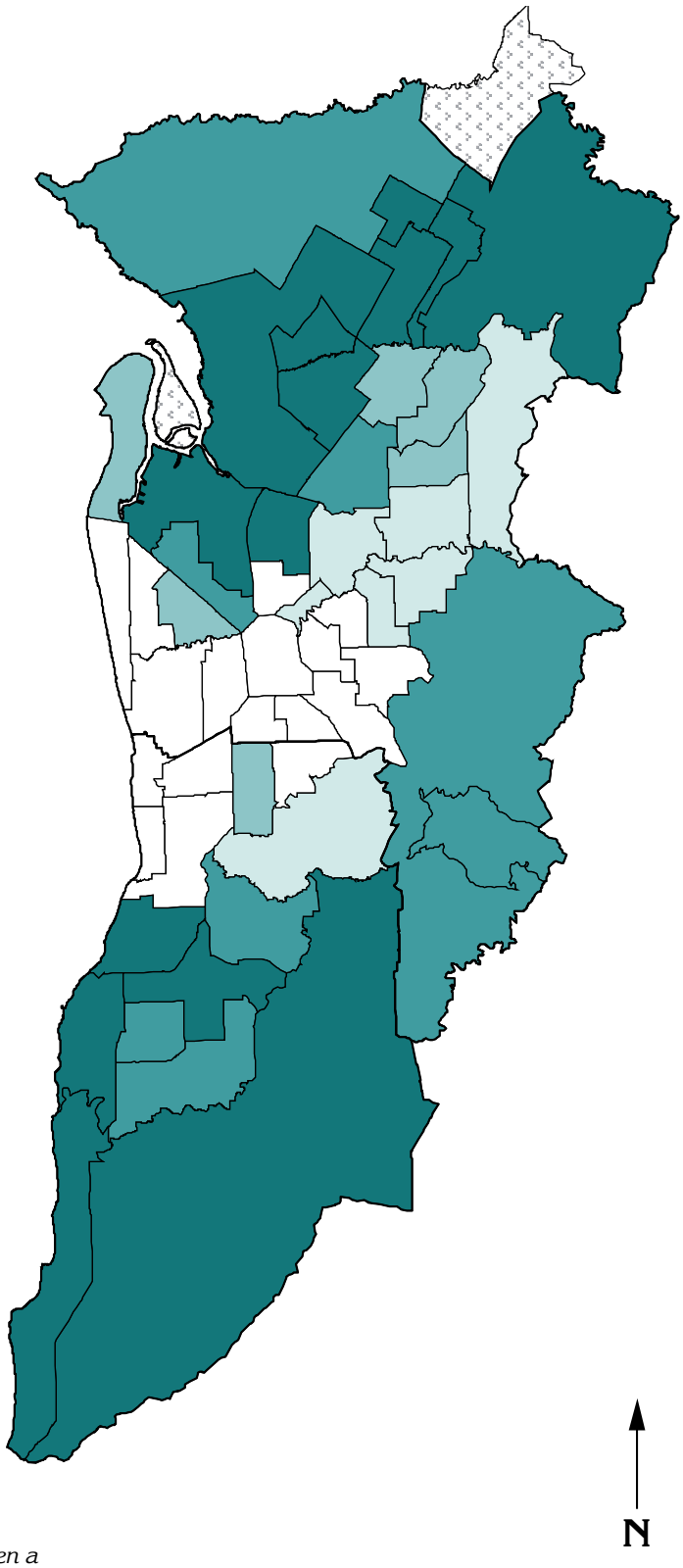
There was a similar TFR in the Southern region, of 1.64, with 10,613 births over the period from 2000 to 2002. The highest TFRs in this region were in the City of Onkaparinga in Onkaparinga - Woodcroft (a TFR of 1.89, 1,457 births), - South Coast (1.88, 872), - North Coast (1.85, 637), - Hills (1.84, 345), - Morphett (1.79, 957), - Reservoir (1.75, 829), and Marion - South (1.83, 752).

There were low TFRs recorded for the SLAs of Holdfast Bay - North (1.14, 427 births), - South (1.31, 334), Mitcham - North-East (1.32, 352), and Marion - Central (1.44, 917).

Map 4.9
Total fertility rate, metropolitan regions, 2000 to 2002



Note: The black vertical lines show the average TFR for this indicator in each region; the horizontal lines the range of the indicator at the SLA level within the region.



SLA
Health Region

Total fertility rate*, by SLA

- *1.80 or more*
- *1.70 to 1.79*
- *1.60 to 1.69*
- *1.50 to 1.59*
- *below 1.50*
- *data not mapped#*

*The total fertility rate is a measure of the number of children a woman can expect to bear in her lifetime: it was derived by indirect standardisation, based on SA totals

#Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map

Source: Calculated from births data from the ABS ***Details of map boundaries are in Appendix 1.2***

Total fertility rate, 2000 to 2002

Country regions

There were 15,295 births in country South Australia over the period from 2000 to 2002, which equates to 5,098 births per annum, and a TFR of 2.04.

The regions with the highest TFRs were **Eyre** (2.26, 1,381 births) and **Mid North** (2.18, 1,116) (Table 4.19 and graph opposite). The low TFR in **Northern and Far Western** is surprising given the high proportion of Aboriginal and Torres Strait Islander people in this region, and the higher TFR of 2.86 recorded for Aboriginal and Torres Strait Islander women in country South Australia as a whole. The low TFRs in several of the SLAs, in particular Unincorporated Far North with 41.4% of its population being of Aboriginal and Torres Strait Islander origin, are likely to reflect poor quality of data, with the births either not recorded or, most likely, recorded but not with the correct area of address.

The highest TFRs were mapped on the Eyre and Yorke Peninsulas, and in parts of the west coast and the south east (Map 4.10).

Table 4.19: Regional totals, total fertility rate, 2000 to 2002

Region	Births	TFR	% of State
Hills Mallee Southern	3,730	1.95	7.1
Wakefield[1]	3,165	1.91	6.0
South East	2,504	2.08	4.7
Northern & Far Western	2,093	1.96	4.0
Eyre	1,381	2.26	2.6
Mid North	1,116	2.18	2.1
Riverland	1,296	2.12	2.5
Country SA	**15,295**	**2.04**	**29.0**
Central Northern	26,850	1.61	50.9
Southern	10,613	1.64	20.1
Metropolitan regions	**37,479**	**1.61**	**71.0**
South Australia	**52,774**	**1.70**	**100.0**

[1]**Gawler is included in Wakefield region**

There was no consistent evidence in the correlation analysis of an association at the SLA level between high proportions of TFR and socioeconomic status (Table 8.2).

The Regions

The highest regional TFR in country South Australia was in **Eyre**, a TFR of 2.26 (1,381 births). The highest rates within this region were in Ceduna (a TFR of 2.64, 192 births), Lower Eyre Peninsula (2.60, 163), Elliston (2.56, 59), Le Hunte (2.37, 61), Cleve (2.29, 73), Franklin Harbor (2.24, 41) and Port Lincoln (2.21, 611).

The **Mid North** had a TFR of 2.18, with the highest rates in the SLAs of Port Pirie Balance (a TFR of 2.54, 126 births), Barunga West (2.38, 79), Port Pirie - City (2.16, 571), Northern Areas (2.09, 164) and Mount Remarkable (2.08, 85).

There was a TFR of 2.12 in the **Riverland**. Within this region, there were high rates in the SLAs of Renmark Paringa - Paringa (a TFR of 2.29, 73 births), Berri and Barmera - Barmera (2.24, 154), Loxton Waikerie - West (2.22, 180), Berri and Barmera - Berri (2.19, 304), Renmark Paringa - Renmark (2.04, 314) and Loxton Waikerie - East (2.02, 269).

The **South East** had a TFR of 2.08 in 2000 to 2002. There were high rates in the SLAs of Robe (a TFR of 2.47, 56 births), Tatiara (2.28, 292), Wattle Range - East (2.22, 144), Wattle Range - West (2.08, 337), Mount Gambier (2.08, 1,044) and Naracoorte and Lucindale (2.03, 323).

There was a TFR of 1.96 in the **Northern and Far Western** region. Within this region, there were high rates in the SLAs of Roxby Downs (a TFR of 2.51, 257 births), Flinders Ranges (2.38, 61) and Unincorporated Flinders Ranges (1.88, 57).

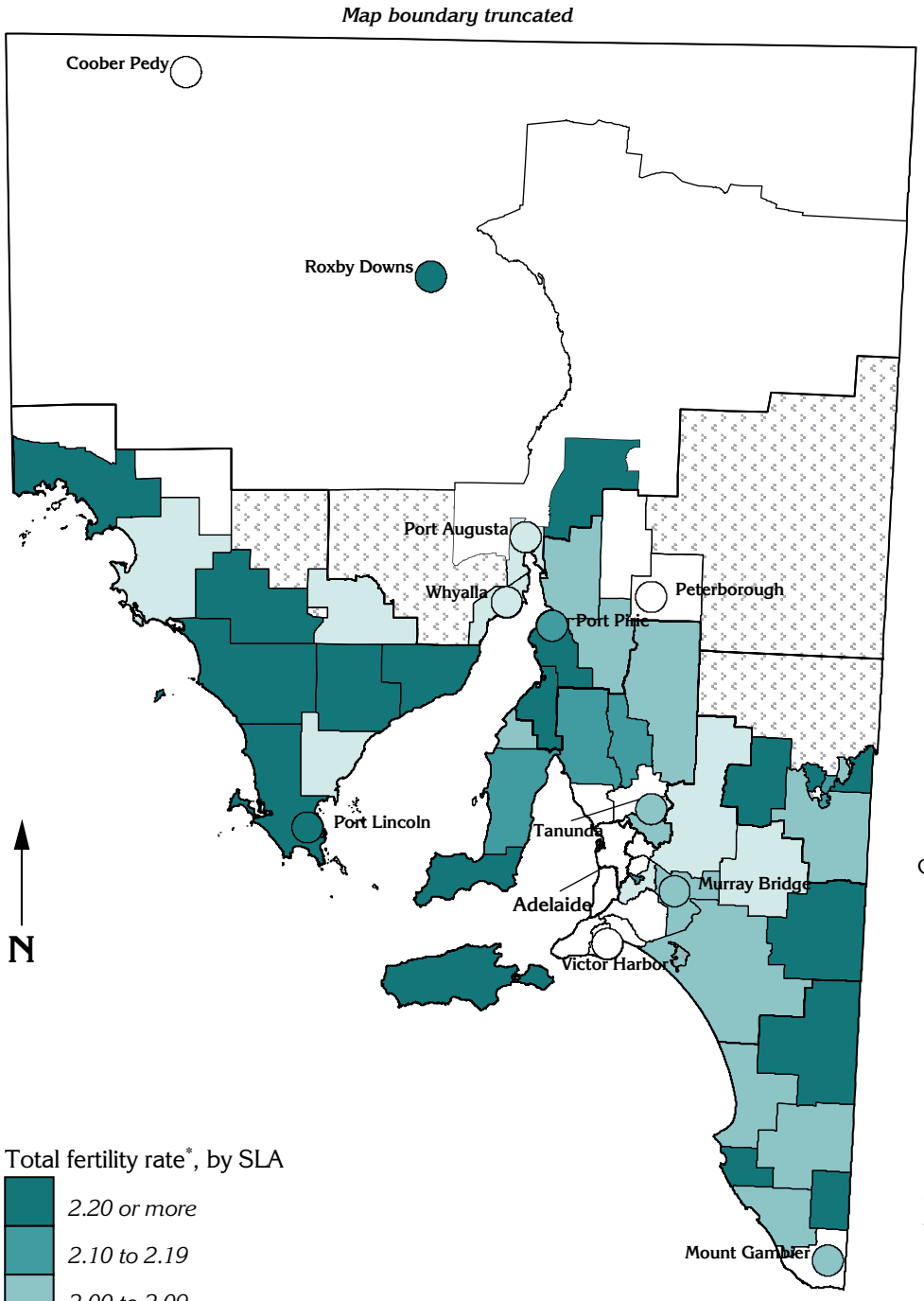
Hills Mallee Southern had a TFR of 1.95, with high rates in the SLAs of Kangaroo Island (a TFR of 2.29, 159 births), Southern Mallee (2.23, 83), Mount Barker - Central (2.12, 706), Murray Bridge (2.06, 656) and The Coorong (2.05, 202).

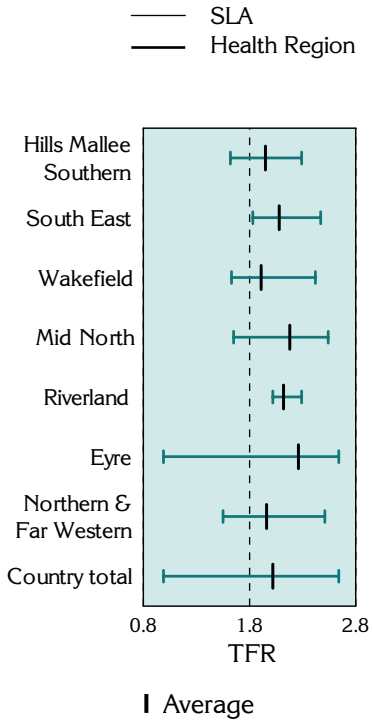
There was a TFR of 1.91 in the **Wakefield** region. SLAs within this region with a high TFR included Yorke Peninsula - South (a TFR of 2.42, 121 births), Yorke Peninsula - North (2.19, 199), Wakefield (2.15, 226), Clare and Gilbert Valleys (2.12, 292), Barossa - Tanunda (2.06, 166) and Copper Coast (2.01, 316).

ASGC Remoteness classification

The total fertility rate increases markedly, from a low 1.61 in the Major Cities category to 2.24 in the Remote areas, before decreasing to 1.91 in the Very Remote class.

Map 4.10
Total fertility rate, South Australia, 2000 to 2002





Note: The black vertical lines show the average TFR for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

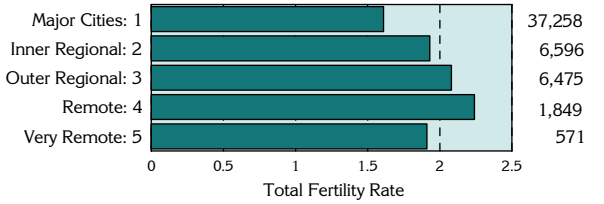
Total fertility rate*, by SLA

- *2.20 or more*
- *2.10 to 2.19*
- *2.00 to 2.09*
- *1.90 to 1.99*
- *below 1.90*
- *data not mapped#*

*The total fertility rate is a measure of the number of children a woman can expect to bear in her lifetime: it was derived by indirect standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100 or there were fewer than 5 births

ASGC Remoteness classification



Source: Calculated from births data from the ABS

Details of map boundaries are in Appendix 1.2

Single parent families, 2001

The majority of single parent families are characterised by poverty and hardship, have poorer health and are major users of publicly-funded services. Details of their location are, therefore, of importance to policy makers and those providing health, education, welfare, housing and transport services.

With some two thirds of single parents with dependent children under 15 years of age having no job (67.5% in Metropolitan Adelaide, 64.3% in country South Australia and 66.7% in South Australia), they are among the most reliant on government support. Further, they are often severely restricted in their access to housing and are much more heavily concentrated in rented accommodation than other family types; the reduction in public rental housing stock at a time when the number of these families is increasing is of major concern (Tables 4.8 and 4.9, page 61). Access to employment, training and other opportunities are also issues for these families in outer suburban areas and for those in country towns, where such prospects are limited for single parents and school leavers alike.

Since 1986, the proportion of single parent families has increased in South Australia from 7.6% to 11.0% in 2001 (Table 4.20). Although it is showing a slightly smaller change (43.5% compared with 48.5%), the proportion of single parent families in Metropolitan Adelaide has been consistently higher than in country areas.

Table 4.20: Single parent families

Per cent

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	8.0	9.4	10.4	11.5	43.3
Country	6.5	7.6	8.4	9.7	48.5
South Australia	7.6	8.9	9.9	11.0	44.6

[1]**Per cent change over 15 years in the proportion of single parent families**

Metropolitan regions

In 2001, there were 32,772 single parent families in the metropolitan regions, representing 11.5% of all families (Table 4.21). The majority of SLAs with high proportions and large numbers of single parent families were located in the north-western and outer northern suburbs, and in the south along the coast (Map 4.11). The lowest proportions cover an area running from the city, to the east and south-east, then to the north.

The correlation analysis showed very strong associations at the SLA level with the variables for jobless families, the Indigenous population, unskilled and semi-skilled workers, low income families, unemployment and public rental housing. Very strong inverse correlations were recorded with female labour force participation, high income families, full-time educational participation, and managers and administrators, and professionals. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between single parent families and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

The highest proportion of single parent families, a quarter of all families (24.7%), was in Playford - West Central. Very high proportions were also living in Playford - Elizabeth (21.7%), Port Adelaide Enfield - Port (17.5%), Salisbury - Inner North (17.0%), Port Adelaide Enfield - Inner (16.8%), and Salisbury - Central (15.5%). Playford - Elizabeth had the largest number, with 1,467 single parent families, followed by Salisbury - South East (1,131), Salisbury - Central (1,119), Port Adelaide Enfield - Port (1,113) and Salisbury - Inner North (1,110).

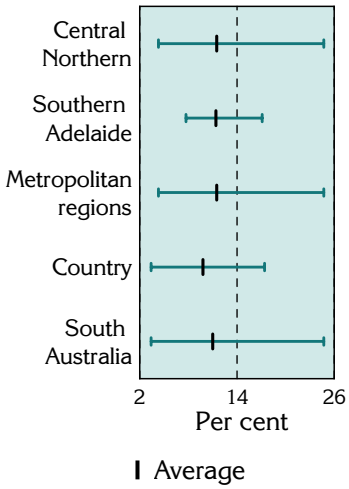
The SLAs with the lowest proportions in Central Northern include Playford - Hills (4.3%), Tea Tree Gully Hills (7.1%), Adelaide Hills - Ranges (6.6%), Walkerville (6.8%), Adelaide (7.9%), and Burnside - North-East (7.3%) and - South-West (7.7%).

Southern Adelaide

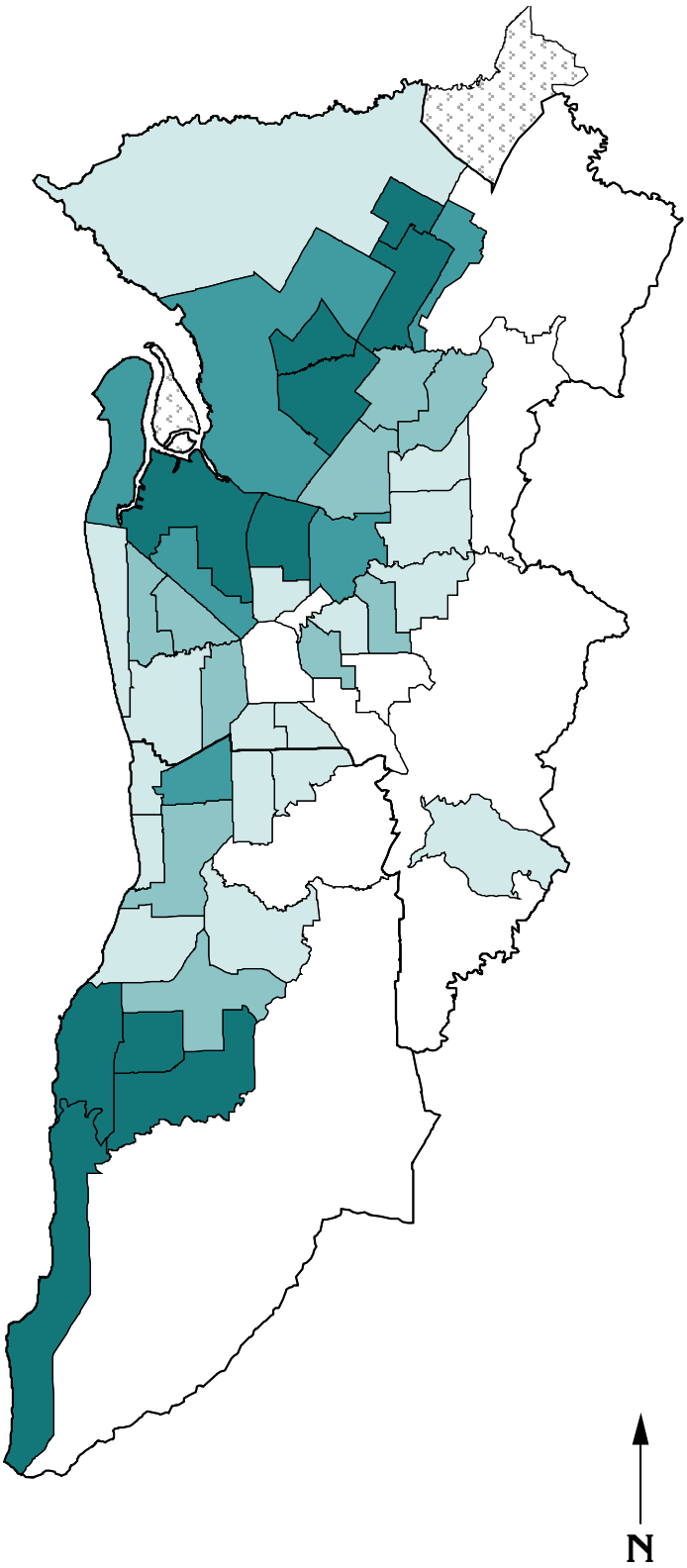
In this region, the SLAs with the highest proportions of single parent families were Onkaparinga - Hackham (17.1%), Onkaparinga - North Coast (16.9%), - South Coast (15.4%), and - Morphett (15.0%). The largest numbers of single parent families were located in Marion - Central (1,044 families), Onkaparinga - Woodcroft (1,021) and Onkaparinga - Morphett (1,000).

The SLAs of Mitcham - Hills (7.9%) and Onkaparinga - Hills (7.7%) had the lowest proportions of single parent families in Southern Adelaide.

Map 4.11
Single parent families, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent single parent families, by SLA

- *14.0% or more*
- *12.0 to 13.9%*
- *10.0 to 11.9%*
- *8.0 to 9.9%*
- *fewer than 8.0%*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

There were 10,946 single parent families in country South Australia in 2001, representing 9.8% of all families.

Although the proportion of single parent families in country South Australia is lower than in the metropolitan regions (9.8% of families), significant concentrations of single parent families occur in the major country towns. The highest proportion was in **Northern and Far Western** (14.1%) and the lowest was in **Wakefield** (8.7%) (Table 4.21 and graph opposite).

The highest proportions of single parent families across the State were located in the major urban centres (where there is a significant stock of public rental housing) and in areas with high proportions of Aboriginal people and Torres Strait Islanders such as Unincorporated Riverland and Unincorporated Far North (Map 4.12). This can place a substantial burden on the often limited, publicly-funded services in country areas.

Table 4.21: Regional totals, single parent families, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	2,913	9.7	6.7
Wakefield[1]	2,319	8.7	5.3
South East	1,467	8.9	3.4
Northern & Far Western	1,758	14.1	4.0
Eyre	808	9.3	1.8
Mid North	842	10.1	1.9
Riverland	839	9.3	1.9
Country SA	**10,946**	**9.8**	**25.0**
Central Northern	22,888	11.5	52.4
Southern	9,884	11.4	22.6
Metropolitan regions	**32,772**	**11.5**	**75.0**
South Australia	**43,718**	**11.0**	**100.0**

[1]**Gawler is included in Wakefield region**

The correlation analysis showed a very strong association with the variable for dwellings with no motor vehicle, and strong associations with jobless families, unemployment, public rental housing and Indigenous Australians. Strong inverse correlations were recorded with female labour force participation and managers and administrators, and professionals. These results, together with the strong inverse correlation with the Index of Relative Socio-Economic Disadvantage score, indicate an association at the SLA level between single parent families and socioeconomic disadvantage (Table 8.2).

The Regions

In country South Australia, the highest proportion of single parent families were living in Unincorporated Far North (17.4% of all families, 176 single parent families) and the largest number were living in Whyalla (902 families, 15.7%). Elsewhere in the **Northern and Far Western** region, there were high proportions in Port Augusta (14.2%, 487) and Coober Pedy (12.0%, 63).

In the **Mid North** region, the SLAs of Peterborough (15.4%, 80 families) and Port Pirie - City (12.8%, 480) had high proportions of single parent families.

There were high proportions as well as notable numbers of these families in the **Hills Mallee Southern** SLAs of Mount Barker - Central (14.5%, 598) and Murray Bridge (12.7%, 559).

In the **Riverland**, 9.3% of families were single parent families (808). Single parent families represented 16.3% of all families in Unincorporated Riverland (seven families). Other SLAs in the Riverland had larger numbers, including Renmark Paringa - Renmark (230 families, 10.8%) and Berri and Barmera - Berri (202, 10.9%).

Port Lincoln had a high proportion (14.3%) as well as a large number (493) of single parent families. The **Eyre** region also had some of the lowest proportions of these families, including in the SLAs of Franklin Harbor (3.4%, eleven families), Kimba (3.5%, eleven), Cleve (3.6%, 18) and Le Hunt (3.8%, 15).

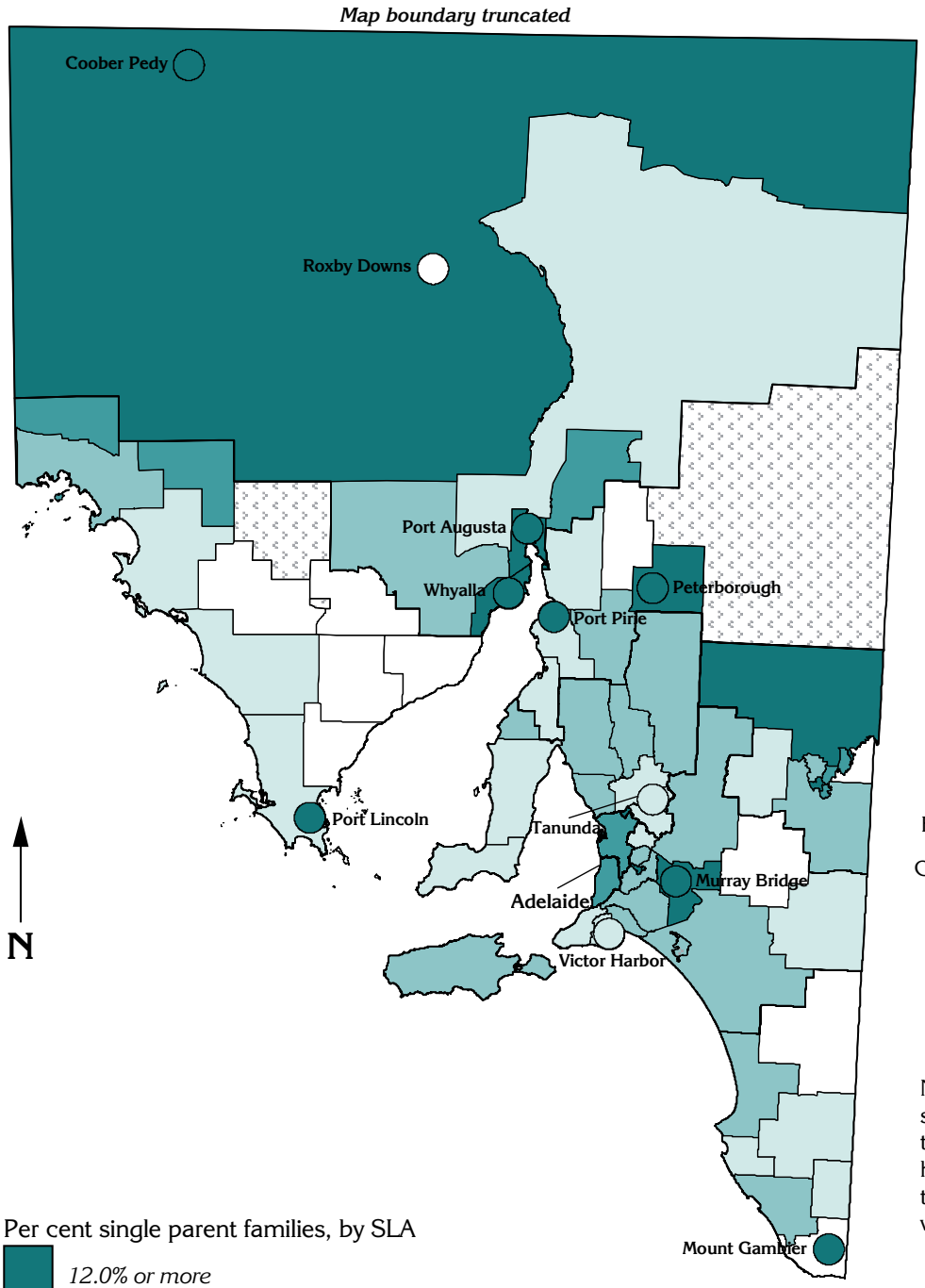
In the **South East** region, Mount Gambier recorded the second largest number of single parent families in country South Australia (773 families, 12.7% of families).

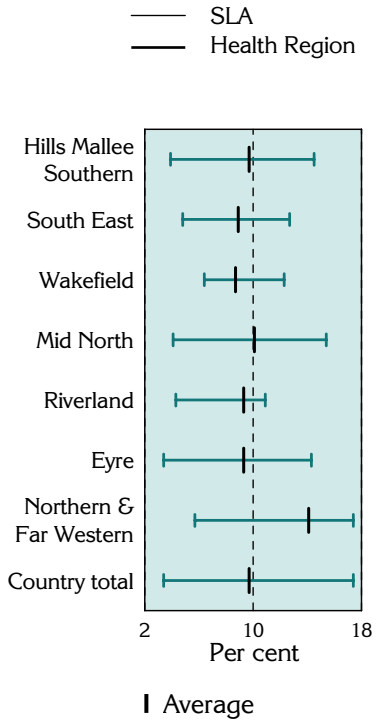
There was a high proportion of single parent families in Gawler (12.3%, 616 families) in the **Wakefield** region. There were relatively large numbers of single parent families in Copper Coast (264 families, 8.7%) and Light (207 families, 7.1%).

ASGC Remoteness classification

The number of single parent families drops off rapidly with increasing remoteness, until the sharp reversal in the Very Remote areas. The most accessible and the most remote areas had the highest proportions of single parent families, with 11.5% in the Major Cities areas and 11.0% in the Very Remote areas.

Map 4.12
Single parent families, South Australia, 2001





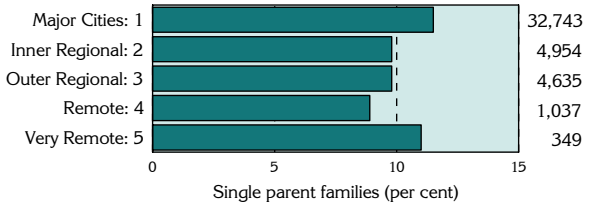
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent single parent families, by SLA

- *12.0% or more*
- *10.0 to 11.9%*
- *8.0 to 9.9%*
- *6.0 to 7.9%*
- *fewer than 6.0%*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases*

ASGC Remoteness classification



Source: Calculated on data from ABS Census 2001

Details of map boundaries are in Appendix 1.2

Low income families, 2001

Low income families comprised almost one quarter (23.8%) of all families in the State for which income details were obtained in the 2001 Census. The use of low income as a measure of poverty is compromised to an extent by the fact that it is influenced by differences in family size, age structure and housing tenure and costs. While the variable will normally capture most welfare dependent families, it will also include sizeable numbers of families for which low incomes are linked to their retirement status. However, the concentrations of low income families in areas with high proportions of people who are dependent on unemployment benefits, supporting parents' benefits, age or disability pensions suggests that many families in these areas are suffering considerable financial hardship. Those in outer suburban or country areas face additional difficulties associated with accessing a comprehensive range of services.

Over the fifteen years to 2001, the proportion of families on low incomes in South Australia has increased by 13.3% (to 23.8% of all families), despite a small decline between 1986 and 1991 (Table 4.22). The proportion of low income families has consistently been higher in country South Australia. However, the change in Metropolitan Adelaide is greater than that in the rest of the State, suggesting that the proportions will become more similar if this trend continues. Readers should note the footnote to Table 4.2 on page 54 regarding the interpretation of comparisons of low income family data over time.

Table 4.22: Low income families

Per cent

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	19.2	17.4	21.8	22.5	17.2
Country	25.9	24.9	26.2	27.3	5.3
South Australia	21.0	19.4	22.9	23.8	13.3

[1]**Per cent change over 15 years in the proportion of low income families**

Metropolitan regions

In 2001, there were 64,115 families living on a low income in the metropolitan regions, representing 22.4% of all families (Table 4.23). The highest proportions of low income families were located in the north-west and southern coastal SLAs (Map 4.13)

The correlation analysis showed a very strong association at the SLA level with the variables for jobless families, unemployment, single parent families, public rental housing dwellings, the Indigenous population, unskilled and semi-skilled workers and a strong correlation with dwellings with no motor vehicle. Very strong inverse correlations were recorded with high income families, female labour force participation, full-time educational participation and managers and administrators, and professionals. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage score, suggest an association at the SLA level between high proportions of low income families and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

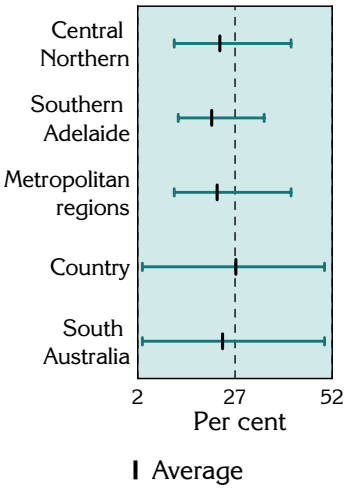
The highest proportions of families living on a low income were located in the Central Northern region in Playford - Elizabeth (41.4%, 2,794 families), Playford - West Central (41.0%, 1,363), Port Adelaide Enfield - Port (37.6%, 2,388) and - Inner (35.1%, 1,760), Charles Sturt - North-East (28.6%, 1,842) and - Inner West (28.4%, 1,917), Campbelltown - West (28.5%, 1,464), and Salisbury - Central (28.0%, 2,025).

There were also large numbers of families living on a low income in Salisbury - South-East (2,404), Port Adelaide Enfield - East (2,000), Port Adelaide Enfield - Coast (1,874) and Tea Tree Gully - South (1,865).

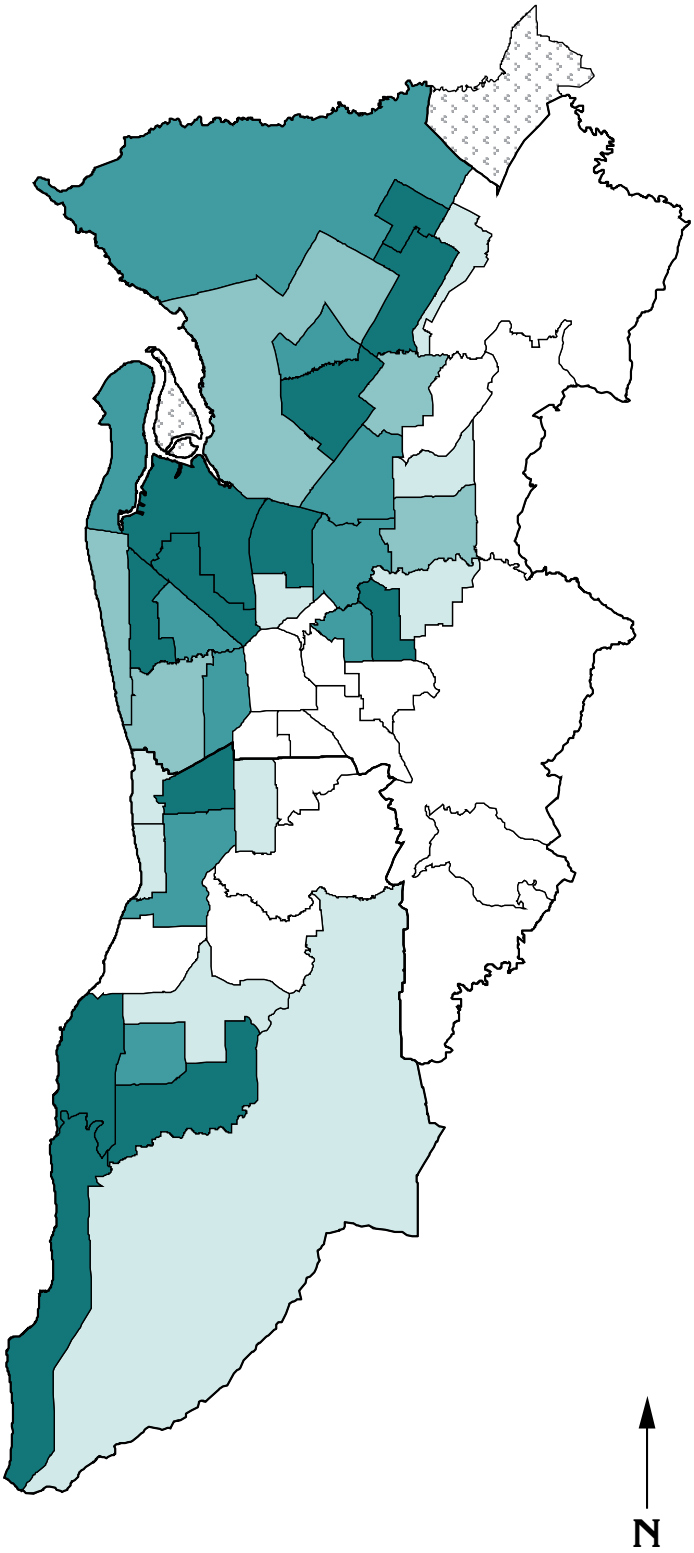
Southern Adelaide

In the south, there were high proportions of low income families in Onkaparinga - North Coast (34.5%, 1,665 families), - South Coast (28.7%, 1,836), - Hackham (28.4%, 1,097), and Marion - North (28.1%, 1,804). The largest number of low income families in the south was located in Marion - Central (2,365 families, 26.4%).

Map 4.13
Low income families, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent low income families*, by SLA

- *28.0% or more*
- *24.0 to 27.9%*
- *20.0 to 23.9%*
- *16.0 to 19.9%*
- *fewer than 16.0%*
- *data not mapped#*

*Families with annual income of less than $26,000 as a percentage of all families for which an income was obtained

#Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In 2001, there were 30,365 low income families (27.2% of all families) in country South Australia. The **Mid North** region had the highest proportion (33.6% of all families) (Table 4.23 and graph opposite).

There were high proportions of low income families in many of the regions, with contrasting very low proportions in Roxby Downs, the area around Leigh Creek (Unincorporated Flinders Ranges), and the Barossa Valley and surrounding Adelaide Hills (Map 4.14). The absolute numbers of low income families in some of the towns are also significant.

Table 4.23: Regional totals, low income families, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	8,420	28.0	8.9
Wakefield[1]	7,283	27.3	7.7
South East	3,614	21.9	3.8
Northern & Far Western	3,485	28.0	3.7
Eyre	2,408	27.8	2.5
Mid North	2,809	33.6	3.0
Riverland	2,346	26.1	2.5
Country SA	**30,365**	**27.2**	**32.1**
Central Northern	45,837	23.1	48.5
Southern	18,278	21.0	19.3
Metropolitan regions	**64,115**	**22.4**	**67.9**
South Australia	**94,480**	**23.8**	**100.0**

[1]**Gawler is included in Wakefield region**

The correlation analysis showed a strong association with the variable for jobless families; there was also a very strong inverse correlation with high income families. These results, together with the strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between high proportions of low income families and socioeconomic disadvantage (Table 8.2).

The Regions

In the **Mid North**, 2,809 families were living on a low income, representing 33.6% of the 8,356 families in this region. Within this region, there were high proportions of low income families living in Peterborough (45.2%, 237 families), Barunga West (35.6%, 248) and Mount Remarkable (34.9%, 285). The majority of low income families in this region were located in Port Pirie - City (1,236 families, 33.1%).

There were 3,485 low income families in the **Northern and Far Western** region, representing 28.0% of all families. It is of note that the region had both the highest and lowest proportions of this population group (see graph opposite). In Unincorporated Whyalla, half of the 56 families in this SLA were living on a low income (50%, 28 families). There were also high proportions (and larger numbers) in Unincorporated Far North (38.6%, 392) and Coober Pedy (37.3%, 195). The largest numbers in this region were located in Whyalla (1,779 families, 31.1%) and Port Augusta (889, 26.0%).

The largest number of low income families in country South Australia was located in **Hills Mallee Southern**, with 8,420 families (28.0%). Within the region, there were high proportions of low income families in Victor Harbor (38.5%, 1,225 families), Alexandrina - Coastal (36.9%, 1,000) and Mid Murray (34.8%, 779). There were also large numbers of these families in Murray Bridge (1,397, 31.7%) and Mount Barker - Central (884, 21.4%).

In **Eyre,** there were 2,408 low income families representing 27.8% of the 8,674 families in the region. The SLAs with the largest proportions in this region represented relatively small numbers, such as Unincorporated West Coast (35.4%, 46 families) and Elliston (34.7%, 105). The largest number of low income families in this region was located in Port Lincoln (902, 26.1%).

Wakefield region had the second highest regional number of low income families (7,283), representing 27.3% of all families. Within this region, there were high proportions in the SLAs of Yorke Peninsula - South (44.3%, 493 families), Copper Coast (37.9%, 1,145), Yorke Peninsula - North (37.2%, 770) and Goyder (34.6%, 402). There were a relatively large number of low income families in Gawler (1,267 families, 25.3%)

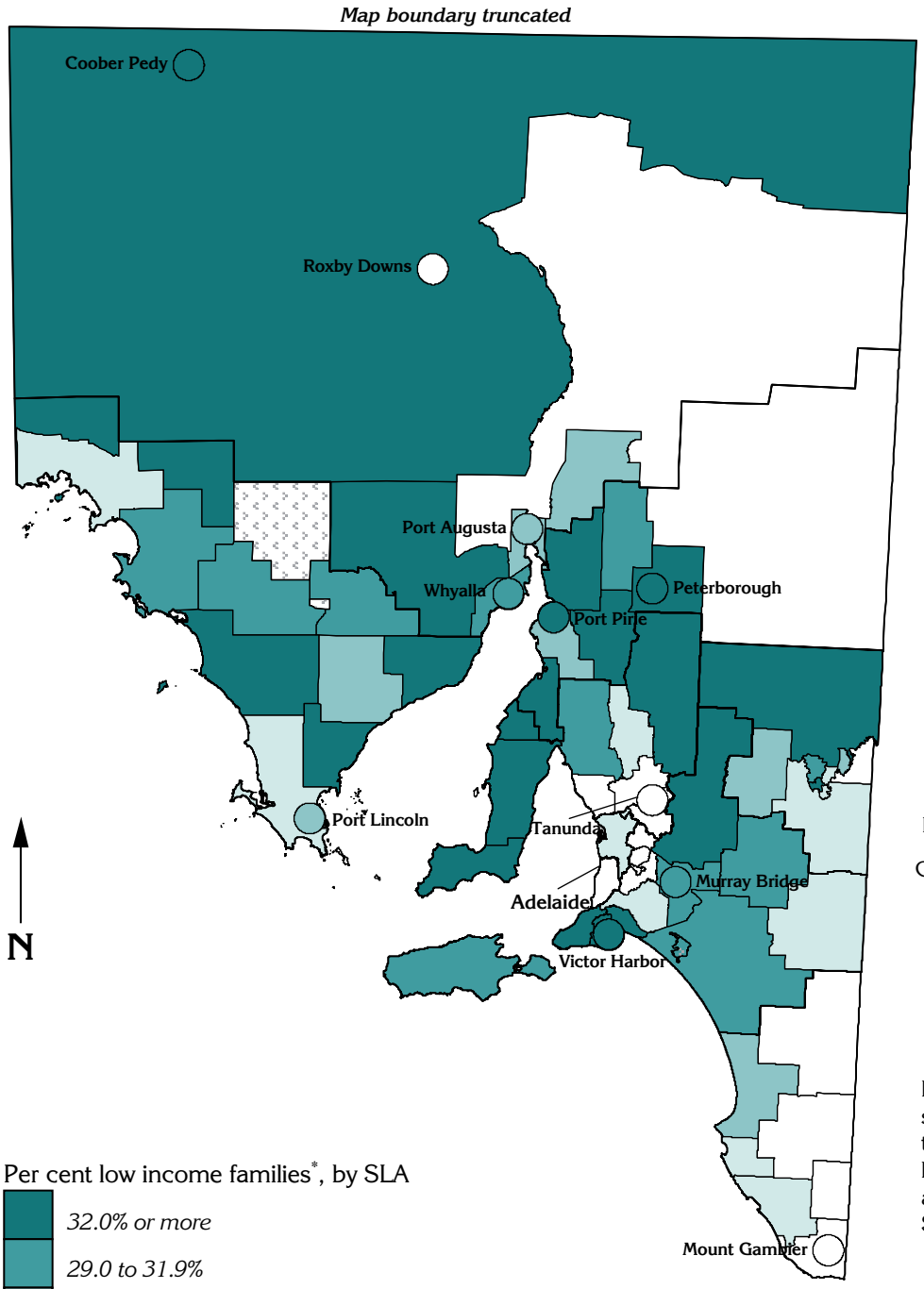
In the **Riverland,** one in four families (26.1%) was living on a low income, with 2,346 of the 8,982 families in this category. The SLAs in this region had lower proportions than the other regions. Unincorporated Riverland was the only SLA mapped in the highest range, with 40.6% representing a small number of 13 families.

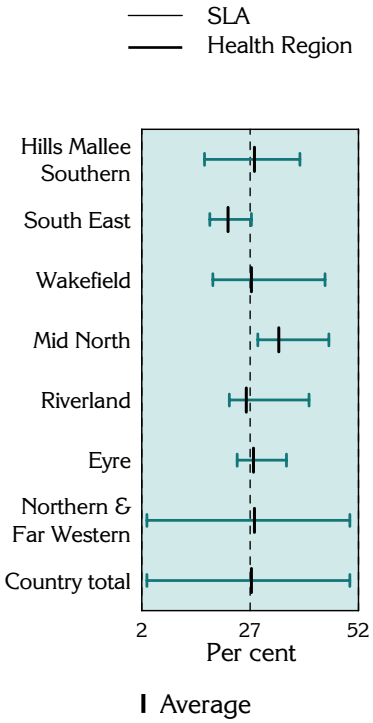
The **South East** region had the lowest proportion of low income families, 21.9% (3,614 families), with the largest number located in Mount Gambier (1,398, 22.9%); the highest and lowest proportions were in Lacepede (27.3%) and Grant (17.7%).

ASGC Remoteness classification

The lowest proportion of low income families was recorded in the Major Cities areas (22.5%), increasing to a high of 31.8% in the Very Remote areas.

Map 4.14
Low income families, South Australia, 2001





Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the highest and lowest proportions at the SLA level within the region.

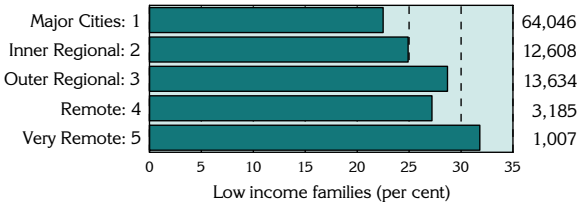
Per cent low income families*, by SLA

- *32.0% or more*
- *29.0 to 31.9%*
- *26.0 to 28.9%*
- *23.0 to 25.9%*
- *fewer than 23.0%*
- *data not mapped#*

*Families with annual income of less than $26,000 as a percentage of all families for which an income was obtained

#Data were not mapped because the SLA has a population of less than 100

ASGC Remoteness classification



Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Jobless families with children aged less than 15 years, 2001

Families with no employed parent (referred to as 'jobless' families) not only experience economic disadvantage, but may also have reduced social opportunities that can affect their health and wellbeing (see pages 1-5). Children aged less than 15 years living in families with no employed parent are particularly at risk, as the absence of a resident employed parent may impact negatively on a child's immediate material circumstances, and future health, educational and social outcomes. However, for one-parent families in this situation, a non-resident parent may provide some financial assistance, and may also be employed. The pattern of this variable when mapped demonstrates a commonality with many of the characteristics of people experiencing socioeconomic disadvantage, including poorer self-reported health, lower life expectancy and increased mortality.

Overall, 18.7% of South Australian families with children under 15 years of age were jobless in 2001 (Table 4.24). This data was not available for South Australia for earlier periods. However, the ABS has made estimates for 1991 and state that 'Over this decade, families in which no parent was employed have been a relatively stable proportion of all families with children aged less than 15 years' (around 18%) (ABS 2004).

Table 4.24: Families with children aged less than 15 years in which no parent is employed

Per cent

Section of State	2001
Metropolitan Adelaide (incl. Gawler)	19.2
Country	17.5
South Australia	18.7

Metropolitan regions

In 2001 in the metropolitan regions, there were 21,082 families with children aged less than 15 years in which no parent was employed, representing 19.2% of families in this category (Table 4.25).

The distribution of jobless families was similar to that of low income families, with the highest proportions recorded in the north and north-western areas, as well as in the outer southern suburbs (Map 4.15). In contrast, the lower proportions were generally in the eastern and inner southern regions.

The correlation analysis showed a very strong association at the SLA level with the variables for low income families, single parent families, unemployment, Indigenous people, public rental housing and unskilled and semi-skilled workers. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between high proportions of jobless families and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

There were 15,490 jobless families with children less than 15 years of age living in Central Northern region, 20.4% of all families in the region with children of this age. It is of note that the region had both the highest and lowest proportions of this population group in the metropolitan area (see graph opposite) and close to the most extreme rates in the State (which were in the **Northern and Far Western** region (see graph on page 93)). Approximately half of all families in both Playford - Elizabeth (51.0%, 1,451 families, the largest number in the metropolitan regions) and Playford - West Central (48.9%, 879 families) were jobless.

There were also high proportions in the SLAs of Port Adelaide Enfield - Port (41.2%, 1,051 jobless families), Port Adelaide Enfield - Inner (36.8%, 699), Salisbury - Central (29.9%, 962), - Inner North (27.7%, 957) and Balance (27.5%, 201), Charles Sturt - North-East (26.8%, 699), Port Adelaide Enfield - East (26.2%, 663), and Charles Sturt - Inner West (22.1%, 503).

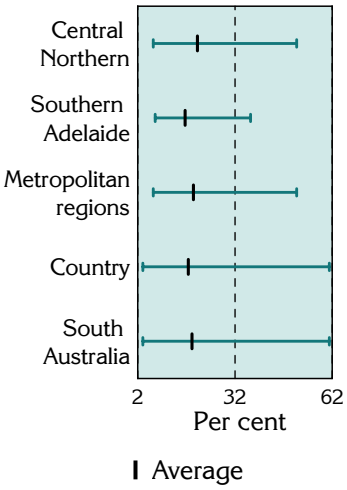
Relatively large numbers of jobless families were also recorded in the SLAs of Salisbury - South-East (787 jobless families, 21.8%), Port Adelaide Enfield - Coast (566, 19.3%), Tea Tree Gully - South (503, 15.3%) and Salisbury - North-East (501, 19.4%).

Southern Adelaide

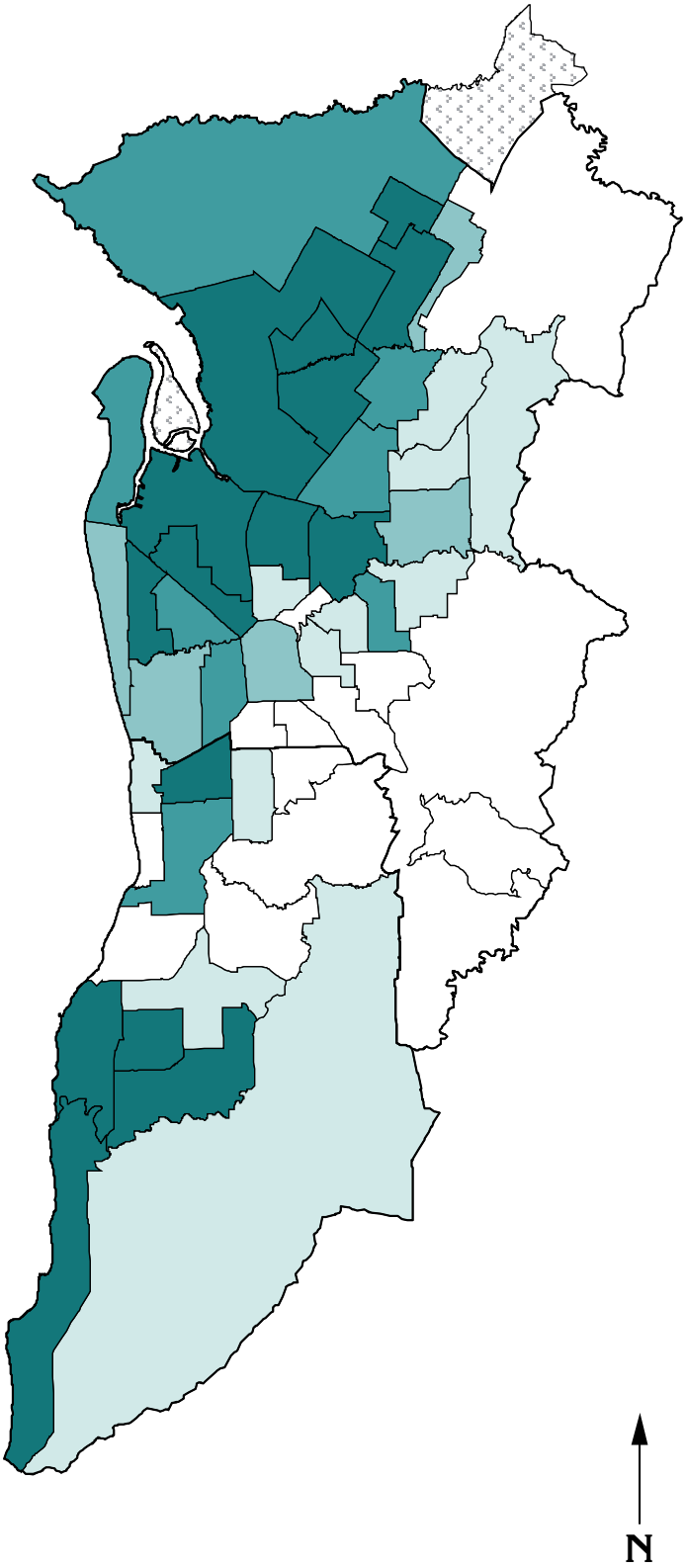
There were 5,592 jobless families in the south, representing 16.6% of families with children aged less than 15 years in the region. The SLAs in the City of Onkaparinga had the highest proportions of jobless families, from the highest (over a third) in Onkaparinga - North Coast (36.8%, 666 jobless families) to 30.8% in Hackham (556), 25.1% in Morphett (698) and 24.1% in South Coast (670). Marion - North had 22.7% of families in this category (488 jobless families).

There were also relatively large numbers of jobless families in Marion - Central (600 jobless families, 21.3%) and Onkaparinga - Woodcroft (491, 11.2%).

Map 4.15
Jobless families with children aged less than 15 years, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent jobless families, by SLA

- *22.0% or more*
- *18.0 to 21.9%*
- *14.0 to 17.9%*
- *10.0 to 13.9%*
- *fewer than 10.0%*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on unpublished data from ABS ***Details of map boundaries are in Appendix 1.2***

Country South Australia

There were 8,121 families living in country South Australia with children aged less than 15 years in which no parent was employed, 17.6% of all families with children at these ages.

Mid North (24.5%) and **Northern and Far Western** regions (24.0%) had the highest proportions of jobless families in country South Australia (Table 4.25 and graph opposite). There were high proportions of jobless families in a number of areas with high proportions of Aboriginal and Torres Strait Islander people, including the north of the State, around Whyalla, Port Augusta, Peterborough and Unincorporated Riverland. There were also high proportions in parts of the Yorke Peninsula and Port Pirie (Map 4.16).

Table 4.25: Regional totals, jobless families, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	1,974	16.4	6.8
Wakefield[1]	1,739	16.7	6.0
South East	970	13.8	3.3
Northern & Far Western	1,407	24.0	4.8
Eyre	554	14.7	1.9
Mid North	818	24.5	2.8
Riverland	659	17.8	2.3
Country SA	**8,121**	**17.6**	**27.8**
Central Northern	15,490	20.4	53.0
Southern	5,592	16.6	19.1
Metropolitan regions	**21,082**	**19.2**	**72.2**
South Australia	**29,203**	**18.7**	**100.0**

[1]**Gawler is included in Wakefield region**

The correlation analysis showed a strong association with the variables for single parent families, low income families and dwellings with no motor vehicle. There were also inverse correlations with a number of variables: very strong with female labour force participation and strong with high income families, full-time participation in education at age 16 and Internet use. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage indicate a strong association at the SLA level between high proportions of jobless families and socioeconomic disadvantage (Table 8.2).

The Regions

Within **Mid North** (24.5%, 818 jobless families), the largest proportions were located in Peterborough (39.0%, 80 jobless families), Port Pirie City (27.7%, 436), Port Pirie Balance (23.2%, 90) and Barunga West (20.4%, 49).

Nearly one quarter of families with at least one child under the age of 15 years living in the **Northern and Far Western** region were jobless in 2001 (24.0%, 1,407 jobless families). It is of note that the region had both the highest and lowest proportions of this population group (see graph opposite). The largest proportions in this region (although with smaller numbers) were in Unincorporated Whyalla (61.1%, eleven jobless families), Coober Pedy (30.0%, 65), Unincorporated Far North (27.8%, 160), Whyalla (26.9%, 703) and Port Augusta (26.2%, 397).

In the **Riverland**, 17.8% (659) of families with a child or children under the age of 15 years were jobless. Within this region, there were high proportions in Unincorporated Riverland (42.1%, representing just eight jobless families) and Renmark Paringa - Renmark (21.4%, 201).

There were 1,739 jobless families in **Wakefield**, representing 16.7% of all families with at least one child under the age of 15 years in this area. Over one quarter of families in the Copper Coast were jobless (26.7%, 277 jobless families), with high proportions also in Goyder (23.1%, 102) and Yorke Peninsula - South (22.7%, 82). There were large numbers of jobless families in Gawler (396 jobless families, 19.3%) and Light (172, 13.8%).

The largest number of jobless families with at least one child under 15 years of age was in the **Hills Mallee Southern** region (1,974 jobless families, 16.4%). Within this region, the largest proportions were located in Murray Bridge (24.8%, 463), Mid Murray (21.7%, 166) and Yankalilla (20.5%, 72). Relatively large numbers were also recorded in Mount Barker - Central (339, 17.2%), Alexandrina - Coastal (180, 19.7%) and Victor Harbor (165, 18.6%).

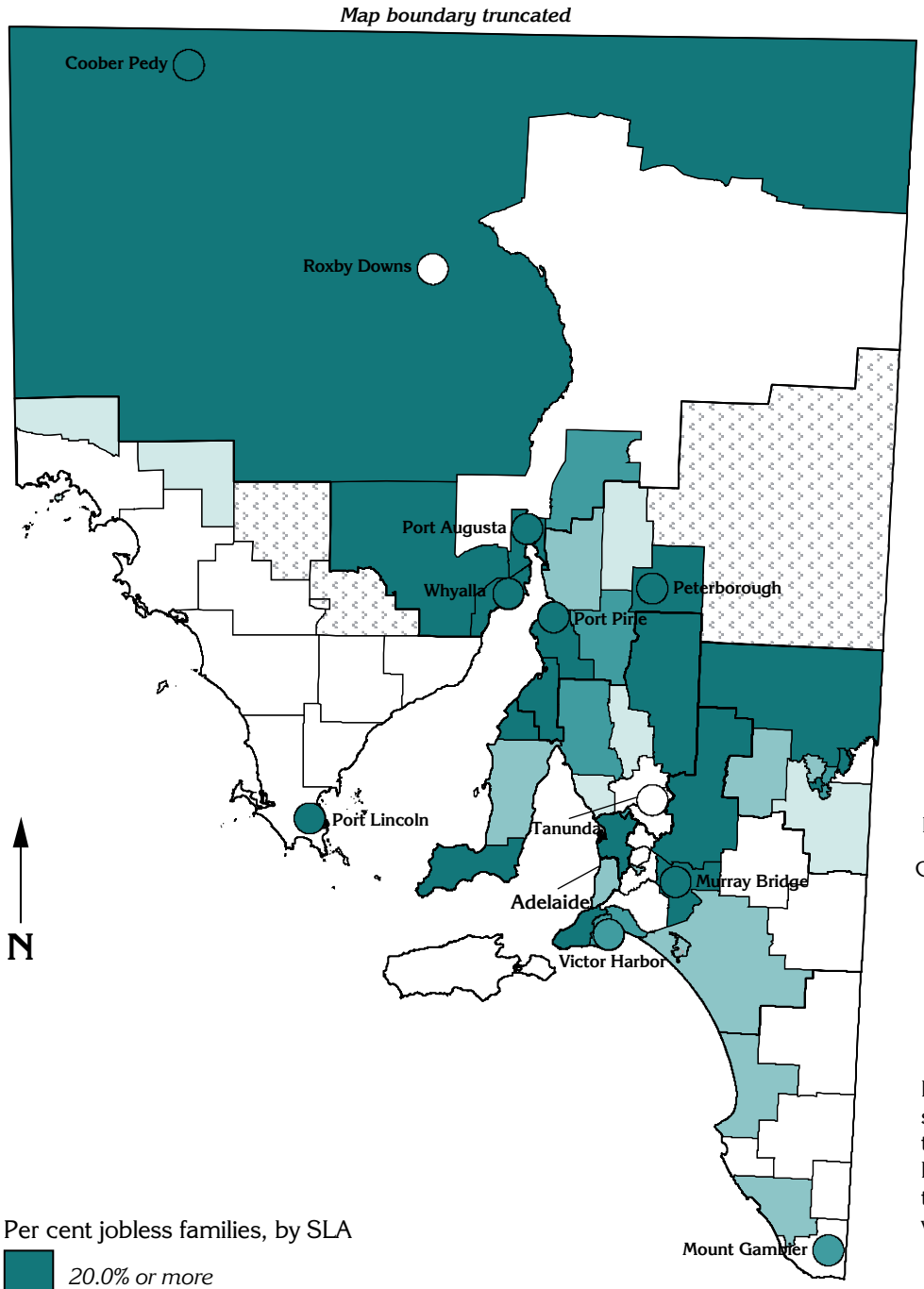
In **Eyre**, 14.7% of families were jobless (554 families), with the largest number and proportion in Port Lincoln, where approximately one in five families (21.3%, 330) were jobless.

In the **South East**, there were 970 jobless families, representing 13.8% of all families with at least one child under the age of 15 years. Although the proportions of jobless families in this region were lower, there were relatively large numbers in Mount Gambier (505 families, 18.8%) and Wattle Range - West (164, 16.4%).

ASGC Remoteness classification

The lowest proportions of jobless families were recorded in the Remote (14.2%) and Inner Regional (15.9%) classes, with high proportions of 19.3%, 19.8% and 18.6% in the Major Cities, Outer Regional and Very Remote areas, respectively.

Map 4.16
Jobless families with children aged less than 15 years, South Australia, 2001



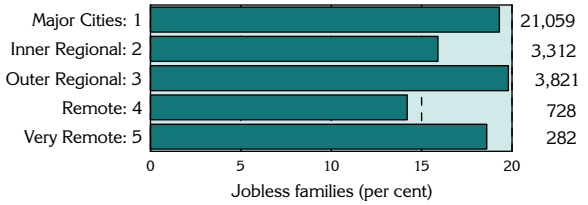
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent jobless families, by SLA

- *20.0% or more*
- *18.0 to 19.9%*
- *16.0 to 17.9%*
- *14.0 to 15.9%*
- *fewer than 14.0%*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases*

ASGC Remoteness classification



Source: Calculated on unpublished data from the ABS ***Details of map boundaries are in Appendix 1.2***

Unemployment rate, 2003

Those who do not have access to secure and satisfying work are less likely to have an adequate income; and unemployment and under-employment are generally associated with reduced life opportunities and poorer health and wellbeing. The official unemployment data show that the South Australian labour force has recovered from the recession of the early 1990s, when unemployment was above ten per cent, to be substantially lower, at 6.2%, in March 2003 (Table 4.26). However, this official measure of unemployment does not take account of hidden unemployment (caused by changes in the labour force participation rate) or under-employment (resulting from the loss of full-time jobs and the creation of part-time jobs). An alternative labour force indicator, which addresses these deficiencies, suggests the real level of unemployment in South Australia is some three times the official rate (Hetzel et al. 2004).

Table 4.26: Unemployment rate, for the month of March, selected years

Per cent

Section of State	1988	1993	1998	2003	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	9.1	12.3	10.1	6.6	-27.8
Country	8.2	9.0	9.3	5.3	-35.2
South Australia	8.8	11.4	9.9	6.2	-29.4

[1]**Per cent change over 15 years in the rate of unemployment**

Metropolitan regions

In March 2003, there were an estimated 36,815 unemployed people in the metropolitan regions (6.6% of the labour force) (DEWR 2003). Table 4.4 (on page 59) illustrates the considerable variation in unemployment rates between the different sexes and by age group within the metropolitan regions.

- In all age groups under 65 years, the proportion of males unemployed was higher than of females (although the rates in the 15 to 19 year age groups are similar);
- The overall rate of female unemployment was lower; however, a much larger proportion of the female labour force is employed on a part-time basis (47.1% in 2003, compared with 13.0% for males) (Hetzel et al. 2004);
- For both sexes, the younger age groups experienced the highest levels of unemployment, a tendency that is especially evident for males.

The overall spatial pattern is of high unemployment rates across an area from the city centre to the north-western suburbs, as well as in a number of outer northern and southern suburbs (Map 4.17).

The correlation analysis showed a strong or very strong association at the SLA level between high levels of unemployment and many indicators of socioeconomic disadvantage. Female labour force participation, participation in full-time education at age 16 years, high income families, SAS scores and Internet use at home, were strongly inversely correlated with high levels of unemployment. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the geographic level between unemployment and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

By far the highest unemployment rates in Central Northern were those in the SLAs of Playford - Elizabeth and - West Central (21.1% and 17.3%, respectively). Other SLAs with high rates were Port Adelaide Enfield - Port and - Inner (14.3% and 11.8%, respectively), Adelaide (10.5%), Charles Sturt - North-East (10.2%), and Salisbury - Central and - Inner North (9.9% and 9.8%, respectively).

Tea Tree Gully - North and - Hills (2.8 and 2.9%, respectively), Adelaide Hills - Central (3.0%) and Burnside - South-West (3.1%) had the lowest rates in the region.

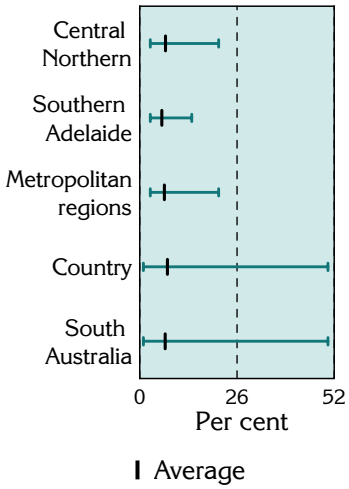
The largest numbers of unemployed people were in Playford - Elizabeth (1,992 people), Port Adelaide Enfield - Port (1,465), Salisbury - Central and - South-East (1,320 and 1,267, respectively), Charles Sturt - North-East (1,224) and Salisbury - Inner North (1,201).

Southern Adelaide

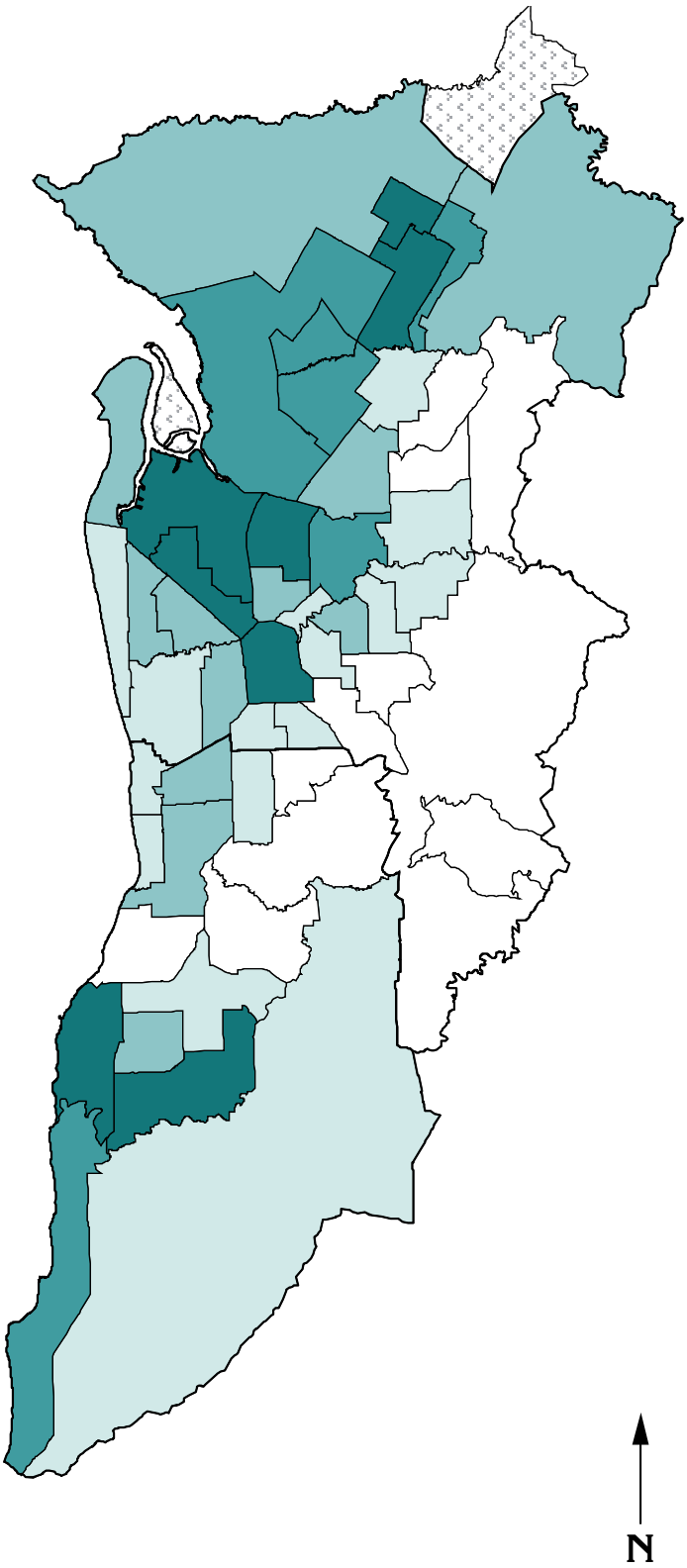
Unemployment rates in the Southern region were lower than those in the north, and the numbers of unemployed people were generally smaller. Onkaparinga - North Coast (13.9%), - Hackham (11.4%) and - South Coast (8.8%) had the highest estimated levels of unemployment. Onkaparinga - North Coast also had the largest number of unemployed people (1,042), the same number as estimated for Marion - Central. The South Coast and Woodcroft SLAs in Onkaparinga City had 968 and 945 unemployed people, respectively.

Mitcham - North-East and - Hills (2.8% and 3.2%, respectively), Onkaparinga - Reservoir (3.3%) and Marion - South (3.5%) were estimated to have the lowest unemployment rates.

Map 4.17
Unemployment rate, metropolitan regions, 2003



Note: The black vertical lines show the average unemployment rate in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent unemployed, by SLA

- *10.0% or more*
- *8.0 to 9.9%*
- *6.0 to 7.9%*
- *4.0 to 5.9%*
- *fewer than 4.0%*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from DEWR

Details of map boundaries are in Appendix 1.2

Country South Australia

The data presented here include Aboriginal and Torres Strait Islander people who receive (un)employment benefits through the Community Development Employment Project (CDEP) schemes. Their inclusion increases the unemployment rate in the country areas from 5.3% to 7.4%, with some very high rates at the SLA level. More details of this adjustment are included on page 59 and in Table 4.5.

In March 2003, there were an estimated 14,822 unemployed people in country areas of South Australia, comprising 7.4% of the labour force. In addition to the issue of hidden unemployment and under-employment, recorded unemployment rates in rural areas tend to be affected by the absorption into family farm work, for little financial reward, of people who would take other work if it were available.

There are wide variations at the regional level in unemployment rates, from 4.4% in **South East** to almost four times that level in **Northern and Far Western** (17.3%). The highest unemployment rates were in SLAs in the far north, along the west coast, and in Whyalla and Port Augusta, all regions with relatively large Indigenous populations (Table 4.27 and graph opposite).

Table 4.27: Regional totals, unemployment[2], 2003

Region	No.	% of Region	% of State
Hills Mallee Southern	2,803	5.2	5.4
Wakefield[1]	2,587	5.6	5.0
South East	1,466	4.4	2.8
Northern & Far Western	3,876	17.3	7.5
Eyre	1,760	10.8	3.4
Mid North	1,327	10.2	2.6
Riverland	1,003	5.9	1.9
Country SA	**14,822**	**7.4**	**28.7**
Central Northern	27,013	6.9	52.3
Southern	9,802	5.9	19.0
Metropolitan regions	**36,815**	**6.6**	**71.3**
South Australia	**51,637**	**6.8**	**100.0**

[1]Gawler is included in Wakefield region

[2] Includes CDEP data

The correlation analysis showed a strong association at the SLA level between high levels of unemployment and the variables for single parent families, the Indigenous population and dwellings with no motor vehicle. There was a strong inverse correlation with educational participation at age 16 years and Internet use at home. These results, together with the strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between unemployment and socioeconomic disadvantage (Table 8.2).

The Regions

Northern and Far Western region had the highest level of unemployment (17.3% and 3,876 people) and the greatest variation in rates (see graph opposite). In Unincorporated Far North, half of the population were unemployed, with a rate of 50.3% (1,111 people). There were also very high rates in the SLAs of Port Augusta (18.7%, 1,103 people), Unincorporated Whyalla (16.9%, 15), Coober Pedy (15.0%, 147) and Whyalla (14.6%, 1,405). The lowest rate in country South Australia was recorded for Roxby Downs (1.0%, 20 people).

In **Eyre**, also with a notable variation in rates, 10.8% of the population were unemployed (1,760 people). The highest rates were in Unincorporated West Coast (38.9%, 128 people) and Ceduna (31.2%, 568), with a high number in Port Lincoln (670, 10.5%). There were low rates in Cleve (2.0%, 20 people) and Le Hunte (2.5%, 20).

The unemployment rate in **Mid North** was 10.2% (1,327 unemployed people) and the highest rate within the region was in Peterborough (17.4%, 119 people). There was also a high unemployment rate in Port Pirie - City (13.6%, 769).

In **Riverland**, with an unemployment rate of 5.9% (1,003 people), the highest rate was in Berri and Barmera - Berri (9.0%, 331 people) and the lowest was in Loxton Waikerie - West (4.1%).

In **Wakefield**, the unemployment rate was 5.6% (2,587 people); high unemployment rates were recorded in the SLAs of Copper Coast (10.8%, 434 people) and Yorke Peninsula - North (10.3%, 312), with a low rate in Barossa - Tanunda (2.2%, 52).

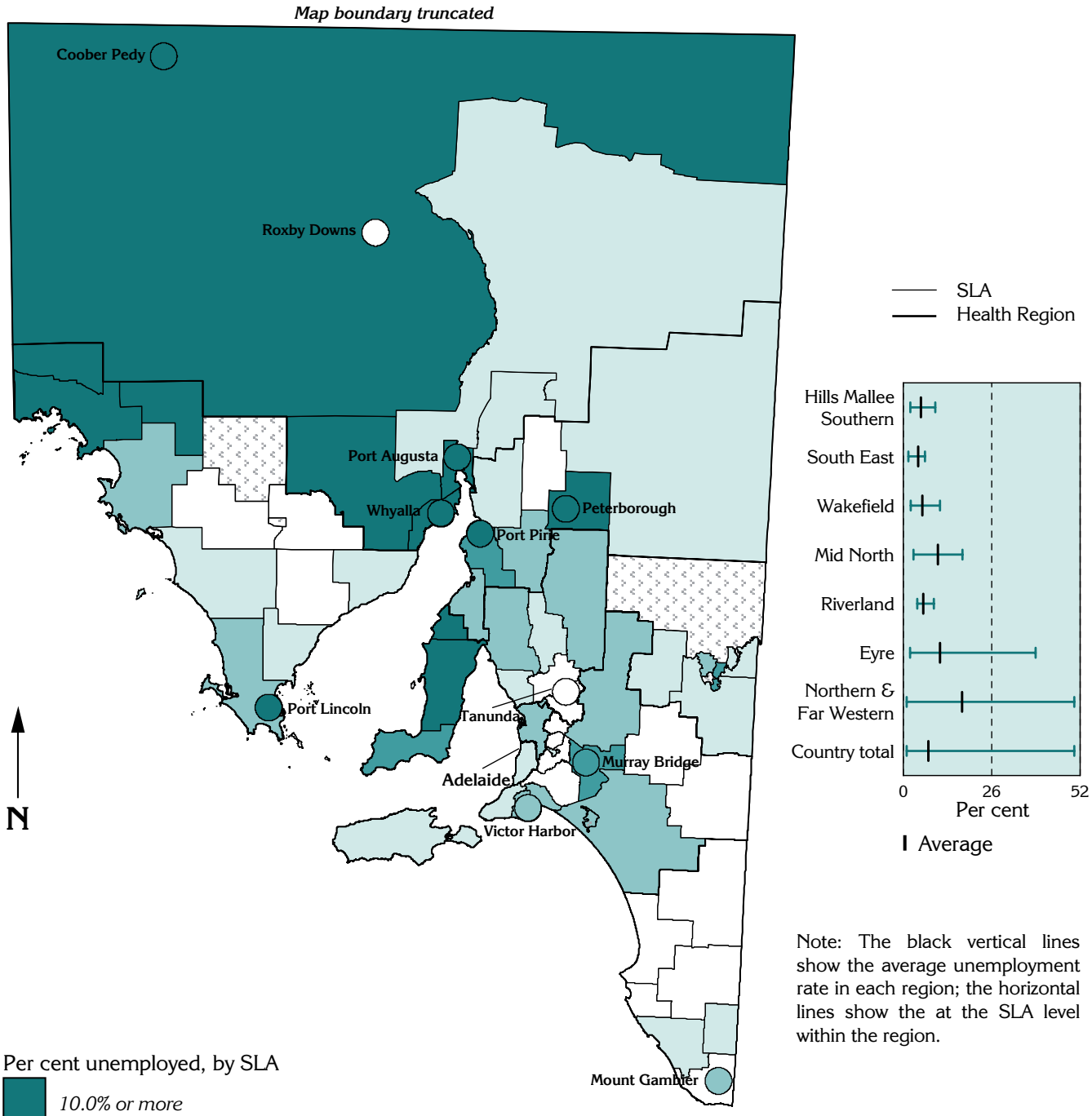
The unemployment rate in **Hills Mallee Southern** was 5.2% (2,803 people). Relatively low rates were recorded in this region, particularly in the SLAs of Adelaide Hills - North (2.1%, 75), Southern Mallee (2.3%, 28) and Adelaide Hills Balance (2.6%, 122). Murray Bridge had a large number of unemployed people (739 people, 9.4%).

The **South East** had an unemployment rate of 4.4% (1,466 people). There were low rates in the SLAs of Tatiara (1.5%, 58) and Naracoorte and Lucindale (2.4%, 111), and a large number of unemployed people in Mount Gambier (759, 6.4%).

ASGC Remoteness classification

The highest level of unemployment was recorded in the Very Remote areas, with a substantial 28.1% of the labour force unemployed. Rates were lowest in the most accessible areas, with an unemployment rate of 5.2% in the Inner Regional areas and 6.6% in the Major Cities areas.

Map 4.18
Unemployment rate, South Australia, 2003



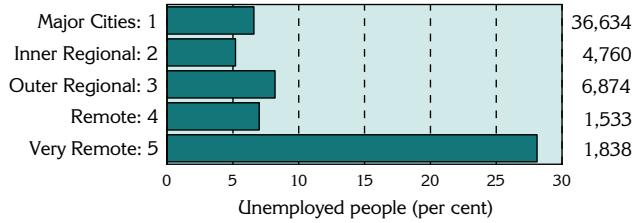
Note: The black vertical lines show the average unemployment rate in each region; the horizontal lines show the at the SLA level within the region.

Per cent unemployed, by SLA

- *10.0% or more*
- *8.0 to 9.9%*
- *6.0 to 7.9%*
- *4.0 to 5.9%*
- *fewer than 4.0%*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases*

ASGC Remoteness classification



Source: Calculated on data from DEWR

Details of map boundaries are in Appendix 1.2

Unskilled and semi-skilled workers, 2001

Occupation remains the most important determinant of wealth, social standing and wellbeing for most people in Australian society. The occupations defined by the ABS as unskilled and semi-skilled, encompass most lower paid, and less skilled blue collar jobs, and their prevalence therefore forms a useful general measure of low socioeconomic status. These occupations (ABS 'intermediate production and transport workers' and 'labourers and related workers') have shown an overall decline as a proportion of the total employed labour force in South Australia since 1986, down by 21.2% in Metropolitan Adelaide (Table 4.28). There was also a reduction in country South Australia between 1986 and 1991, before small increases over the following two census years, to give an overall decline of 5.4%. These trends have resulted in a widening gap between Metropolitan Adelaide and country areas.

Table 4.28: Unskilled and semi-skilled workers

Per cent

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	21.6	18.8	17.3	17.0	-21.2
Country	25.7	22.3	23.5	24.3	-5.4
South Australia	22.7	19.8	19.0	18.9	-16.5

[1]**Per cent change over 15 years in the proportion of unskilled and semi-skilled workers**

Metropolitan regions

In 2001, there were 78,132 unskilled and semi-skilled workers in the metropolitan regions, 16.9% of the employed labour force (Table 4.29). The pattern of variation in the proportion of workers in these categories reflects the long-established contrast between the working class northern, western and southern suburbs in the metropolitan regions, and the middle and upper class suburbs in and around the city, and to the east and south-east (Map 4.19).

The correlation analysis showed a very strong association between the geographic distribution of unskilled and semi-skilled workers and jobless, single parent and low income families; Indigenous people, total fertility rates, 0 to 4 year old children and unemployment. Conversely, there was a strong inverse association with female labour force participation, high income families, managers and administrators and professionals; PES, PAS and SAS scores, Internet use at home, and full-time participation in education. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between high proportions of unskilled and semi-skilled workers and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

The 55,634 unskilled and semi-skilled workers in the Central Northern region represented 17.4% of the labour force in 2001, although there was marked variation between SLAs (see graph opposite). The highest proportion of these workers in the metropolitan regions was located in Playford - West Central (42.8%, 1,411 workers). High proportions were also recorded in Playford - Elizabeth (36.7%, 2,384), Salisbury - Inner North (35.5%, 3,358), Port Adelaide Enfield - Port (32.8%, 2,546), Salisbury - Central (31.9%, 3,278), Salisbury Balance (29.9%, 706), Playford - East Central (25.5%, 2,126), Playford - West (25.0%, 830) and Port Adelaide Enfield - Inner (24.0%, 1,568).

The largest number of unskilled and semi-skilled workers in the metropolitan regions was located in Salisbury - South-East (3,455 workers, 23.9%). There were also large numbers in Port Adelaide Enfield - Coast (2,419, 20.5%), Tea Tree Gully - South (2,416, 15.9%), Salisbury - North-East (2,318, 23.4%), Tea Tree Gully - Central (2,180, 16.4%), Port Adelaide Enfield - East (2,016, 18.5%), Charles Sturt - North-East (2,005, 20.8%) and Charles Sturt - Inner West (1,913, 20.2%).

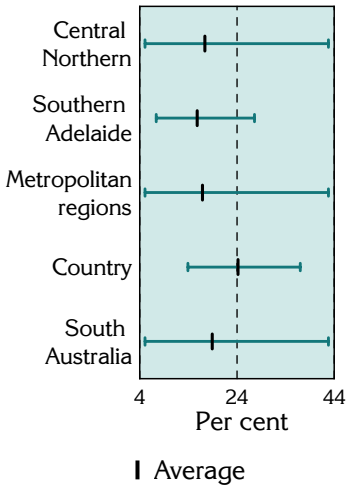
Values of less than 12.0% of the labour force in these occupations were common in SLAs in the eastern suburbs, with the lowest proportions in Burnside - South-West (5.1%), Burnside - North-East (5.9%), Adelaide (5.9%), Walkerville (5.9%), Norwood Payneham St Peters - West (6.2%) and Unley - East (6.6%); the SLAs of Campbelltown - West and - East (15.6% and 14.2%, respectively) were the exceptions.

Southern Adelaide

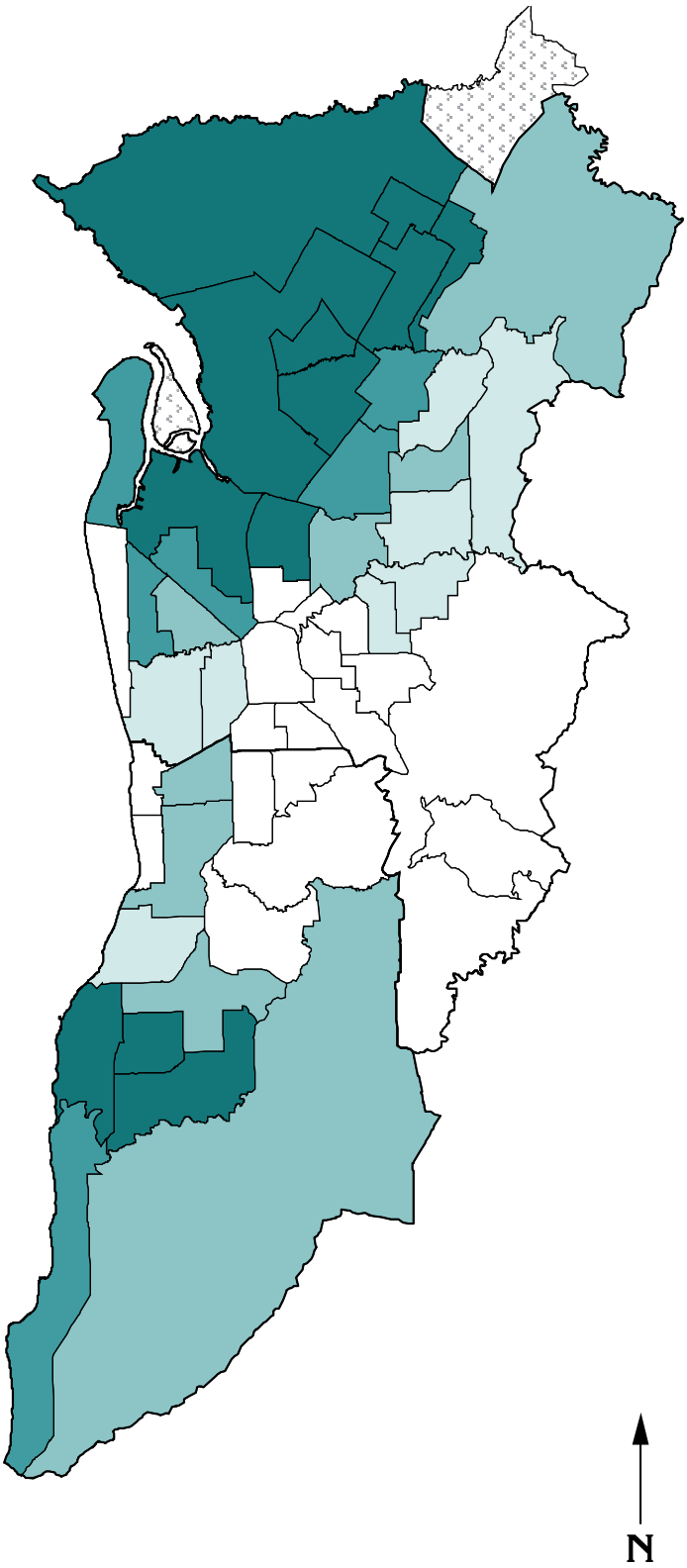
In 2001, 15.8% (22,498 workers) of the labour force in the Southern region were classified as unskilled and semi-skilled. The highest proportions of these workers were located in Onkaparinga - North Coast (27.6%, 1,641 workers), - Hackham (25.5%, 1,400) and - Morphett (24.7%, 2,520). The largest numbers were in Onkaparinga - Woodcroft (3,055, 18.0%), Marion - Central (2,163, 16.3%) and Onkaparinga - South Coast (2,110, 23.2%).

The lowest proportions in the Southern region were recorded in Mitcham - North-East and - Hills (7.4% and 8.5% respectively).

Map 4.19
Unskilled and semi-skilled workers, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent unskilled and semi-skilled workers*, by SLA

- *24.0% or more*
- *20.0 to 23.9%*
- *16.0 to 19.9%*
- *12.0 to 15.9%*
- *fewer than 12.0%*
- *data not mapped#*

*Consists of ABS occupation groups 'intermediate production & transport workers' and 'labourers & related workers'

#Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Unskilled and semi-skilled workers, 2001

Country South Australia

In 2001, there were 42,270 unskilled and semi-skilled workers in country areas of South Australia, 24.2% of the employed labour force. **Riverland** had the highest proportion (30.8%) at the regional level (Table 4.29 and graph opposite).

Table 4.29: Regional totals, unskilled and semi-skilled workers, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	9,946	21.6	8.3
Wakefield[1]	9,202	23.2	7.6
South East	8,206	28.5	6.8
Northern & Far Western	4,908	25.7	4.1
Eyre	2,948	20.4	2.4
Mid North	2,410	21.6	2.0
Riverland	4,560	30.8	3.8
Country SA	**42,270**	**24.2**	**35.1**
Central Northern	55,634	17.4	46.2
Southern	22,498	15.8	18.7
Metropolitan regions	**78,132**	**16.9**	**64.9**
South Australia	**120,402**	**18.9**	**100.0**

[1]**Gawler is included in Wakefield region**

There were few SLAs with high proportions of unskilled and semi-skilled workers; these were located in the far north and west, the **Riverland** and lower **South East** (Map 4.20).

The correlation analysis showed a strong association with the population aged 15 to 24 years, and a strong inverse correlation with managers and administrators, and professionals. These results, together with the strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between high proportions of unskilled and semi-skilled workers and socioeconomic disadvantage (Table 8.2).

The Regions

Overall, almost one third (30.8%, 4,560 workers) of the **Riverland's** employed labour force was classified as being unskilled and semi-skilled. The SLAs with the highest proportions were Unincorporated Riverland (37.0%, a small number of 17 workers), Loxton Waikerie - West (34.4%, 721), Renmark Paringa - Paringa (33.6%, 290) and - Renmark (33.0%, 1,126), Berri and Barmera - Barmera (30.6%, 548) and Loxton Waikerie - East (29.7%, 1,026).

In the **South East**, 28.5% of those employed were in unskilled or semi-skilled occupations (8,206 workers). High proportions were found in Wattle Range - East (34.5%, 575 workers), Wattle Range - West (33.9%, 1,292), Naracoorte and Lucindale (28.4%, 1,174). The largest numbers of unskilled and semi-skilled workers in country South Australia were living in Mount Gambier (2,732, 26.8%), with a further 1,016 in Grant (26.5%).

One quarter of the labour force in **Northern and Far Western** region were unskilled or semi-skilled workers (25.7%, 4,908 workers). The highest proportions in this region were in Unincorporated Far North (33.3%, 670), Roxby Downs (32.2%, 610), Unincorporated Whyalla (30.8%, 20) and Unincorporated Flinders Ranges (29.4%, 199). There were large numbers of unskilled and semi-skilled workers in Whyalla (1,984, 25.0%) and Port Augusta (1,057, 20.9%).

Wakefield had a large number of unskilled and semi-skilled workers, with 9,202 workers, 23.2% of the workforce. The largest concentrations of unskilled and semi-skilled workers were in Barossa - Angaston (31.1%, 1,128) and Mallala (29.1%, 914). There were also a large number of unskilled and semi-skilled workers in Gawler (1,564, 21.3%) and Light (1,115. 23.9%).

Hills Mallee Southern had the largest number of unskilled and semi-skilled workers, with 9,946 workers, representing 21.6% of the labour force. The largest concentrations were in Murray Bridge (28.9%, 1,882) and Mid Murray (28.6%, 918). There were also large numbers of unskilled and semi-skilled workers in Mount Barker - Central (1,325, 19.4%).

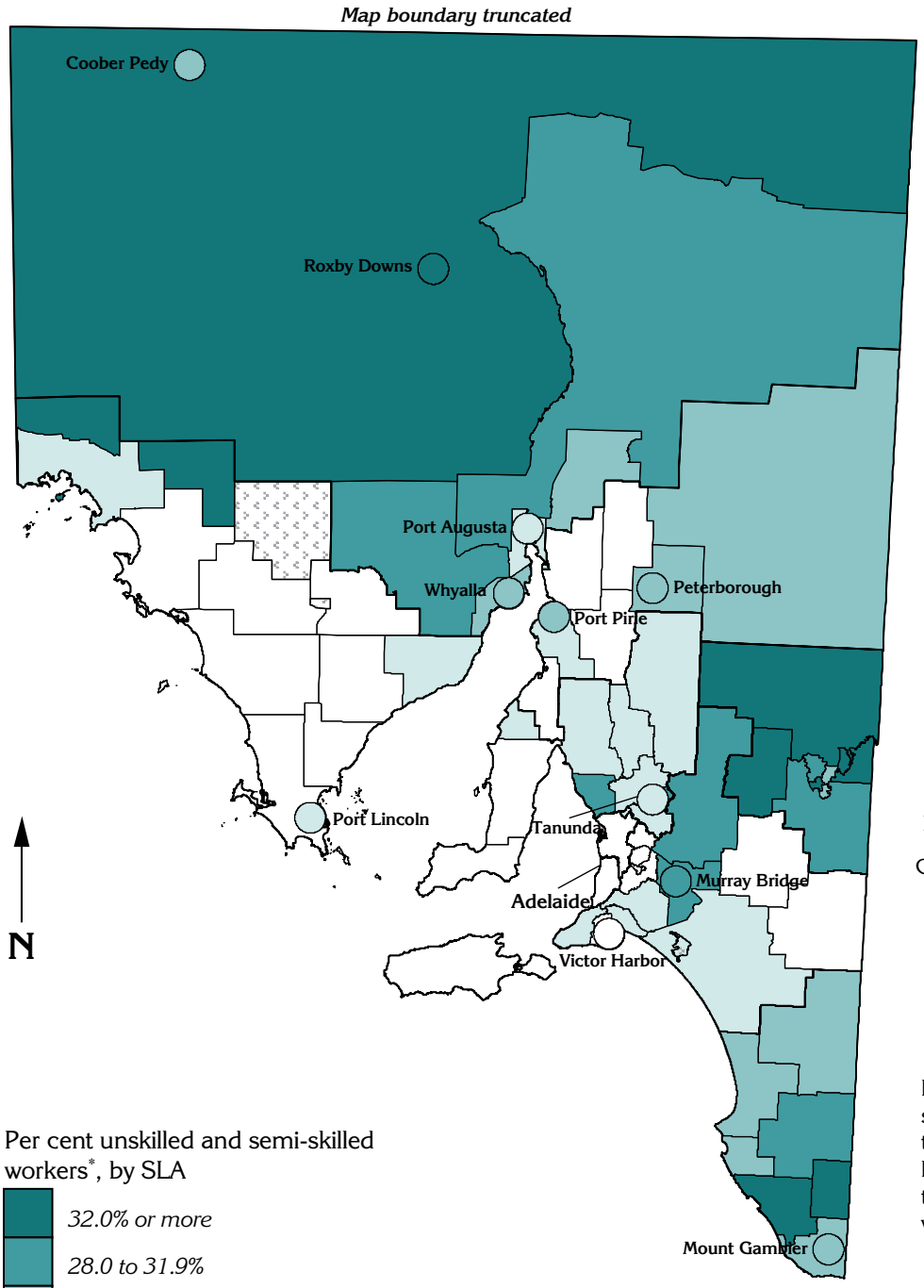
In the **Mid North** region, the 2,410 unskilled and semi-skilled workers comprised 21.6% of the labour force. SLAs within this region had generally lower proportions than those in other country SLAs. Port Pirie - City had a large number of unskilled and semi-skilled workers (1,169, 25.2%).

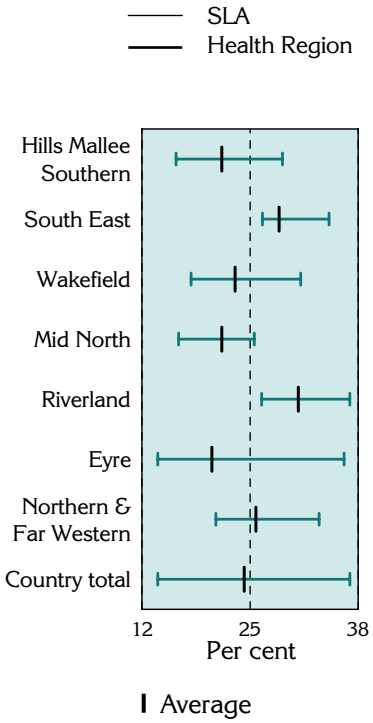
There were 2,948 unskilled and semi-skilled workers in **Eyre**. While, it was the lowest regional percentage, at 20.4% of the labour force, the region also had the widest variation (see graph opposite). Unincorporated West Coast was the only SLA with a high proportion (36.3%, 106 workers). There was a large number in Port Lincoln (1,293 workers, 23.5%).

ASGC Remoteness classification

There were relatively high levels of unskilled and semi-skilled workers in the regional and remote classes, particularly in Outer Regional (25.8%) and Very Remote (25.6%). There were slightly lower proportions in Inner Regional (22.7%) and Remote (21.9%). The proportion of unskilled and semi-skilled workers in Major Cities was much lower compared to the remote classes (16.9%).

Map 4.20
Unskilled and semi-skilled workers, South Australia, 2001





Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent unskilled and semi-skilled workers*, by SLA

- *32.0% or more*
- *28.0 to 31.9%*
- *24.0 to 27.9%*
- *20.0 to 23.9%*
- *fewer than 20.0%*
- *data not mapped#*

*Consists of ABS occupation groups 'intermediate production & transport workers' and 'labourers & related workers'

#Data were not mapped because the SLA has a population of less than 100

ASGC Remoteness classification

Source: Calculated on data from ABS Census 2001

Details of map boundaries are in Appendix 1.2

Female labour force participation rate, 2001

The marked increase in women's participation in paid work (at a time of decline in male participation) has been one of the most significant trends in Australian society over the last three decades. Women are both remaining in the work force longer (partly by delaying childbirth), and re-entering the workforce after childbirth, because of changes in social perceptions of the role of women and increased economic pressures on families.

As Table 4.30 shows, there was a marked increase in the female labour force participation rate from 1986 (63.4%) to 1991 (69.5%): defined here as females aged 20 to 54 years in the workforce as a proportion of all females at those ages. Despite a gradual decline, the participation rate in 2001 remains higher than that in 1986. Female labour force participation has been consistently higher in Metropolitan Adelaide than in country South Australia, although that gap had substantially narrowed by 2001.

Table 4.30: Female labour force participation rate

Per cent

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	64.3	70.2	69.1	66.6	3.6
Country	60.7	67.4	66.2	65.3	7.6
South Australia	63.4	69.5	68.4	66.3	4.6

[1]**Per cent change over 15 years in the rate of female labour force participation**

Metropolitan regions

In 2001, there were 177,680 females aged 20 to 54 years participating in the labour force in the metropolitan regions, 66.6% of the female population in this age group (Table 4.31).

The SLAs with the highest female labour force participation rates form a solid block to the east, south-east and south of the city, and stand in marked contrast to the lowest rates (Map 4.21). Local variations in female labour force participation have complex causes, and their implications for social health and for the provision of services such as child care are not straightforward. For example, high participation rates are not necessarily an indication of the need for child-care facilities; participation may be high partly because good services already exist, at least for better-off families. Low participation rates may indicate the existence of a welfare-dependent population, especially single mothers, for whom participation in low-paid employment is not financially worthwhile.

The correlation analysis showed a very strong association between high female participation rates and full-time educational participation, high income families and managers and administrators, and professionals; and very strong inverse associations with jobless families, unskilled and semi-skilled workers, unemployment, single parent families, the Indigenous population, low income families and public rental housing. These results, together with the very strong correlation with the Index of Relative Socio-Economic Disadvantage, indicate that high rates of female labour force participation at the small area level are strongly associated with high socioeconomic status (Table 8.1).

Central Northern Adelaide

Approximately two thirds (65.8%, 123,130 females) of females aged 20 to 54 years in the Central Northern region were participating in the labour force. The region has both the lowest and close to the highest rates in the State (see graph opposite). The highest participation rates were in Adelaide Hills - Ranges (77.3%), Unley - East (77.1%), Norwood Payneham St Peters - West (76.8%), Adelaide Hills - Central (76.3%), Burnside - North-East and Unley - West (both 75.9%), Burnside - South-West (75.5%) and Prospect (75.0%).

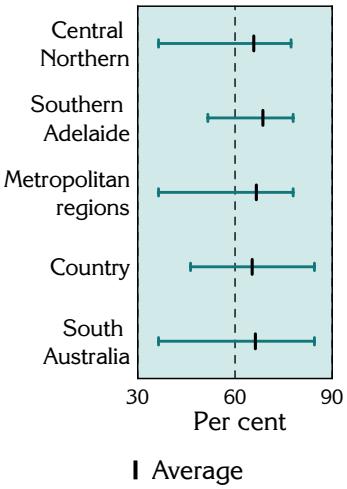
The largest numbers were located in Tea Tree Gully - South (5,597 females), - North (5,364) and - Central (5,019), Charles Sturt - Coastal (5,445), Salisbury - South-East (5,335), Campbelltown - East (4,748) and Port Adelaide Enfield - Coast (4,658). The lowest female labour force participation rate was in Playford - West Central (36.4%, 1,086).

Southern Adelaide

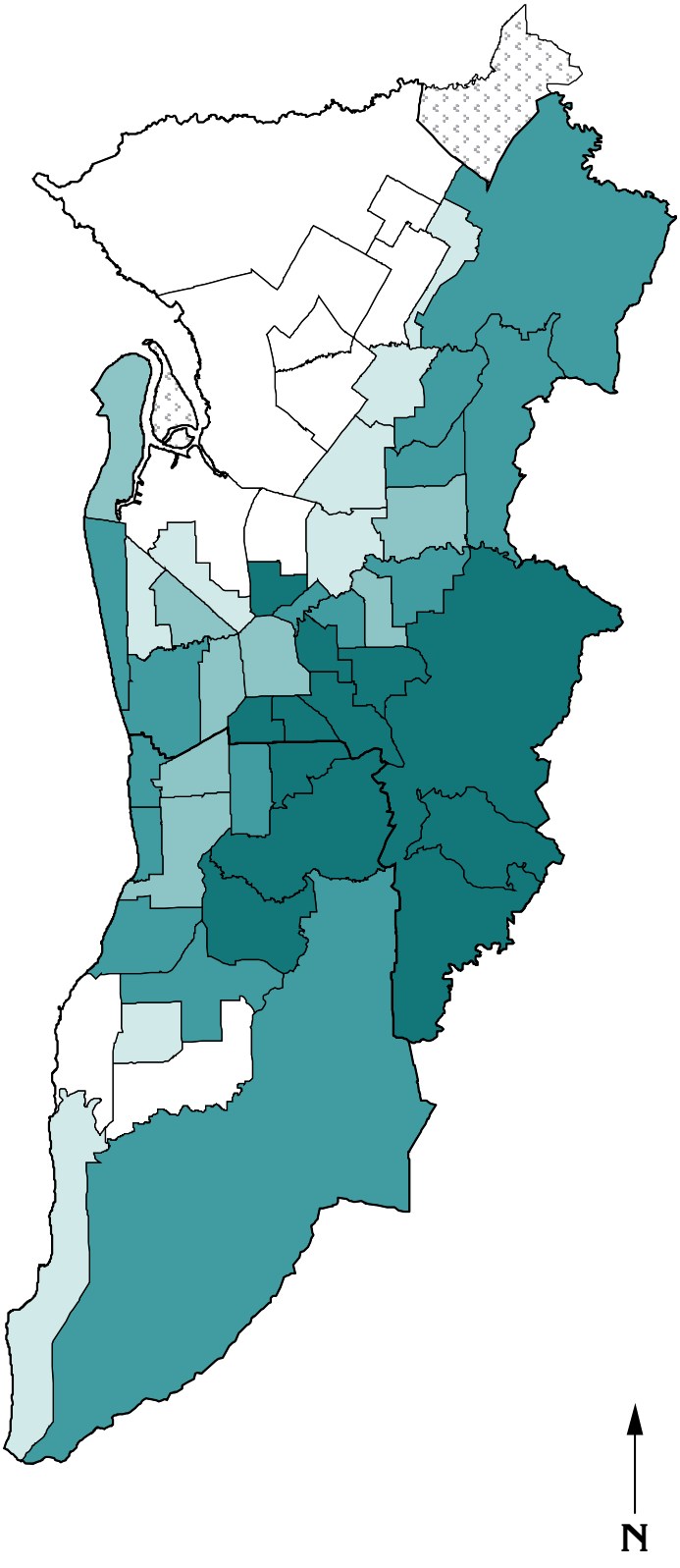
Despite a slightly higher overall participation rate in the Southern region (68.6%, 54,541 females), fewer SLAs were mapped in the highest range: the higher overall rate results from less variation within the region (see graph on the opposite page).

The highest participation rate in the metropolitan regions was in Mitcham - North-East (77.9%). There were also high rates in Onkaparinga - Reservoir (75.4%) and Mitcham - Hills (75.1%). Onkaparinga - Woodcroft had the largest number of females (6,604) in the labour force, and large numbers were also found in Marion - Central (5,018) and Onkaparinga - Reservoir (4,959). The lowest participation rate was in Onkaparinga - North Coast (51.6%, 2,067).

Map 4.21
Female labour force participation rate, metropolitan regions, 2001



Note: The black vertical lines show the average participation rate each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent female labour force participation*, by SLA

- *75.0% or more*
- *70.0 to 74.9%*
- *65.0 to 69.9%*
- *60.0 to 64.9%*
- *fewer than 60.0%*
- *data not mapped#*

*Labour force participation of females aged 20 to 54 years

#Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Female labour force participation rate, 2001

Country South Australia

In 2001, there were 61,299 females aged 20 to 54 years participating in the labour force in country South Australia, 65.3% of the female population in this age group.

The highest participation rate in country South Australia was in the **Riverland** (69.1%), and the lowest was in the **Mid North** (58.4%) (Table 4.31). The most striking feature of the map of the distribution of female labour force participation is the low rates in the towns, where high proportions of sole parent beneficiaries find work difficult to get, or it is uneconomic for them to do so (Map 4.22). Also of note is the wide variation within a number of regions (see graph on the opposite page).

Table 4.31: Regional totals, female labour force participation, 2001

Region	Number	% of Region	% of State
Hills Mallee Southern	16,321	66.2	6.8
Wakefield[1]	14,012	65.5	5.9
South East	9,887	68.9	4.1
Northern & Far Western	6,927	58.9	2.9
Eyre	4,998	67.5	2.1
Mid North	3,846	58.4	1.6
Riverland	5,189	69.1	2.2
Country SA	**61,299**	**65.3**	**25.7**
Central Northern	123,130	65.8	51.5
Southern	54,541	68.6	22.8
Metropolitan regions	**177,680**	**66.6**	**74.3**
South Australia	**238,979**	**66.3**	**100.0**

[1]**Gawler is included in Wakefield region**

There was a very strong inverse correlation at the SLA level between high female labour force participation rates and high proportions of jobless families; and strong inverse correlations with dwellings with no motor vehicle, single parent families and low income families. These results, together with the very strong correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between high rates of female labour force participation and high socioeconomic status (Table 8.2).

The Regions

In the **Riverland**, over two thirds (69.1%) of females aged 20 to 54 years were participating in the labour force (5,189 females), with the largest concentrations in Renmark Paringa - Paringa (73.5%, 300 females), Loxton Waikerie - East (72.3%, 1,160) and Berri and Barmera - Berri (70.1%, 1,172). The largest number of females participating in the labour force in this region was in Renmark Paringa - Renmark (1,193, 65.9%).

In the **South East**, with a labour force participation rate of 68.9% (9,887 females), the highest rates were in Naracoorte and Lucindale (76.7%, 1,415 females), Wattle Range - East (74.4%, 552), Tatiara (74.3%, 1,135), Grant (72.7%, 1,282) and Robe (70.9%, 210). The largest number of females in the labour force in country South Australia was in Mount Gambier (3,704, 65.4%), with a further 1,250 (62.3%) in Wattle Range - West.

In **Eyre**, 67.5% (4,998) of females were in the labour force, with the largest SLA female participation rate in country South Australia, in Kimba (84.5%, 207 females). There were also high rates in Cleve (74.6%, 288), Le Hunte (74.4%, 232), Ceduna (71.6%, 613), and Unincorporated West Coast (70.7, 104). There were a large number of females in the labour force in Port Lincoln (1,973 females, 63.0%).

There were 16,321 females (66.2%) in the labour force in **Hills Mallee Southern**. High participation rates were recorded in Southern Mallee (75.2%, 349 females), Karoonda East Murray (73.2%, 197), Adelaide Hills Balance (72.1%, 1,471), Kangaroo Island (71.8%, 704) and Adelaide Hills - North (71.7%, 1,179). There were also large numbers in Mount Barker - Central (2,616 females, 67.0%) and Murray Bridge (2,236, 60.6%).

In the **Wakefield** region, there were 14,012 (65.5%) females in the labour force. The highest rates were in Barossa - Tanunda (78.2%, 821 females), Barossa - Angaston (73.5%, 1,274) and Clare and Gilbert Valleys (72.4%, 1,308). The SLAs with large numbers of females participating in the labour force include Gawler (2,752, 65.2%), Light (1,651, 67.2%), Copper Coast (1,210, 55.9%), Barossa - Barossa (1,166, 67.2%) and Mallala (1,147, 62.5%).

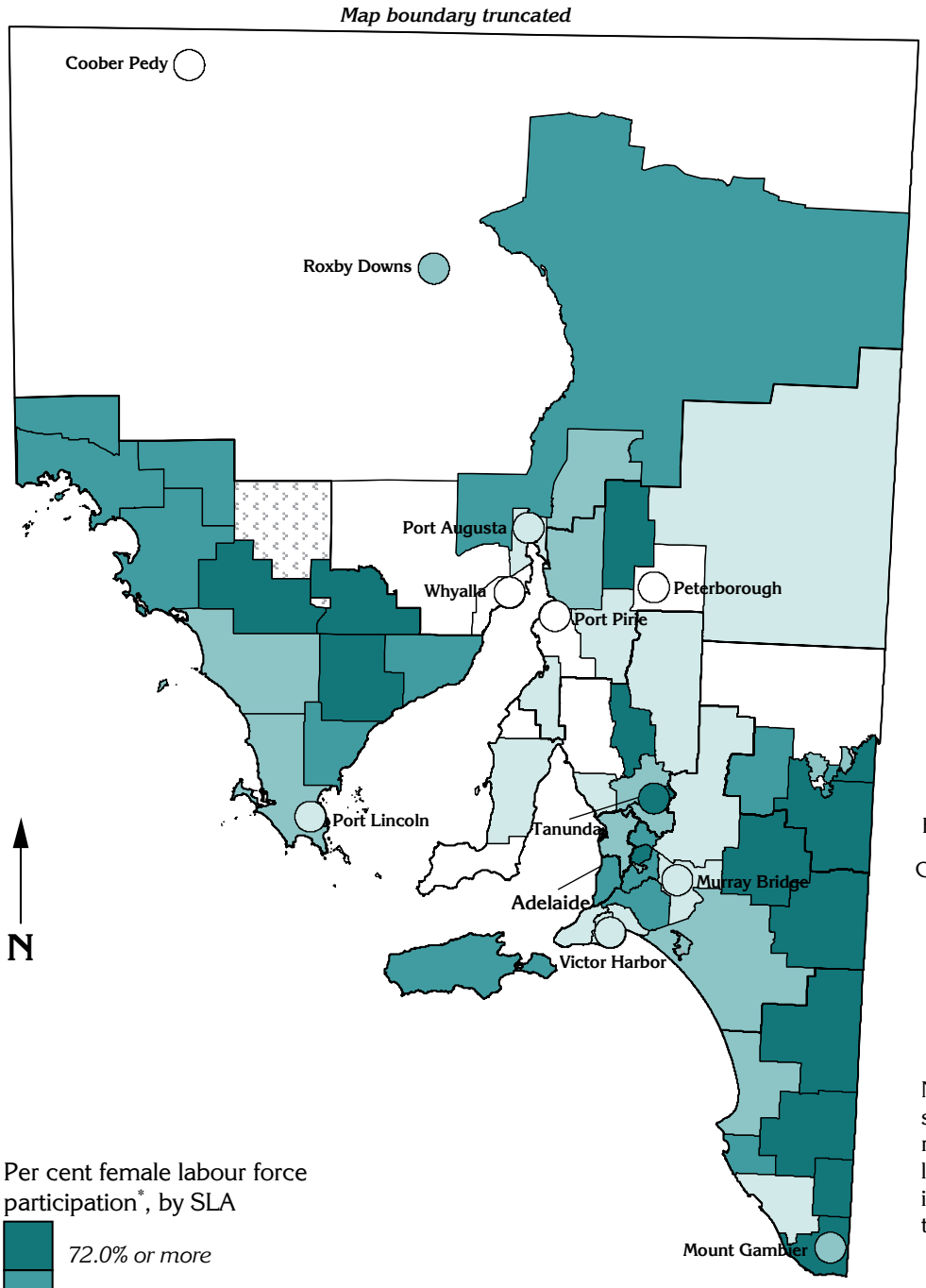
In the **Northern and Far Western** region, there was a low participation rate of 58.9% (6,927 females). The only SLA mapped in the highest range was Unincorporated Flinders Ranges (70.4%, 233 females); however, there were large numbers of females in the labour force in Whyalla (2,830, 56.3%) and Port Augusta (1,996, 62.5%).

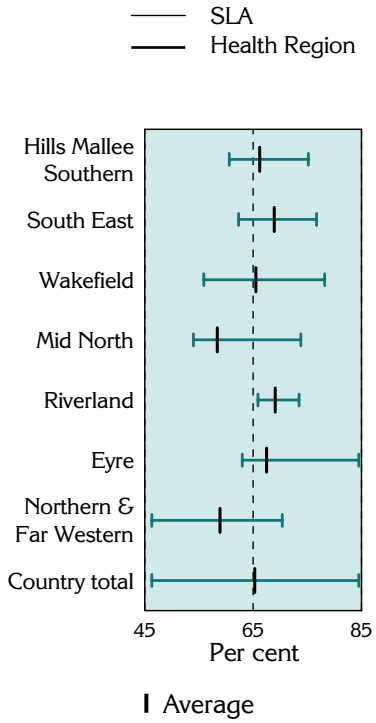
There were also low participation rates in the **Mid North** region, 58.4% overall (3,846 females), with Orroroo/Carrieton (73.8%, 144 females) the only SLA with a high participation rate. The rate in Port Pirie - City was 54.7% (1,684 females).

ASGC Remoteness classification

There were minimal differences in female labour force participation across the remoteness classes.

Map 4.22
Female labour force participation rate, South Australia, 2001





Note: The black vertical lines show the average participation rate in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

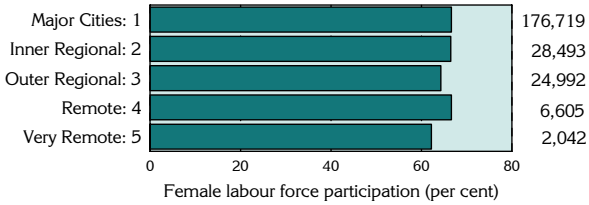
Per cent female labour force participation*, by SLA

- *72.0% or more*
- *68.0 to 71.9%*
- *64.0 to 67.9%*
- *60.0 to 63.9%*
- *fewer than 60.0%*
- *data not mapped#*

*Labour force participation of females aged 20 to 54 years

#Data were not mapped because the SLA has a population of less than 100

ASGC Remoteness classification Females



Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

People who used the Internet at home, 2001

The 2001 ABS Census included, for the first time, questions on use of a personal computer at home, and use of the Internet. Geographic variations in use of the Internet are likely to be influenced by a number of factors, including the availability of a personal computer, availability and reliability of the service, and cost of access. Home Internet access is increasingly becoming a valued part of life in Australia. However, access to this technology is not distributed equitably: this can lead to important disadvantages for young people at school, or adults wishing to undertake educational or personal development courses, or to use the Internet for commercial or recreational purposes.

Overall, 40.5% of South Australians reported using a personal computer at home in a one-week period and 25.6% reported using the Internet at home. Higher rates are likely to occur in families with dependent children: the ABS has found that almost three-quarters (74%) of all Australian households with dependent children have a home computer; and Internet access among households with dependent children is around 48% (McLaren & Zappalà 2002).

Metropolitan regions

In 2001, 44.7% of the population in the metropolitan regions reported using a personal computer at home, and just over one quarter (27.7%) reported using the Internet at home (Table 4.32).

Table 4.32: Use of the Internet at home, South Australia, 2001

Per cent

Response and location of use	In the last week, did the person use the Internet?	
	Metropolitan regions	Country regions
Yes		
- at home only	18.2	14.6
- at work only	5.5	3.8
- elsewhere only	4.5	4.7
- home/work	6.5	3.7
- home/elsewhere	2.5	1.5
- work/elsewhere	0.2	0.1
- all three	0.5	0.2
Total Yes	37.9	28.7
No	59.0	67.3
Not stated	3.2	4.1
Total	**100.0**	**100.0**
Total, Yes, at home	**27.7**	**20.1**

The spatial distribution highlights higher use among residents of the higher socioeconomic status suburbs in the north-east, east, south-east and south (Map 4.23).

The correlation analysis shows a very strong association with high income families and a strong association with female labour force participation and full-time educational participation of 16 year olds. There were also very strong inverse associations with low income families, jobless families, unemployment, public rental housing and dwellings with no motor vehicle; and strong inverse associations with a number of the indicators of socioeconomic disadvantage. These results, together with the very strong correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between Internet use and socioeconomic advantage (Table 8.1).

Central Northern Adelaide

Internet use at home showed greater variation at the SLA level in the Central Northern region than in Southern region (see graph opposite), resulting in a lower overall usage rate than in Southern (Table 4.33). Overall, four per cent more people in the region used the Internet at home than expected from the State rates (a standardised ratio (SR) of 104**): see Appendix 1.3 for details of SRs.

The SLAs with the highest standardised ratios in the region were Burnside - South-West (an SR of 160**, 8,005 people), Burnside - North-East (159**, 8,166), Walkerville (147**, 2,412), Adelaide Hills - Ranges (147**, 3,979 people), Adelaide Hills - Central (145**, 4,961), Unley - East (141**, 6,656), Norwood Payneham St Peters - West (138**, 6,177), Unley - West (136**, 5,757), Playford - Hills, (129**, 1,011), Tea Tree Gully - North (129**, 9,284) and Adelaide (128**, 4,582).

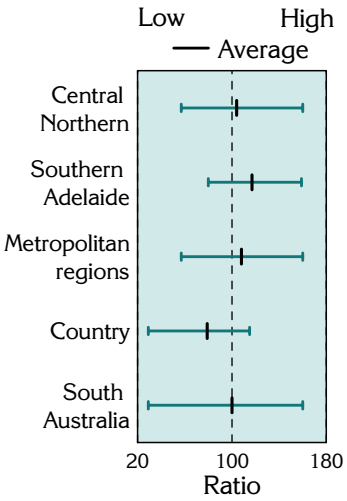
The lowest ratios in the metropolitan regions were also in the Central Northern region, in the SLAs of Port Adelaide Enfield - Port (an SR of 57**, 3,541 people), Playford - West Central (58**, 1,901), Playford - Elizabeth (60**, 3,683), Salisbury - Central (71**, 5,119), Salisbury - Inner North (72**, 4,810), Port Adelaide Enfield - Inner (75**, 3,482), Salisbury Balance (76**, 1,169), Playford - West (78**, 1,698), Charles Sturt - North-East (83**, 5,251) and Charles Sturt - Inner West (86**, 4,988).

Southern Adelaide

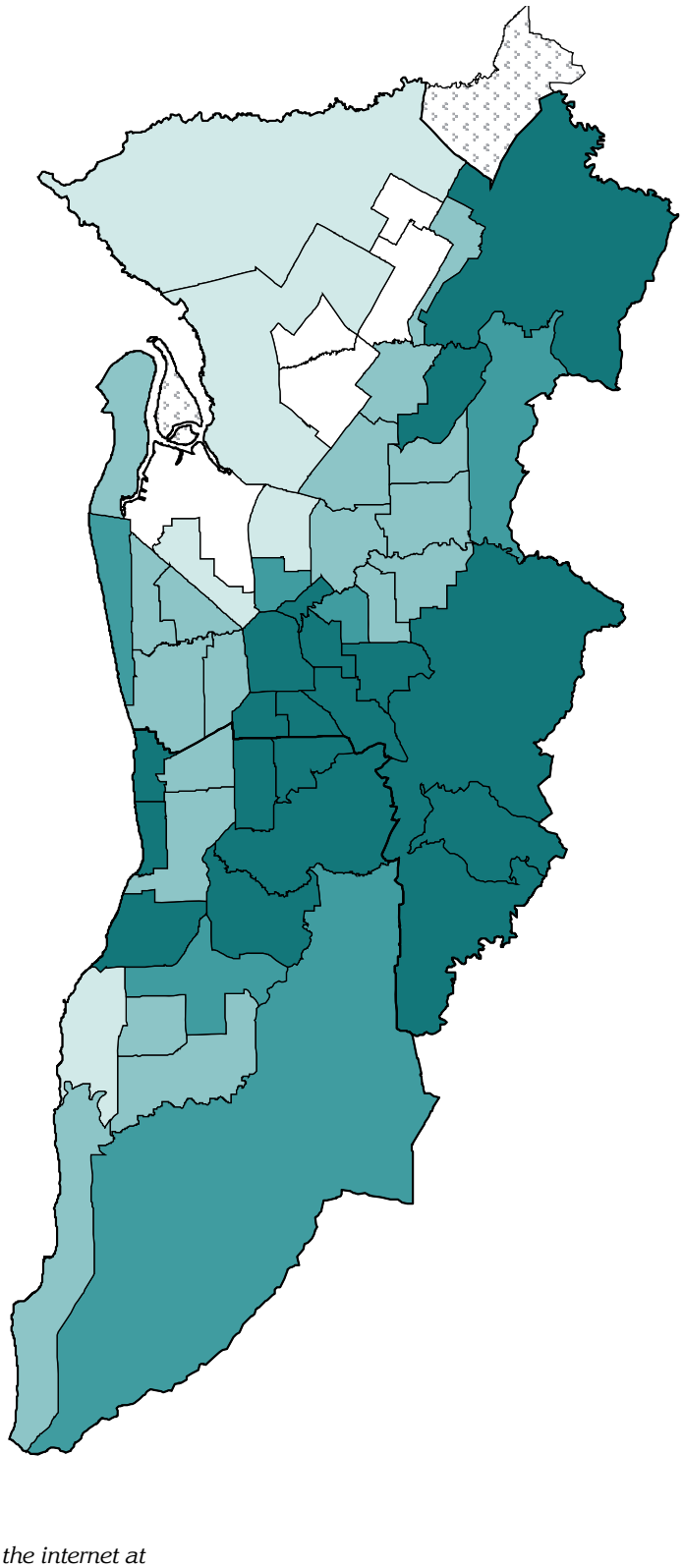
In Southern, 17% more people in the region used the Internet at home than expected from the State rates (a standardised ratio (SR) of 117**).

The highest ratios were in Mitcham - Hills (an SR of 159**, 9,559 people), Mitcham - North-East (155**, 5,863), Onkaparinga - Reservoir (142**, 9,708) and Marion - South (135**, 7,552). There was a low ratio in Onkaparinga - North Coast (an SR of 80**, 3,471 people).

Map 4.23
People who used the Internet at home, metropolitan regions, 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *125 and above*
- *115 to 124*
- *85 to 114*
- *75 to 84*
- *below 75*
- *data not mapped#*

*Index shows the number of people in the SLA using the internet at home compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In 2001, 36.5% of the population of country South Australia reported using a personal computer at home (ABS Census 2001). Use of the Internet at home over a one-week period was lower in the country (eleven per cent lower than expected from the State rate) than in the metropolitan regions (eight per cent higher). Usage is relatively even across the country regions, being lowest in the most remote region and highest close to Adelaide (Table 4.33 and graph opposite). These small variations are likely to be influenced by a number of factors, including availability and reliability of the service, and cost of access.

Table 4.33: Regional totals, people who used the Internet at home, 2001

Region	No.	% of Region	Ratio[1]
Hills Mallee Southern	23,451	21.6	86**
Wakefield[2]	19,524	20.5	82**
South East	12,159	20.0	78**
Northern & Far Western	9,316	18.7	71**
Eyre	6,195	18.8	74**
Mid North	5,534	18.1	74**
Riverland	6,348	19.5	77**
Country SA	**82,706**	**20.1**	**79****
Central Northern	197,365	26.7	104**
Southern	95,263	30.1	117**
Metropolitan regions	**292,643**	**27.7**	**108****
South Australia	**375,349**	**25.6**	**100**

[1]Index based on indirect age standardisation
[2]Gawler is included in Wakefield region

The correlation analysis showed a very strong association with high income families, and a strong association with female labour force participation. A number of inverse correlations were recorded: very strong with low income families; strong with jobless families; unemployment, the Indigenous population and dwellings with no motor vehicle. These results, together with the very strong correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between Internet use at home and socioeconomic advantage (Table 8.2).

The Regions

Although lower than expected, the highest standardised ratio in the country region was in **Hills Mallee Southern** (23,451 people, a ratio of 86**). The highest ratios at the SLA level were in Adelaide Hills - North (110**, 1,952 people), Adelaide Hills Balance (105*, 2,289), Mount Barker Balance (103, 2,231), Mount Barker - Central (101, 4,001), Victor Harbor (94*, 2,144), Southern Mallee (92, 511) and Alexandrina - Strathalbyn (89**, 1,862). There were also large numbers in Murray Bridge (2,652, 64**), Alexandrina - Coastal (1,720, 89**), Mid Murray (1,227, 60**) and The Coorong (1,079, 74**).

In **Wakefield,** 19,524 people used the Internet at home (20.5% of the regional population). The SLAs of Gawler (94**, 4,309), Barossa - Barossa (92**, 1,735 people), Barossa - Angaston (22.0%, 1,634), Light (86**, 2,348), Barossa – Tanunda (86**, 943) and Mallala (81**, 1,594), had the highest ratios; and there were large numbers in Copper Coast (1,675 people, 68**), Clare and Gilbert Valleys (1,604, 79**), Wakefield (1,224, 76**) and Yorke Peninsula – North (1,186, 71**).

In the **South East**, 20.0% of the population used the Internet at home (12,159 people). The highest ratio was in Robe, with 13% fewer people using the internet than expected from the State rate (87**, 279 people). The largest numbers of Internet users were in Mount Gambier (4,534 people, 77**), Grant (1,680, 83**), Naracoorte and Lucindale (1,654, 80**), Wattle Range - West (1,597, 72**) and Tatiara (1,425, 82**).

There was a similar rate of Internet use at home by people in the **Riverland** (19.5%, 6,348 people), with the highest ratio in Loxton Waikerie – East (85**, 1,549 people) and Renmark Paringa - Paringa (85**, 373). There were large numbers in Renmark Paringa - Renmark (1,429, 72**) and Berri and Barmera – Berri (1,342, 76**).

In **Eyre**, 18.8% of residents used the Internet at home (6,195). The highest ratio was recorded in the SLA of Le Hunte (97, 353) and the largest number in Port Lincoln (2,566, 75**).

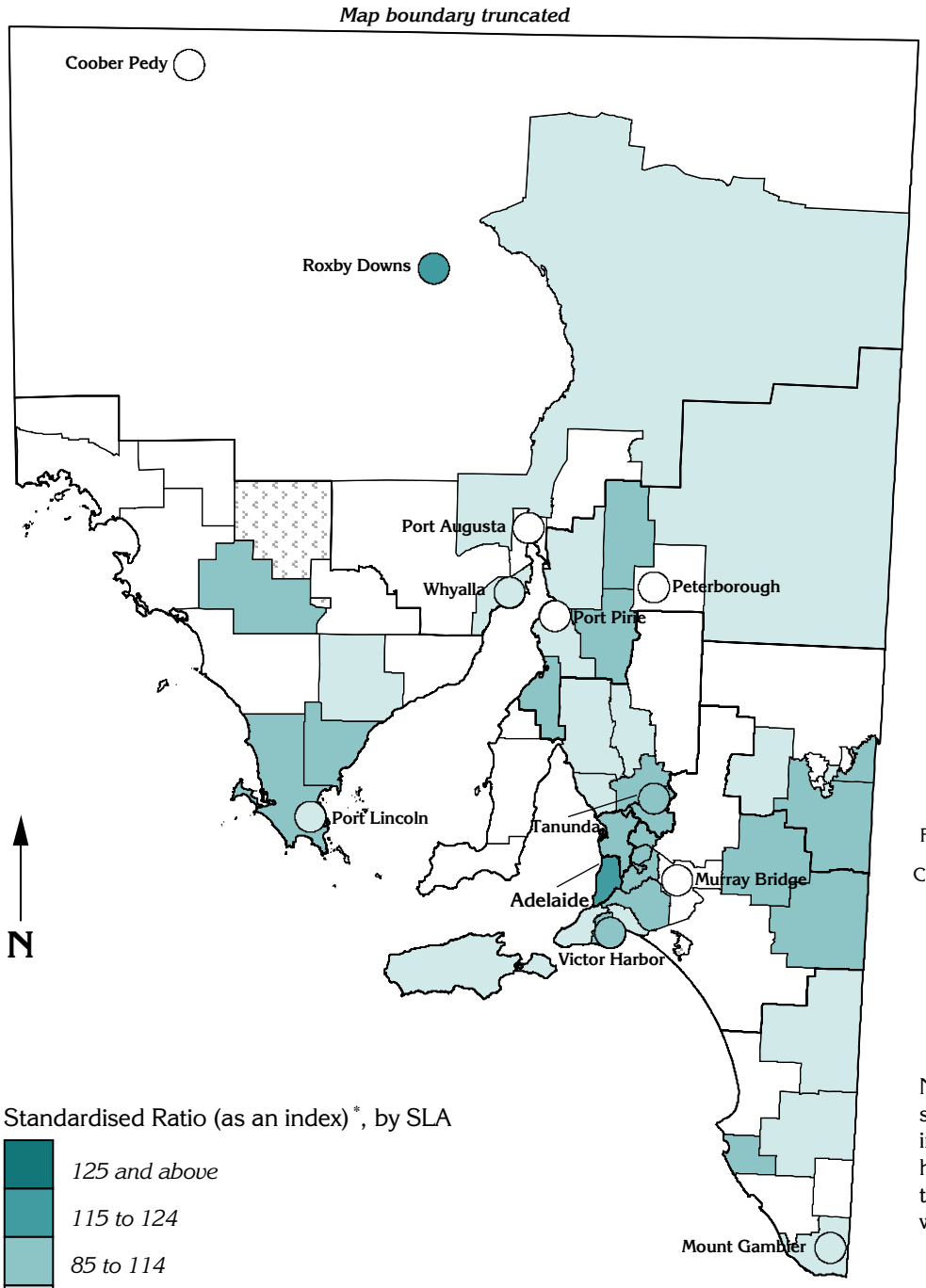
In **Northern and Far Western**, 9,316 people used the Internet at home, a relatively small proportion of the population (18.7%). In contrast, the highest ratio in country South Australia, with 15% more people using the Internet at home than expected, was in Roxby Downs (115**, 1,114 people). This variation is clear from the graph opposite. The largest number of home Internet users at the SLA level in country South Australia was in Whyalla (4,610 people, 83**). Port Augusta also had a large number of users (2,170 people, 63**).

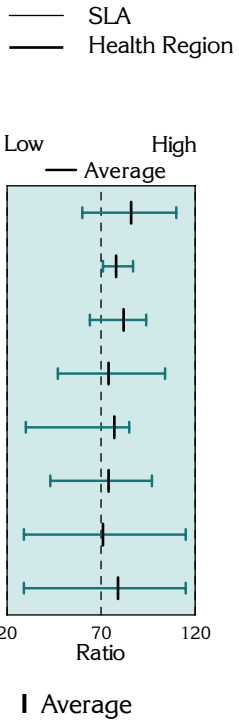
The lowest rate of use at the regional level was in the **Mid North**, with 5,534 people using the Internet at home (18.1%); the highest ratio was in the SLA of Orroroo/Carrieton (104, 247) and the largest number of users was in Port Pirie - City (2,184 people, 65**).

ASGC Remoteness classification

The standardised ratio of people using the Internet at home declined with increasing remoteness, from eight per cent more people than expected in the Major Cities areas to 49% below in the Very Remote areas.

Map 4.24
People who used the Internet at home, South Australia, 2001





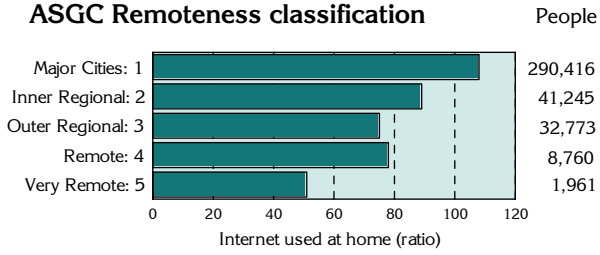
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Ratio (as an index)*, by SLA

- *125 and above*
- *115 to 124*
- *85 to 114*
- *75 to 84*
- *below 75*
- *data not mapped#*

*Index shows the number of people in the SLA using the internet at home compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100



Source: Calculated on data from ABS Census 2001

Details of map boundaries are in Appendix 1.2

Full-time participation in secondary school education at age 16, 2001

Education increases opportunities for choice of occupation and for income and job security, and also equips people with the skills and ability to control many aspects of their lives – key factors that influence wellbeing throughout the life course. Young people completing Year 12 (and who would still be at school at age 16) are more likely to make a successful initial transition to further education, training and work than early leavers (DSF 2003). Participation in schooling is also a major protective factor across a range of risk factors, including substance misuse and homelessness.

The data presented here refer to 2001, when the age of compulsory education was 15 years; the age changed from 15 to 16 years from 1 January 2003. There has been little change over this ten-year period in full-time participation in secondary school education at age 16, with a notably larger increase recorded for students from Metropolitan Adelaide (Table 4.34).

Table 4.34: Full-time participation in secondary school education at age 16

Per cent

Section of State	1991	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	76.7	80.8	5.3
Country	76.3	78.3	2.6
State total	76.6	80.1	4.6

[1]**Per cent change over 10 years in the proportion of full time participants**

Metropolitan regions

Variations within the metropolitan regions in educational participation provide a striking illustration of the links between education, occupation and income, with the highest rates of full-time participation in secondary school education at age 16 strongly concentrated in the higher socioeconomic eastern and south-eastern SLAs of the metropolitan regions (Map 4.25).

The correlation analysis showed a very strong association at the SLA level with female labour force participation and high income families; and a strong association with managers and administrators, and professionals. Very strong inverse correlations were recorded with unemployment, jobless families, unskilled and semi-skilled workers, the Indigenous population, single parent families, low income families and public rental housing. These results, together with the positive correlation with Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between high rates of full-time participation in secondary school education at age 16 and high socioeconomic status (Table 8.1).

Central Northern Adelaide

The highest participation rates recorded in the Central Northern region (with an overall rate of 80.1%, 7,875 full-time students) were in Unley - West (91.9%), Burnside - South-West (91.1%) and - North-East (90.8%), and Adelaide Hills - Ranges (90.2%). There were also high proportions in Unley - East (89.8%), Walkerville (88.0%), Adelaide Hills - Central (87.9%), Norwood Payneham St Peters - West (86.9%) and Campbelltown - East (86.2%).

In contrast, the lowest participation rates were in Playford - Elizabeth (60.6%), Playford - West Central (62.1%), Adelaide (65.5%), Salisbury - Inner North (71.6%), Salisbury - Central (72.6%), Port Adelaide Enfield - Port (73.6%), Port Adelaide Enfield - East (73.7%), Playford - West (74.2%) and Playford - East Central (74.7%).

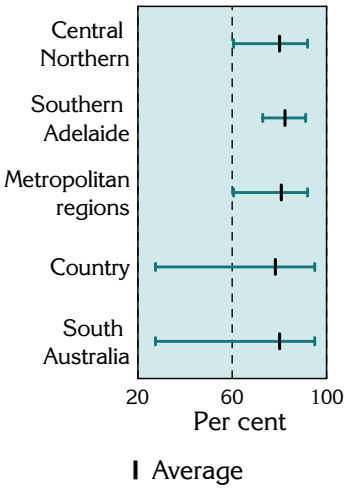
The largest numbers of 16 year olds in full-time secondary school education were in Tea Tree Gully - South (402 students) and - North (392), Salisbury - South-East (340), Tea Tree Gully - Central (338), Salisbury - Inner North (315), Charles Sturt - Coastal (306) and Campbelltown - East (305).

Southern Adelaide

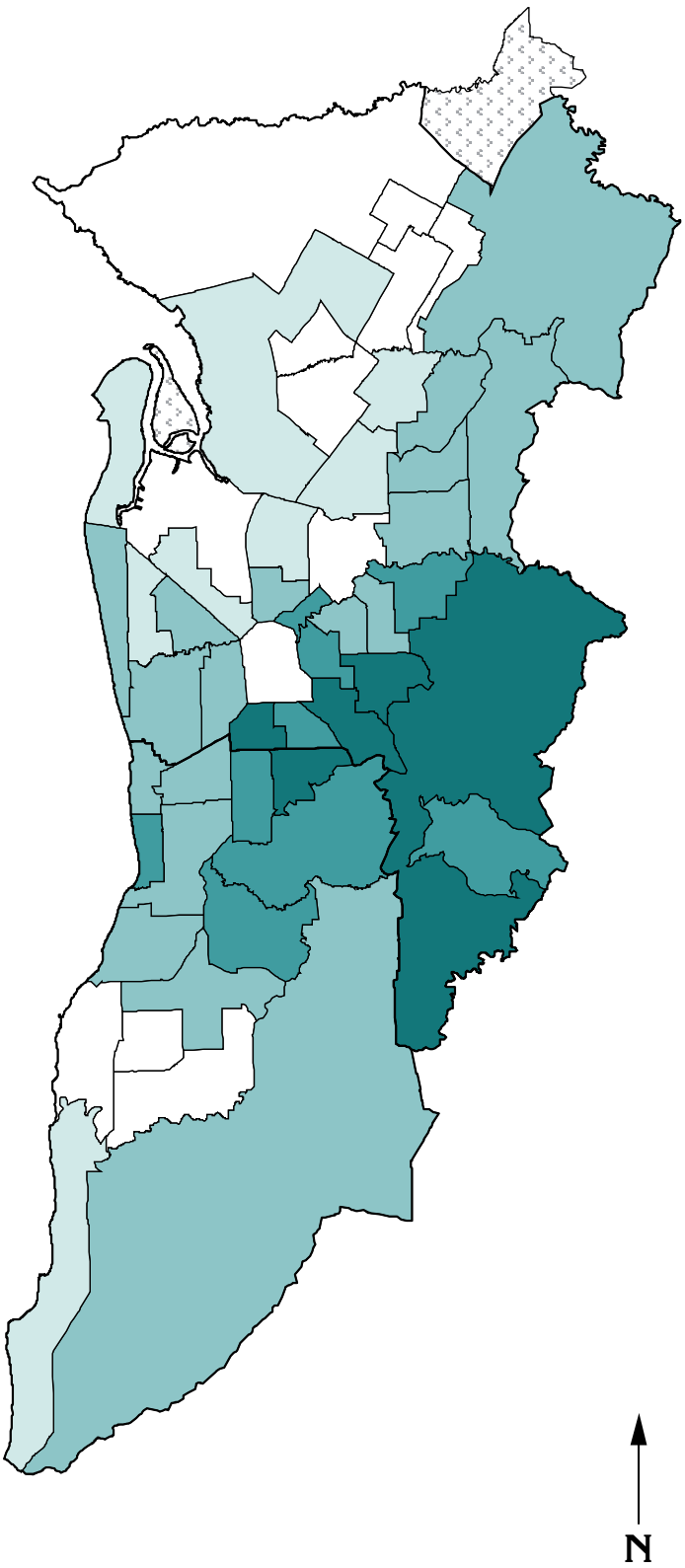
Despite a slightly higher overall participation rate in the south (82.4%, 3,818 full-time students), Mitcham - North-East (91.1%) was the only SLA mapped in the highest range (Map 4.25). There were also high rates in Mitcham - Hills (88.4%), Onkaparinga - Reservoir (87.5%), Holdfast Bay - South (86.8%) and Mitcham - West (86.2%). The SLAs with the lowest participation rates were Onkaparinga - North Coast (72.9%), Morphett (73.2%) and Hackham (74.9%).

The largest numbers of students were in Onkaparinga - Woodcroft (445 students) and - Reservoir (407) and Marion - South (331).

Map 4.25
Full-time participation in secondary school education at age 16, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent full-time participation in secondary school education at age 16, by SLA

- *90.0% or more*
- *85.0 to 89.9%*
- *80.0 to 84.9%*
- *75.0 to 79.9%*
- *fewer than 75.0%*
- *data not mapped*[*]

[*]*Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on unpublished data from the ABS ***Details of map boundaries are in Appendix 1.2***

Full-time participation in secondary school education at age 16, 2001

Country South Australia

The participation of 16 year olds in full-time secondary education was slightly lower in country South Australia (78.3%) than in the metropolitan regions (80.8%), with by far the lowest rate in **Northern and Far Western** (Table 4.35 and graph opposite).

The overall pattern of distribution of participation rates shows the very low rates in the country towns, as well as in the SLAs with the largest populations of Aboriginal people (Map 4.26).

Table 4.35: Regional totals, educational participation, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	1,179	79.3	7.2
Wakefield[1]	1,175	81.1	7.2
South East	684	78.7	4.2
Northern & Far Western	490	67.3	3.0
Eyre	365	78.8	2.2
Mid North	369	80.7	2.3
Riverland	386	79.8	2.4
Country SA	**4,648**	**78.3**	**28.4**
Central Northern	7,875	80.1	48.2
Southern	3,818	82.4	23.4
Metropolitan regions	**11,693**	**80.8**	**71.6**
South Australia	**16,341**	**80.1**	**100.0**

[1]**Gawler is included in Wakefield region**

The correlation analysis showed a strong association with female labour force participation and strong inverse associations with the Indigenous population, dwellings with no motor vehicle, unemployment and jobless families. These results, together with the very strong correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between high rates of full-time participation in secondary education at age 16 years and high socioeconomic status (Table 8.2).

The Regions

In **Wakefield** region, 81.1% of 16 year olds were participating in full-time education (1,175 students). There were high participation rates in Goyder (89.1%, 49 students), Yorke Peninsula - North (88.3%, 83) and Light (86.7%, 150); and relatively large numbers of students in Gawler (238, 79.1%), Clare and Gilbert Valleys (101, 81.5%) and Copper Coast (101, 75.4%).

Mid North had a participation rate of 80.7% (369 students), with high rates in Barunga West (93.8%, 30) and Port Pirie Balance (91.9%, 57). There were also high rates in Northern Areas (89.9%, 62) and Peterborough (85.3%, 29) and a large number of students in Port Pirie - City (141 students, 71.2%).

In the **Riverland**, 79.8% of 16 year olds (386 students) were in full-time education. The SLA of Renmark Paringa - Paringa had the highest rate (93.8%, 15 students), followed by Loxton Waikerie - West (89.3%, 50).

The **Hills Mallee Southern** region had the largest number of 16 year olds participating in full-time education, with 1,179 students (79.3% of 16 year olds). The SLAs of Southern Mallee (95.0%, 19) and Karoonda East Murray (92.3%, 12) also had high rates; the lowest rate was in The Coorong (69.6%, 64). The largest numbers of students were in Mount Barker - Central (192 students, 83.8%), Murray Bridge (173, 74.2%), Adelaide Hills Balance (105, 82.0%) and Mount Barker Balance (101, 82.8%).

There were 365 students (78.8% of 16 year olds) in full-time education in **Eyre**. The SLAs with the highest proportions were Cleve (94.7%, 18 students) and Kimba (91.7%, eleven). There were also high rates in Streaky Bay (88.9%, 24), Franklin Harbor (87.5%, 21) and Lower Eyre Peninsula (85.9%, 55). Port Lincoln had 164 students (79.2%). The lowest rate in this region was in Ceduna (58.5%, 24).

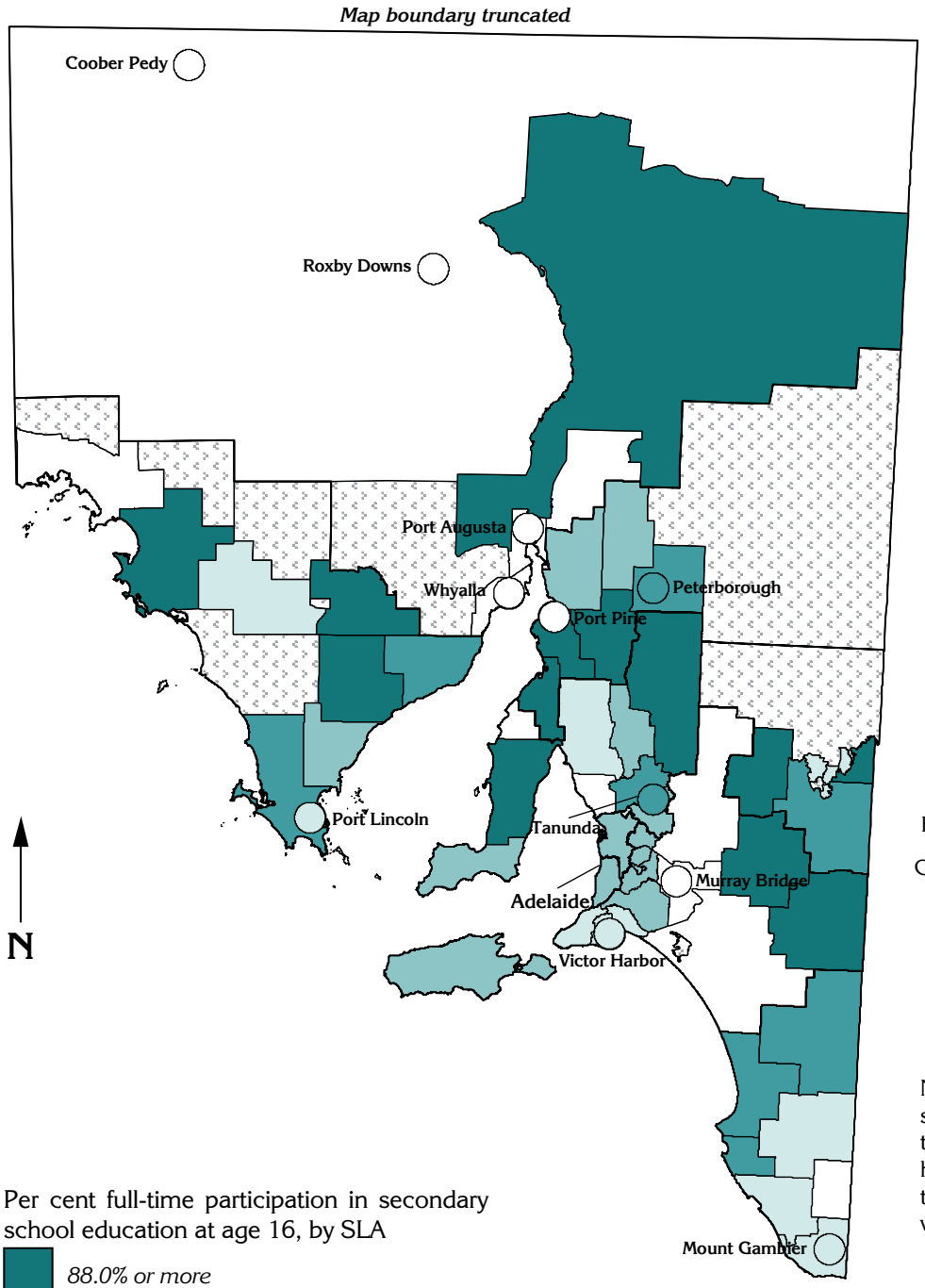
In the **South East**, 78.7% (684) of 16 year olds were full-time students. There were 246 students in Mount Gambier (76.6%), 103 in Wattle Range - West (79.8%) and 100 in Grant (78.7%). The lowest rate was in Wattle Range - East (68.6%, 24 students).

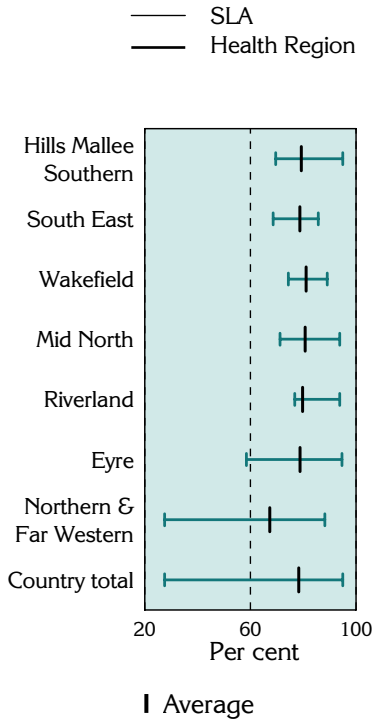
Just over two thirds of 16 year olds in **Northern and Far Western** were full-time students (67.3%, 490 students). Unincorporated Flinders Ranges had the highest rate (88.2%, 15) and Whyalla had the largest number of these students in country South Australia (254 students, 74.9%), with 149 in Port Augusta (70.3%). Low participation rates were recorded in Unincorporated Far North (27.5%, 22 students), Coober Pedy (53.1%, 17) and Flinders Ranges (68.8%, eleven).

ASGC Remoteness classification

The participation of 16 year olds in full-time education was relatively high across the first four remoteness areas; however, fewer than half (48.8%) of 16 year olds living in the Very Remote areas were participating in full-time education. The relatively high proportion of Indigenous people in these areas is likely to have influenced these rates.

Map 4.26
Full-time participation in secondary school education at age 16, South Australia, 2001





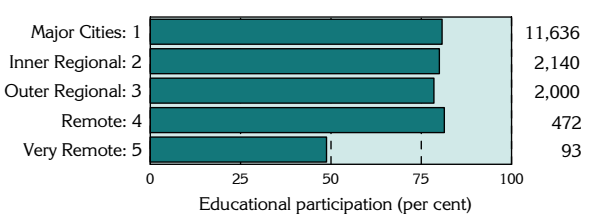
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent full-time participation in secondary school education at age 16, by SLA

- *88.0% or more*
- *84.0 to 87.9%*
- *80.0 to 83.9%*
- *76.0 to 79.9%*
- *fewer than 76.0%*
- *data not mapped*[*]

[*]*Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases*

ASGC Remoteness classification



Source: Calculated on unpublished data from the ABS

Details of map boundaries are in Appendix 1.2

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South Australian Certificate of Education achievement scores

From 1992, students have been able to register with the Senior Secondary Assessment Board of South Australia (SSABSA) for the South Australian Certificate of Education (SACE), an upper secondary program of study normally undertaken over two years. Subjects within the SACE are classified as Stage 1, corresponding to Year 11 level of secondary school, and Stage 2, corresponding to Year 12 level (SSABSA 2000).

The data presented are the average achievement score for all subjects completed[1] by students aged less than 19 years in each SLA[2] in 2002. Data are presented separately for publicly examined subjects (PES), publicly assessed subjects (PAS) and school assessed subjects (SAS). PES, PAS and SAS differ in the academic standard of the courses offered and in the method of assessment. Until 1996, the selection criteria for university-level courses at the three metropolitan universities required the completion of at least four publicly examined subjects. For 1997 and later years, PAS was accepted for all courses at Flinders University and the University of South Australia. Due to the introduction of PAS, it is not possible to compare the scores for PES and SAS over time.

SSABSA allocates subject achievement scores and an associated grade to each student, according to a reporting scale (Table 4.36).

Table 4.36: Subject achievement scores

Achievement score	Grade	Description
20	A	Outstanding achievement
17-19	A	Very high achievement
14-16	B	High achievement
11-13	C	Competent achievement
8-10	D	Marginal achievement
3-7	E	Low achievement
0-2		Requirements not met

Source: SSABSA Handbook, 2000

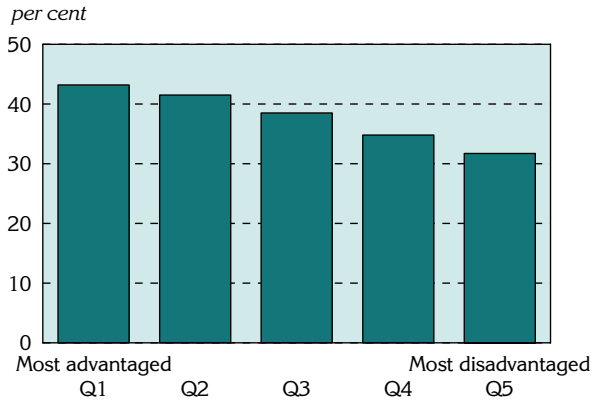
For the following analysis, an average achievement score has been calculated for each SLA. The score has not been shown where there were fewer than five students in any SLA. The SLA is the SLA of the address given by students as their home address.

The total number of SACE students (PES, PAS and SAS) is shown in Figure 4.5 as a proportion of the population aged 15 to 18 years, by quintile of socioeconomic disadvantage of area[3].

Quintile 1 comprises the postcodes of highest socioeconomic status (most advantaged areas) and Quintile 5 comprises the postcodes of lowest socioeconomic status (most disadvantaged areas).

The highest proportions of the 15 to 18 year old population in South Australia registered with SSABSA live in the most advantaged areas (Quintiles 1 and 2); the proportion in the most disadvantaged areas (Quintile 5) is 31.7%, 26.6% lower than in Quintile 1 (Figure 4.5).

Figure 4.5: SACE students as a proportion of people aged 15 to18 yrs, South Australia, 2002



Source: Calculated on data from SSABSA

Table 4.37 shows a comparison of the type of SACE assessment undertaken by students under 19 years of age in each region. The proportions vary from 40.1% of subjects undertaken by students in the metropolitan regions being PES and 32.4% being SAS; to 31.5% being PES in the Mid North, and 41.8% being SAS.

Table 4.37: Type of SACE assessment by region, 2002

Region	% in Region			Total (No.)
	PES	PAS	SAS	
Hills Mallee Southern	35.1	28.9	36.0	2,203
Wakefield[1]	37.3	27.7	35.0	2,168
South East	33.2	30.7	36.0	1,267
Northern & Far Western	32.4	32.0	35.6	836
Eyre	35.6	25.4	38.9	727
Mid North	31.5	26.7	41.8	649
Riverland	36.4	31.3	32.4	671
Country SA	**34.9**	**28.9**	**36.2**	**8,052**
Central Northern	40.1	27.4	32.5	15,142
Southern	40.3	27.5	32.2	7,168
Metropolitan regions	**40.1**	**27.5**	**32.4**	**22,801**
South Australia	**38.8**	**27.8**	**33.4**	**30,853**

[1]Gawler is included in Wakefield region only
Source: Calculated on data from SSABSA

[1] Includes details where students have gained a score in at least one subject in Stage 2 of SACE

[2] Postcode data provided by SSABSA were allocated to SLAs for mapping: see Methods chapter for details of this process

[3] This process is described in Chapter 2, Methods

Average publicly examined subject achievement scores, 2002

As noted above, young people completing Year 12 are more likely to make a successful initial transition to further education, training and work. Completion of publicly examined subjects (PES) is an important achievement and one that is necessary for entrance to a number of tertiary education courses.

Average PES scores achieved by students living in Metropolitan Adelaide were marginally higher than those achieved by country residents (Table 4.38).

Table 4.38: Average publicly examined subject achievement scores

Scores out of 20

Section of State	2002
Metropolitan Adelaide (incl. Gawler)	14.0
Country	13.5
State total	13.9

Metropolitan regions

In 2002, there were 8,965 students aged less than 19 years from the metropolitan regions who completed publicly examined subjects (PES), with an average score of 14.0 (Table 4.38). The highest average scores are found in a solid block of SLAs, running from the city centre, through the inner eastern and southern suburbs, to the Adelaide Hills; the lowest average scores were located in SLAs in the outer north and in the outer south, along the coast (Map 4.27). Note that the SLA is of the home address of the student and not necessarily the address of the SLA in which they attended school.

The correlation analysis showed a very strong association at the SLA level between high PES scores and the variables of managers and administrators, and professionals, female labour force participation, high income families, and full-time participation in education; and a strong association with Internet use at home. There was a very strong inverse association with unskilled and semi-skilled workers, the TFR, children aged 0 to 4 years, jobless families and single parent families; and a strong inverse association with low income families, children aged 5 to 14 years, unemployment, the Indigenous population, and public rental housing. These results, together with the very strong correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between high average PES subject scores and high socioeconomic status (Table 8.1).

Central Northern Adelaide

There were 6,077 students in the Central Northern region, with an average PES score of 14.0 in 2002; both the highest and lowest SLA-level scores in the metropolitan regions were found in this region (see graph opposite). The SLA with the highest average score was Burnside - North-East (a score of 15.9, 225 students), with high scores also in Norwood Payneham St Peters – West (15.7, 142 students), Unley - East (15.5, 183), Burnside - South-West (15.4, 244), Walkerville (15.3, 75), Adelaide (15.3, 68), Norwood Payneham St Peters - East (15.2, 111), Unley - West (15.0, 136), Adelaide Hills - Ranges (15.0, 130), Campbelltown - West (14.8, 175), Campbelltown - East (14.6, 283), Adelaide Hills - Central (14.6, 167) and Prospect (14.6, 162).

Tea Tree Gully - North (329 students) and - South (315 students) had the largest numbers of enrolled students in the region.

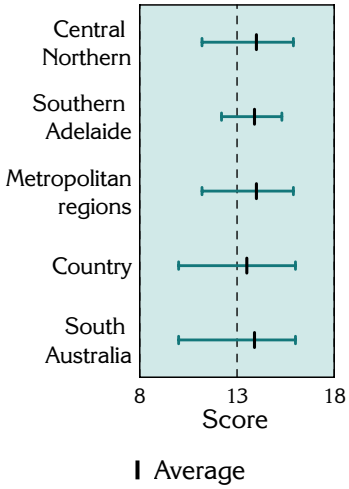
The SLAs with the lowest average PES scores in the metropolitan regions were Playford - Elizabeth (11.2, 144 students) and Playford - West Central (11.9, 67). There were also low scores in Playford East - Central (12.3, 92), Salisbury - Central (12.4, 214), Salisbury - Inner North (12.4, 164), Playford - West (12.6, 48) and Playford - Hills (12.9, 17).

Southern Adelaide

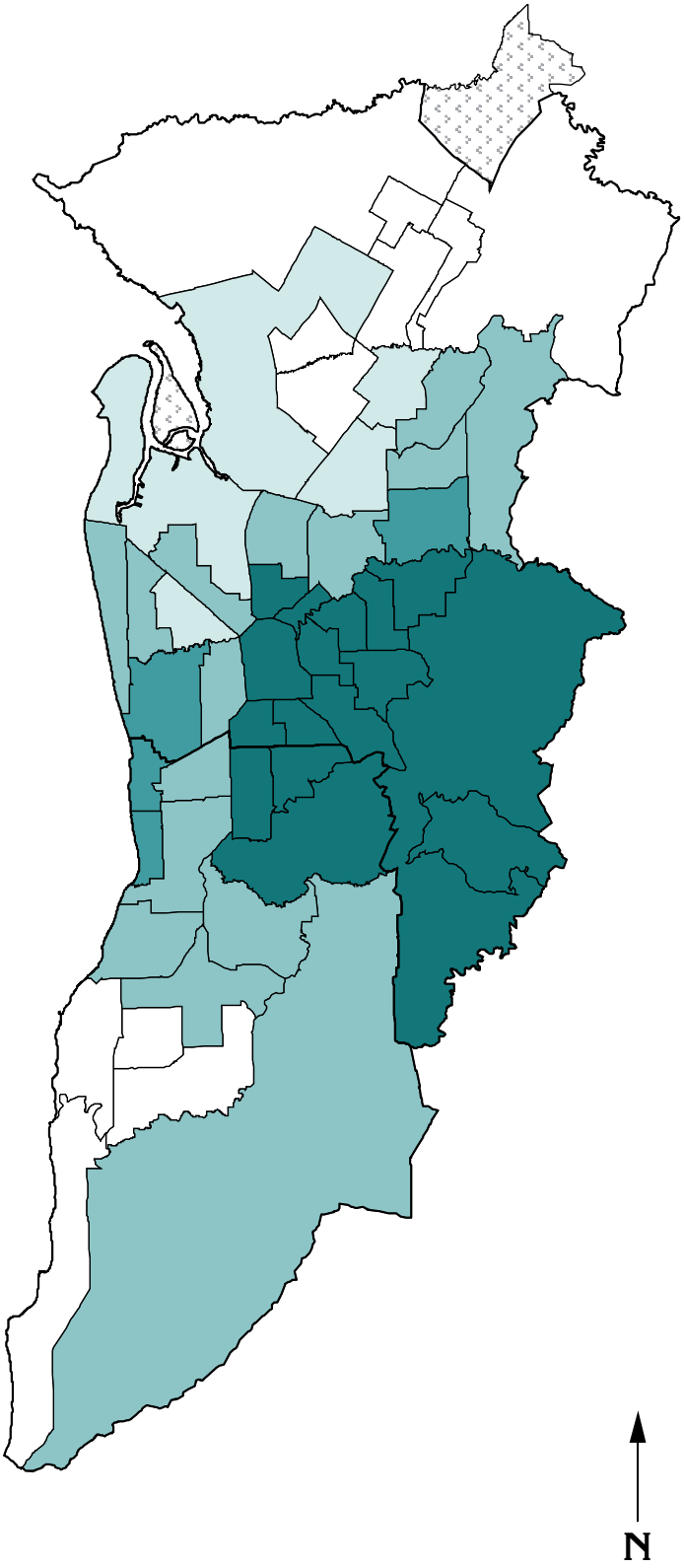
There were 2,888 students in the Southern region with an average PES score of 13.9. The SLAs with the highest average PES scores were Mitcham - North-East (15.3, 217 students), Mitcham - Hills (14.7, 294) and Mitcham - West (14.6, 206). Onkaparinga - Woodcroft (325 students) and Reservoir (320 students) had the largest number of enrolled PES students in the region.

The lowest average PES scores were recorded for students living in Onkaparinga - North Coast (12.2, 102 students), - Hackham (12.2, 77), - Morphett (12.3, 175) and - South Coast (12.4, 158).

Map 4.27
Average publicly examined subject achievement scores, metropolitan regions, 2002



Note: The black vertical lines show the average PES score in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Average publicly examined subject achievement scores, by SLA

- *14.5 and above*
- *14.0 to 14.4*
- *13.5 to 13.9*
- *13.0 to 13.4*
- *below 13.0*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from SSABSA ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In 2002, there were 2,991 students aged less than 19 years from country areas who completed PES subjects, achieving an average score of 13.5.

The lowest average PES scores were recorded in **Northern and Far Western** (12.5) and **Riverland** (12.9) and the highest in **South East** (14.4) (Table 4.39 and graph opposite).

The low scores in the majority of the towns are a striking feature of the distribution of PES scores in country South Australia. High average PES scores were achieved by students living in **South East** and in a number of areas scattered throughout the State (Map 4.28).

Note that the SLA is of the home address of the student, and is not necessarily the address of the SLA in which they attended school, which could have been a neighbouring SLA, or an SLA in the metropolitan regions.

Table 4.39: Regional totals, average PES achievement scores, 2002

Region	No.	Ave Score
Hills Mallee Southern	774	13.4
Wakefield[1]	808	13.6
South East	421	14.4
Northern & Far Western	271	12.5
Eyre	259	13.3
Mid North	204	13.4
Riverland	244	12.9
Country SA	**2,991**	**13.5**
Central Northern	6,077	14.0
Southern	2,888	13.9
Metropolitan regions	8,965	14.0
South Australia	**11,956**	**13.9**

[1]**Gawler is included in Wakefield region**

There was no consistent evidence in the correlation analysis of an association at the SLA level between high average PES scores and socioeconomic status (Table 8.2).

The Regions

The highest regional average PES score in country South Australia was recorded in the **South East** (a score of 14.4, with 421 students). Within this region, there were high scores for students living in Wattle Range - East (15.2, 13 students), Lacepede (15.0, 21), Tatiara (14.7, 61), Naracoorte and Lucindale (14.5, 64), Grant (14.4, 42) and Mount Gambier (14.3, 157). The lowest average score was in Wattle Range - West (13.3, 57 students).

In **Wakefield,** the average PES score was 13.6 (808 students). The highest scores in the region were in Goyder (14.3, 34 students), Barossa - Angaston (14.1, 63) and Yorke Peninsula - North (14.0, 42). The lowest were recorded for Yorke Peninsula - South (12.8, 22) and Wakefield (12.9, 44).

The average PES score in the **Hills Mallee Southern** region was 13.4 (774 students), and the highest average scores were 14.2 in Mount Barker - Central (123 students) and 14.1 in Mount Barker Balance (71 students). The lowest averages were recorded in Murray Bridge (12.3, 95), Alexandrina - Coastal (12.7, 65) and Kangaroo Island (12.7, 44).

In the **Mid North,** the average PES score was 13.4 (204 students). The SLAs with the highest averages were Northern Areas (14.7, 50 students), Mount Remarkable (14.3, 20) and Orroroo/ Carrieton (14.0, eight). The lowest average scores in this region were recorded in Port Pirie City (12.3, 84) and Barunga West (12.7, seven).

Students in the **Eyre** region had an average PES score of 13.3 (259 students). The SLA with the highest average in country South Australia was Le Hunte (16.0, ten students). There were also high averages in Cleve (14.7, eleven students), Kimba (14.4, ten), and Tumby Bay (14.2, 22). The lowest average scores in this region were recorded for Streaky Bay (10.0, 16 students), Elliston (11.8, eight), Franklin Harbor (12.5, ten) and Ceduna (12.6, 15).

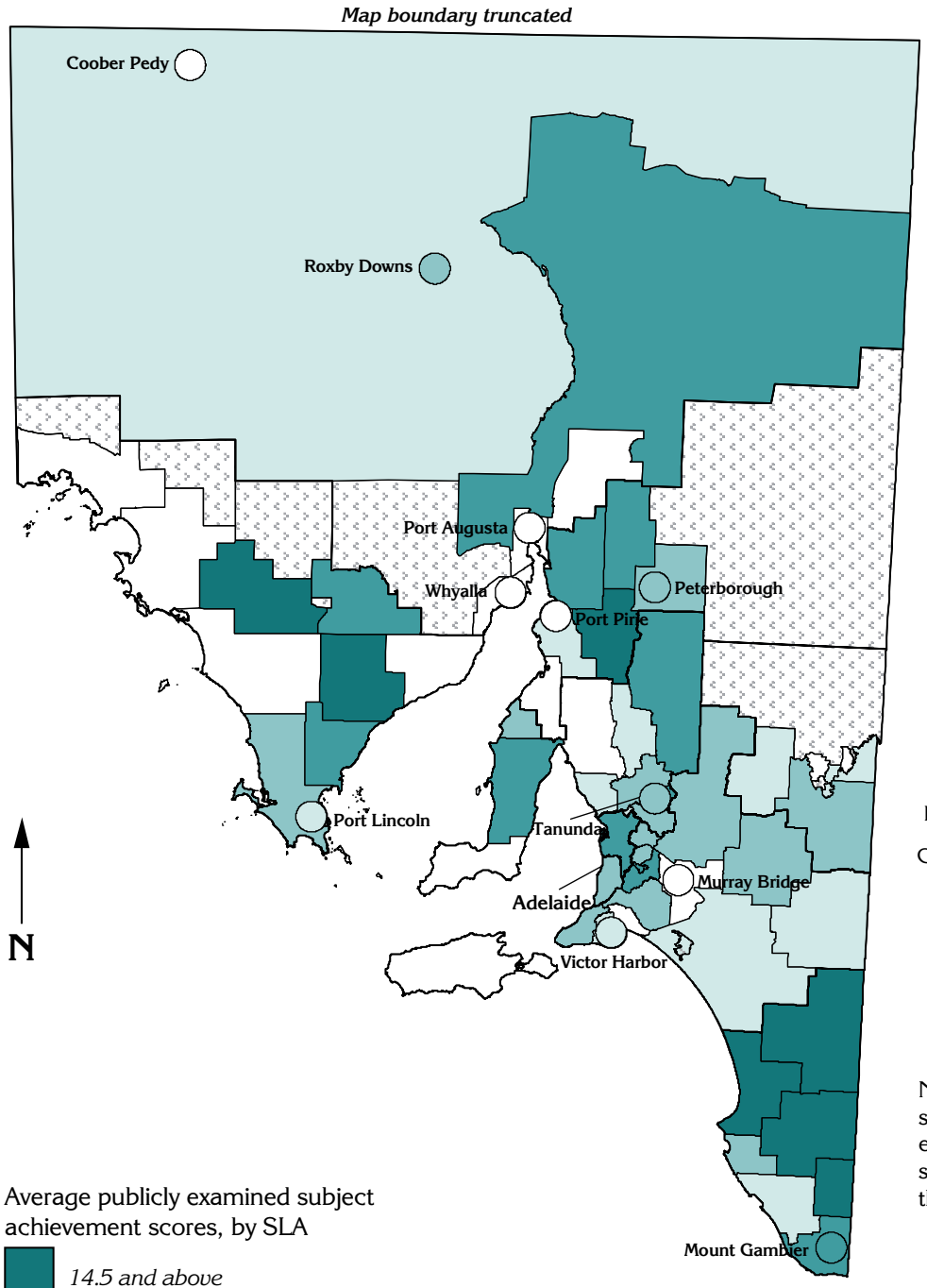
The average PES score for the **Riverland** was 12.9 (244 students). The lowest scores were recorded in the SLAs of Berri and Barmera - Barmera (12.2, 35 students) and Renmark Paringa - Renmark (12.3, 61 students).

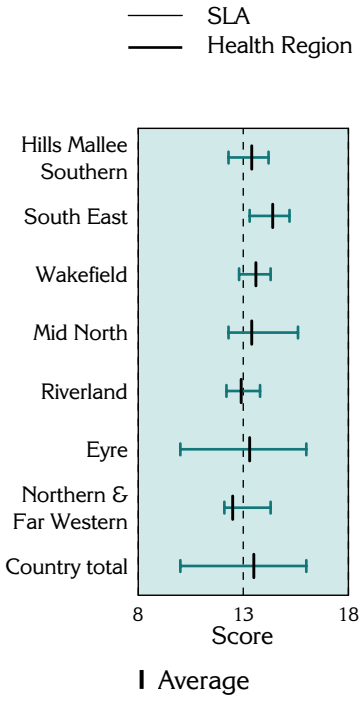
The average PES score in the **Northern and Far Western** region was 12.5 (271 students). The highest average score in this region was recorded for Unincorporated Flinders Ranges (14.3, eight students). The lowest average PES scores in the region were in Coober Pedy (11.1, six), Whyalla (12.1, 143 students), Port Augusta (12.7, 81), and Flinders Ranges (12.7, ten).

ASGC Remoteness classification

Average achievement scores for publicly examined subjects decreased with increasing remoteness. The highest score, 14.0, was recorded for students from the Major Cities areas, with the lowest in the Very Remote areas (12.9).

Map 4.28
Average publicly examined subject achievement scores, South Australia, 2002



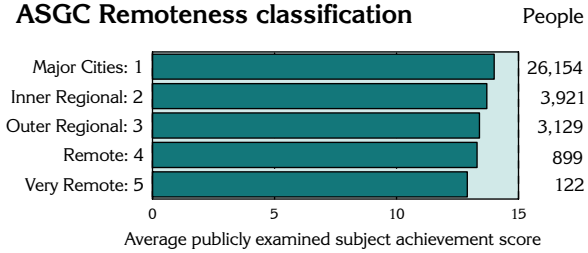


Note: The black vertical lines show the average PES score in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Average publicly examined subject achievement scores, by SLA

- *14.5 and above*
- *14.0 to 14.4*
- *13.5 to 13.9*
- *13.0 to 13.4*
- *below 13.0*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100 ore there were fewer than five cases*



Source: Calculated on data from SSABSA

Details of map boundaries are in Appendix 1.2

Average publicly assessed subject achievement scores, 2002

Average publicly assessed subject (PAS) scores achieved by students living in Metropolitan Adelaide were marginally lower than those achieved by country residents (Table 4.40), in contrast to average PES scores.

Table 4.40: Average publicly assessed subject achievement scores

Scores out of 20

Section of State	2002
Metropolitan Adelaide (incl. Gawler)	13.4
Country	13.8
State total	13.5

Metropolitan regions

There were 6,116 students aged less than 19 years from the metropolitan regions in 2002 who achieved an average publicly assessed subject (PAS) achievement score of 13.4 (Table 4.41). The highest average scores were recorded for students from a number of inner eastern and south-eastern SLAs.

Note that the SLA is of the home address of the student and not necessarily the address of the SLA in which they attended school.

The correlation analysis showed a very strong association with the variables for managers and administrators, and professionals; high income families; home Internet use; female labour force participation; and full-time educational participation. There was a very strong inverse association with unskilled and semi-skilled workers; low income and jobless families; and a strong inverse association with single parent families; the Indigenous population; public rental dwellings; unemployment; the TFR; and children aged 0 to 4 years. These results, together with the correlation of substantial significance with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between high average PAS scores and high socioeconomic status (Table 8.1).

Central Northern Adelaide

In the Central Northern region, there were 4,147 students with an average PAS score of 13.4. Students living in a large number of SLAs had scores in the lowest range mapped, while other SLAs had the highest average PAS scores in the metropolitan regions (Map 4.29).

The highest PAS scores in the region were in the SLAs of Norwood Payneham St Peters - West (15.2, 66 students), Unley - East (15.2, 97), Burnside - South-West (15.0, 128), Unley - West (14.8, 76), Burnside - North-East (14.8, 115) and Adelaide (14.6, 24).

The SLAs with the lowest PAS scores were Playford - Elizabeth (11.5, 134 students), Playford - West Central (11.7, 65), - West (11.8, 44), and - East Central (12.1, 86), Port Adelaide Enfield - Inner (12.1, 55), Salisbury - Inner North (12.2, 142), Salisbury - Central (12.2, 171), Port Adelaide Enfield - Port (12.4, 115), Playford - Hills (12.5, 16), Port Adelaide Enfield - East (12.5, 106), Port Adelaide Enfield - Coast (12.6, 168) and Charles Sturt - North-East (12.8, 113).

Tea Tree Gully - North (255 students), - South (240 students) and - Central (201 students) had the largest numbers of enrolled students in the region.

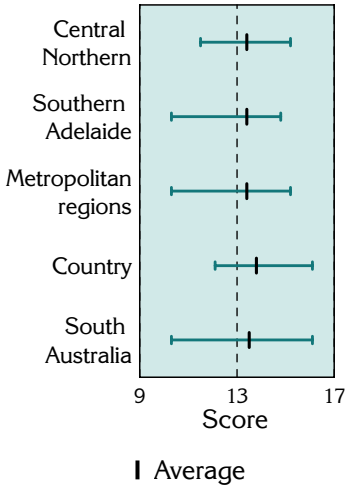
Southern Adelaide

There were 1,973 students in the south with an average PAS score of 13.4. The SLAs with the highest PAS scores were Mitcham - North-East (14.8, 126 students), Mitcham - Hills (14.7, 175), and Holdfast Bay - North (14.4, 89).

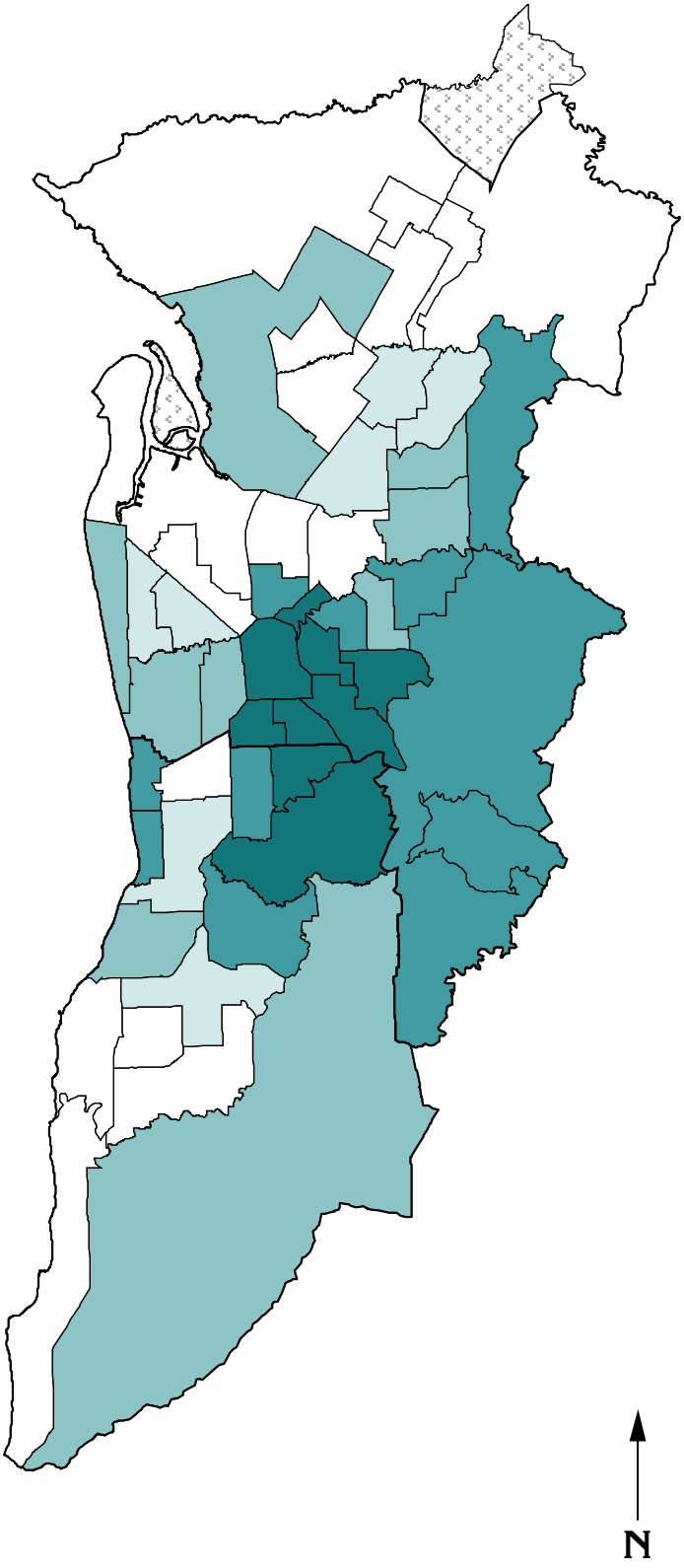
The lowest average PAS score in the metropolitan regions was recorded in Marion - North (10.3, 109 students). There were also low scores in the Southern SLAs of Onkaparinga - Hackham (12.4, 81), - Morphett (12.5, 154), - South Coast (12.6, 129) and - North Coast (12.7, 85).

Onkaparinga - Woodcroft (234 students) and Reservoir (209 students) had the largest numbers of enrolled students in the region.

Map 4.29
Average publicly assessed subject achievement scores, metropolitan regions, 2002



Note: The black vertical lines show the average PAS score in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Average publicly assessed subject achievement scores, by SLA

- *14.5 and above*
- *14.0 to 14.4*
- *13.5 to 13.9*
- *13.0 to 13.4*
- *below 13.0*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from SSABSA ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In 2002, 2,472 students aged less than 19 years from country areas of South Australia completed PAS subjects, with an average score of 13.8.

The lowest average PAS score was recorded in the **Northern and Far Western** region (12.7) and the highest was in **South East** (14.1) (Table 4.41 and graph opposite).

Table 4.41: Regional totals, average PAS achievement scores, 2002

Region	No.	Ave Score
Hills Mallee Southern	637	14.0
Wakefield[1]	600	13.6
South East	390	14.1
Northern & Far Western	267	12.7
Eyre	185	13.9
Mid North	174	13.7
Riverland	210	13.5
Country SA	**2,472**	**13.8**
Central Northern	4,147	13.4
Southern	1,973	13.4
Metropolitan regions	**6,116**	**13.4**
South Australia	**8,588**	**13.5**

[1]**Gawler is included in Wakefield region**

As was the case for PES students, the low average PAS scores in the majority of the towns are a striking feature of the distribution of PAS scores in country South Australia (Map 4.30). Note that the SLA is of the home address of the student, and is not necessarily the address of the SLA in which they attended school, which could have been a neighbouring SLA, or an SLA in the metropolitan regions.

The correlation analysis showed a strong association with the variables for managers and administrators, and professionals; and a strong inverse association with single parent families. These correlations and the weak positive correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between high socioeconomic status and high average PAS scores (Table 8.2).

The Regions

There were 390 students from the **South East**, with an average PAS score of 14.1. Within this region, there were high average scores of students from the SLAs of Lacepede (15.1, 19 students), Naracoorte and Lucindale (14.9, 47), Grant (14.5, 42), Tatiara (14.3, 49) and Mount Gambier (14.1, 143). The lowest scores were in Robe (13.1, 12 students), and Wattle Range - West (13.1, 64) and - East (13.3, 14).

There were 637 students from the **Hills Mallee Southern** region, with an average PAS score of 14.0. A number of SLAs in this region had high average scores, including Karoonda East Murray (15.7, eight students), Mount Barker - Central (14.6, 95), Adelaide Hills Balance (14.5, 58), Murray Bridge (14.3, 89), Alexandrina - Strathalbyn (14.3, 48), Adelaide Hills - North (14.1, 46) and Mount Barker Balance (14.0, 50). Yankalilla had the lowest average PAS score of 12.1 (20 students).

The average PAS score for students from the **Eyre** region was 13.9 (185 students). A number of SLAs had high average scores (although with fairly small numbers of students), the highest being Kimba (15.5, ten students), Cleve (15.4, eight), Le Hunte (15.0, 13), Tumby Bay (14.7, 14), Elliston (14.6, eight), Streaky Bay (14.1, 19) and Ceduna (14.0, 13). Port Lincoln had the lowest average PAS score of 12.6 for this region (63 students).

PAS students from the **Mid North** region had an average PAS score of 13.7 (174 students). The highest average PAS scores occurred in the SLAs of Orroroo/Carrieton (16.1, eight students), Mount Remarkable (15.0, 16 students) and Northern Areas (14.0, 40). There was a low average score in Port Pirie - City (12.8, 69).

There were 600 students from the **Wakefield** region, with an average PAS score of 13.6. Within this region, there were high average scores in the SLAs of Wakefield (15.1, 38 students), Yorke Peninsula - South (14.7, 19), Barossa - Tanunda (14.3, 25) and Light (14.2, 79). There was a low average PAS score in Mallala (12.7, 41).

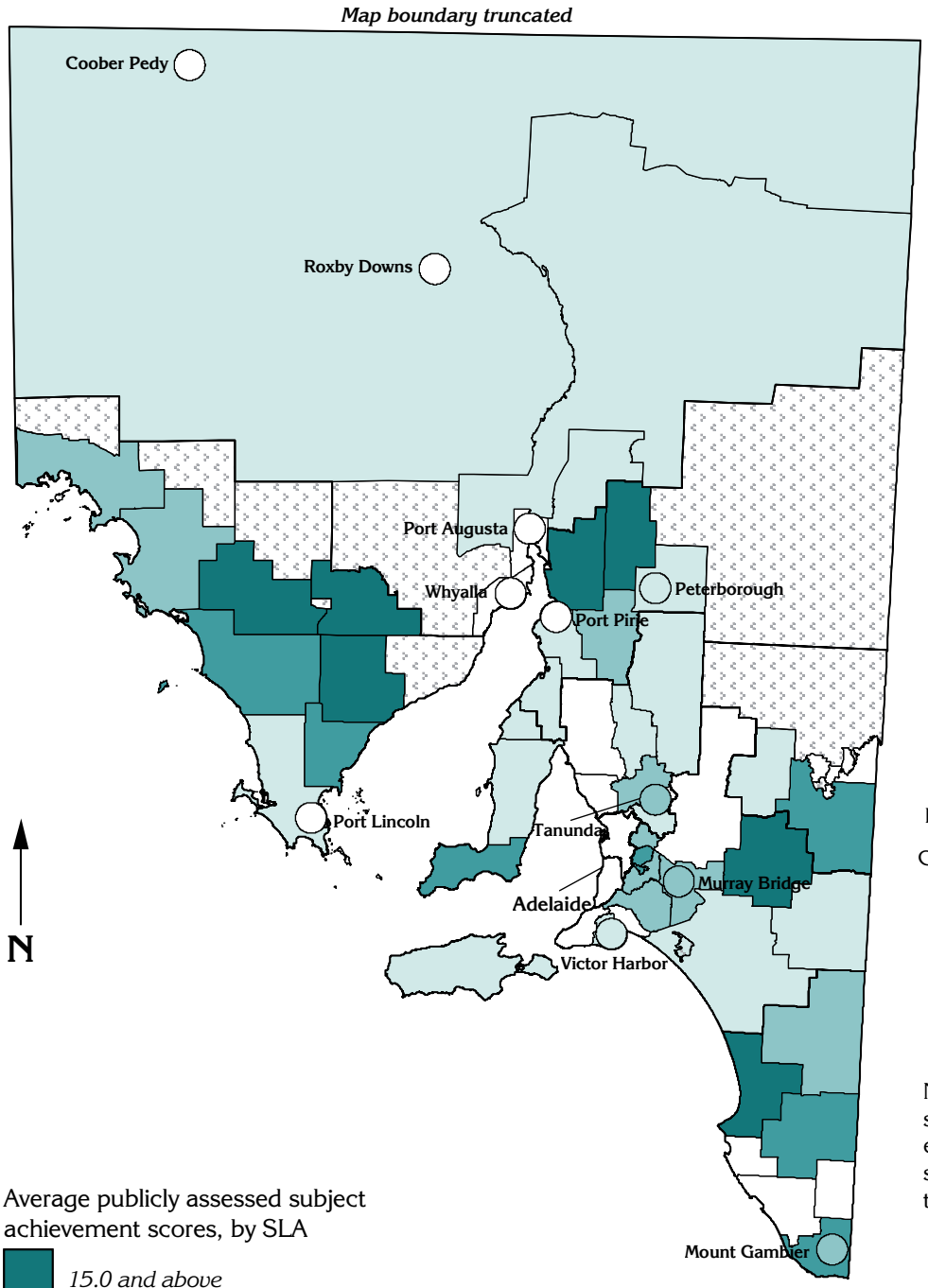
In the **Riverland**, the average PAS score was 13.5 (210 students). Loxton Waikerie - East had a high average score of 14.6 (45 students). There were low averages in the SLAs of Berri and Barmera - Barmera (12.8, 34 students) and Renmark Paringa - Paringa (12.9, six).

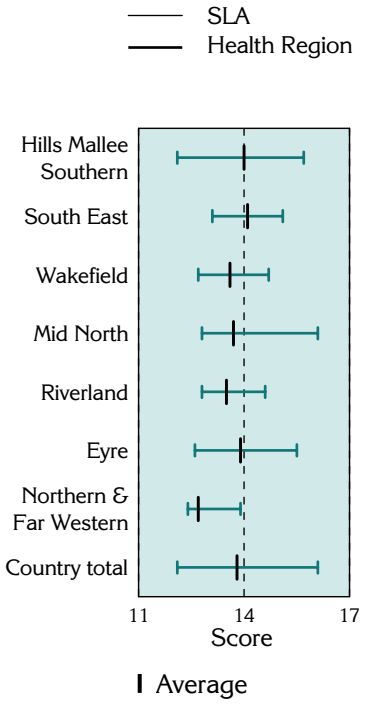
Students from **Northern and Far Western** had an average PAS score of 12.7 (267 students). There were low average scores in the SLAs of Whyalla (12.4, 144 students), Roxby Downs (12.8, 14 students) and Port Augusta (12.8, 72).

ASGC Remoteness classification

With the exception of the score in the Outer Regional areas (13.5), average PAS achievement scores increased incrementally across the remoteness classes, from 13.4 for students from Major Cities areas to 14.2 in the Very Remote areas.

Map 4.30
Average publicly assessed subject achievement scores, South Australia, 2002





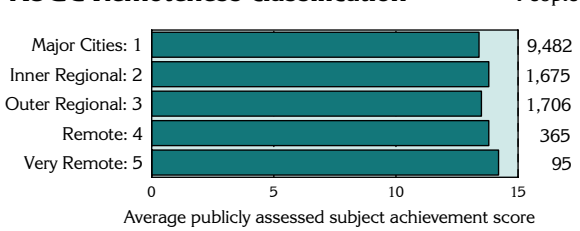
Note: The black vertical lines show the average PAS score in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Average publicly assessed subject achievement scores, by SLA

- *15.0 and above*
- *14.5 to 14.9*
- *14.0 to 14.4*
- *13.5 to 13.9*
- *below 13.5*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases*

ASGC Remoteness classification



Source: Calculated on data from SSABSA

Details of map boundaries are in Appendix 1.2

Average school assessed subject achievement scores, 2002

Average school assessed subject (SAS) scores achieved by students living in Metropolitan Adelaide were marginally lower than those achieved by country residents (Table 4.42), in contrast to PES scores.

Table 4.42: Average school assessed subject achievement scores

Scores out of 20

Section of State	2002
Metropolitan Adelaide (incl. Gawler)	12.3
Country	12.5
State total	12.4

Metropolitan regions

In 2002, the average school assessed subject (SAS) score for students aged less than 19 years from the metropolitan regions was 12.3, with 7,224 students.

The highest average SAS scores were recorded for students from a group of areas very similar to those with the highest scores for PAS, including a number of inner eastern and southern suburbs, and in the Adelaide Hills. Students with the lowest scores lived in the north-western and outer northern SLAs, and along the coast in the outer south (Map 4.31). Note that the SLA is of the home address of the student and is not necessarily the address of the SLA in which they attended school.

The correlation analysis showed a very strong association with the variables for managers and administrators, and professionals; high income families, female labour force participation and full-time educational participation. There was a very strong inverse association with unskilled and semi-skilled workers; low income, jobless and single parent families; the Indigenous population; unemployment; and the total fertility rate (TFR). These results, together with a very strong correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between high average SAS scores and high socioeconomic status (Table 8.1).

Central Northern Adelaide

There were 4,918 students in the Central Northern region that completed SAS subjects in 2002, achieving an average score of 12.2. The highest average scores were recorded for students living in Walkerville (14.6, 40 students), Burnside - North-East (14.0, 123) and - South-West (14.0, 144), Tea Tree Gully - Hills (13.7, 70), Unley - West (13.7, 80), Norwood Payneham St Peters - East (13.6, 58), and Adelaide Hills - Ranges (13.5, 85).

The SLAs with the lowest average SAS scores in Central Northern were Playford - Elizabeth (10.3, 180 students), - West Central (10.5, 85), - East Central (10.8, 110) and - Hills (11.2, 20); Salisbury - Central (10.8, 245), - Inner North (11.0, 207), Balance (11.2, 34) and South-East (11.6, 243); Port Adelaide Enfield - Port (11.0, 135) and - Inner (11.6, 76); and Charles Sturt - North-East (11.5, 146).

Tea Tree Gully - North (247 students) and - South (242), and Salisbury - Central (245) and - South-East (243), had the largest numbers of enrolled students in the region.

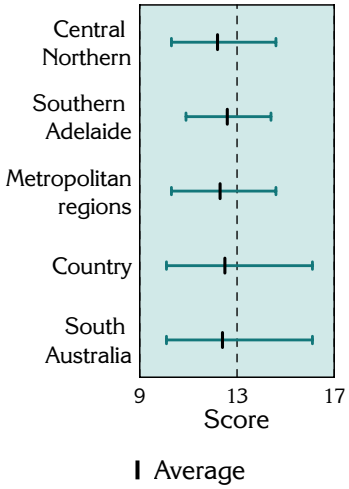
Southern Adelaide

There was a slightly higher average SAS score in the Southern region compared to the Central Northern region, a score of 12.6, with 2,307 students. High average scores were recorded for students in the SLAs of Mitcham - North-East (14.4, 131 students), Holdfast Bay - North (14.0, 97) and Mitcham Hills (13.7, 190).

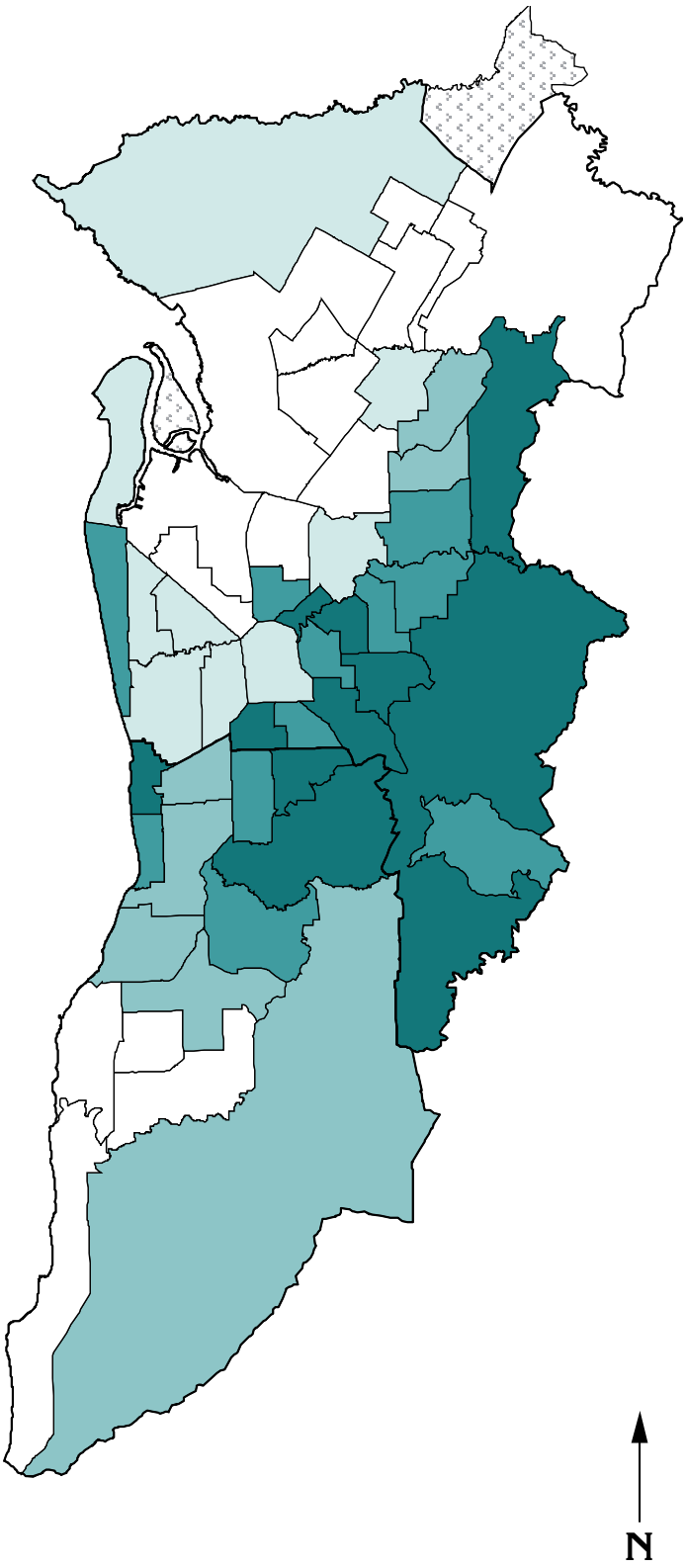
The lowest average SAS scores in the region were recorded for students living in the City of Onkaparinga in Onkaparinga - South Coast (10.9, 158 students), - North Coast (11.4, 110), - Hackham (11.7, 102), - Morphett (11.9, 171), - Hills (12.5, 102), and - Woodcroft (12.5, 264).

The SLAs of Onkaparinga - Woodcroft (264 students) and - Reservoir (240 students) had the largest numbers of students completing SAS subjects in the region.

Map 4.31
Average school assessed subject achievement scores, metropolitan regions, 2002



Note: The black vertical lines show the average SAS score in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Average school assessed subject achievement scores, by SLA

- *13.5 and above*
- *13.0 to 13.4*
- *12.5 to 12.9*
- *12.0 to 12.4*
- *below 12.0*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from SSABSA ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In 2002, there were 3,085 students aged less than 19 years from country areas of South Australia who completed SAS subjects. The region with the lowest average score in 2002 was **Northern and Far Western** (11.1) (Table 4.43 and graph opposite).

Table 4.43: Regional totals, average SAS achievement scores, 2002

Region	No.	Ave Score
Hills Mallee Southern	793	12.5
Wakefield[1]	760	12.2
South East	456	13.1
Northern & Far Western	298	11.1
Eyre	283	12.9
Mid North	271	13.1
Riverland	217	12.5
Country SA	**3,085**	**12.5**
Central Northern	4,918	12.2
Southern	2,307	12.6
Metropolitan regions	**7,224**	**12.3**
South Australia	**10,309**	**12.4**

[1]**Gawler is included in Wakefield region**

As seen in the maps of PES and PAS achievement scores, the low scores in the majority of the towns are a striking feature of the distribution of SAS scores in country South Australia (Map 4.32). Note that the SLA is of the home address of the student and is not necessarily the address of the SLA in which they attended school.

The correlation analysis showed a strong association between students completing SAS subjects and students completing PAS subjects, as well as managers and administrators, and professionals. There was a strong inverse association with people born in a non-English speaking country and resident for five years or more, at the SLA level (Table 8.2).

The Regions

In the **South East,** the average SAS score was 13.1, with 456 students completing SAS subjects. Within this region, there were high average scores in the SLAs of Mount Gambier (13.7, 157 students), Lacepede (13.6, 22) and Tatiara (13.5, 66). The lowest average scores in this region were in the SLAs of Wattle Range - East (10.2, 17 students), Robe (11.6, ten) and Naracoorte and Lucindale (12.2, 57).

The average SAS score in the **Mid North** was also 13.1 (271 students). There was a high average score in the SLA of Orroroo/Carrieton (16.1, eleven students). There were also high average SAS scores in the SLAs of Mount Remarkable (14.0, 25), and Peterborough (13.5, 33). The SLA with the lowest average score in this region was Port Pirie - City (12.5, 105).

In **Eyre,** the average SAS score was 12.9 (283 students). Within this region, there were high average scores in the SLAs of Tumby Bay (14.7, 20 students), Elliston (14.4, 12), Le Hunte (14.3, 16), Lower Eyre Peninsula (13.8, 42), Franklin Harbor (13.8, 15), Ceduna (13.5, 12) and Streaky Bay (13.5, 29). The SLA with the lowest SAS score in **Eyre** was Port Lincoln (a score of 11.6 and 115 students).

There were 793 students who completed SAS subjects in the **Hills Mallee Southern** region, with an average score of 12.5. The highest average scores in this region were in the SLAs of Karoonda East Murray (15.1, nine students), Southern Mallee (14.5, 14) and Kangaroo Island (14.0, 41). The SLAs with the lowest scores were Murray Bridge (10.7, 105), Yankalilla (11.9, 24), Alexandrina - Coastal (12.2, 60), Mid Murray (12.3, 43), Mount Barker - Central (12.3, 118) and Victor Harbor (12.4, 70).

The average SAS score in the **Riverland** was 12.5 (217 students). There were high average SAS scores in the SLAs of Loxton Waikerie - East (14.1, 48 students) and Loxton Waikerie - West (13.7, 29). The SLAs with low average scores in this region were Renmark Paringa - Renmark (10.6, 55 students), Berri and Barmera - Barmera (11.9, 34) and - Berri (12.2, 42), and Renmark Paringa - Paringa (12.3, eight).

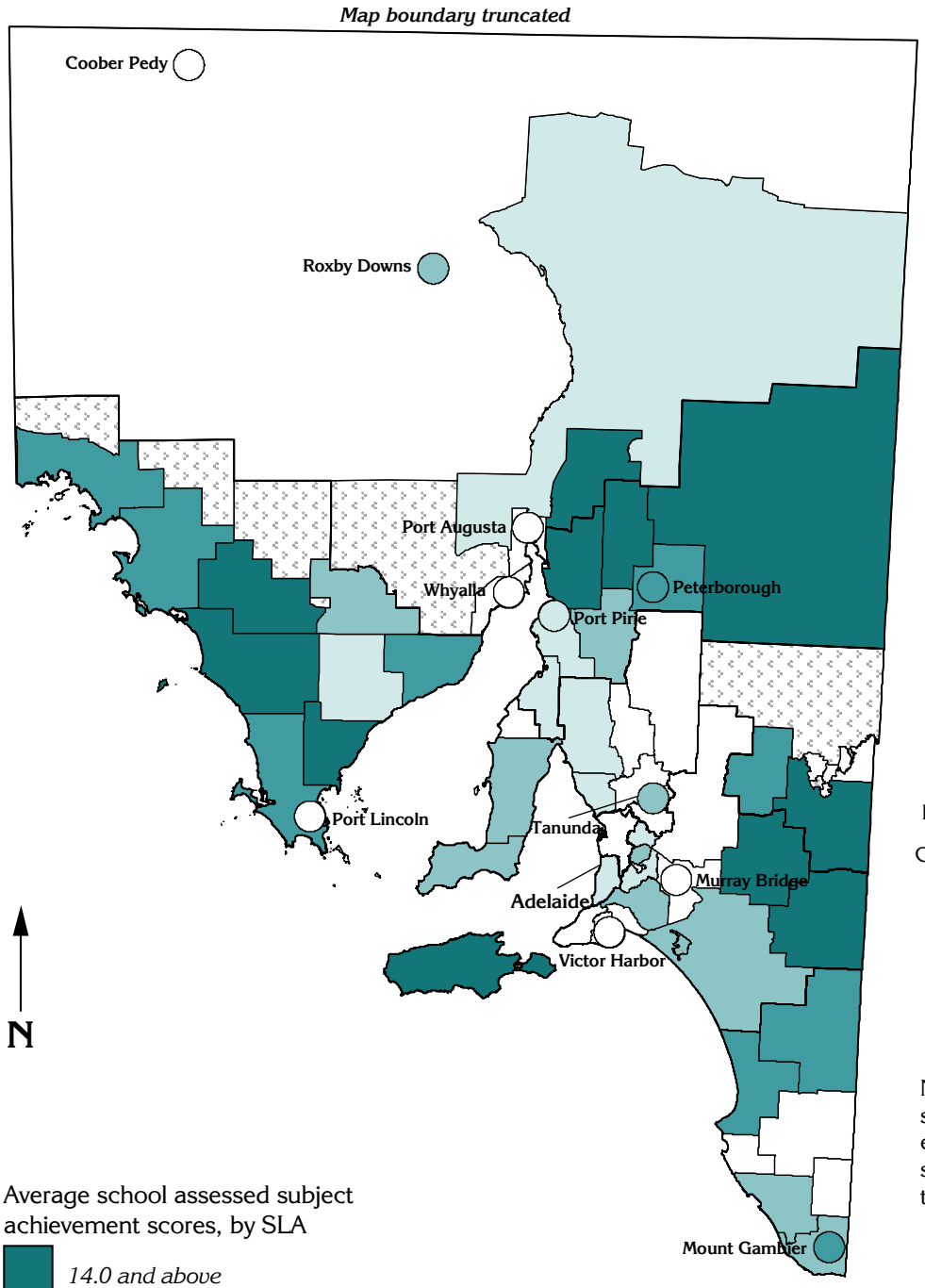
There were 760 students in the **Wakefield** region that completed SAS subjects, with an average score of 12.2. There were relatively low average scores in this region in the SLAs of Copper Coast (11.0, 54 students), Light (11.5, 85), Barossa - Angaston (11.6, 58) and - Barossa (11.8, 60), Gawler (12.1, 167 students), Goyder (12.3, 30) and Clare and Gilbert Valleys (12.4, 85).

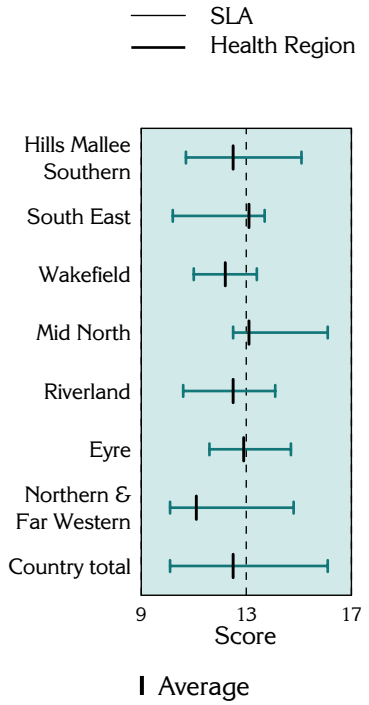
Students in the **Northern and Far Western** region achieved an average score of 11.1 (298 students). There was a high average score in Flinders Ranges (14.8, 14) and low scores in Whyalla (10.1, 165), Coober Pedy (10.2, eleven), Port Augusta (11.9, 71), and Unincorporated Far North (12.3, eight).

ASGC Remoteness classification

Average school assessed subject achievement scores were lowest in the Major Cities and Inner Regional categories (both 12.3), while relatively high scores were recorded in the Remote (13.1) and Very Remote (12.9) areas.

Map 4.32
Average school assessed subject achievement scores, South Australia, 2002





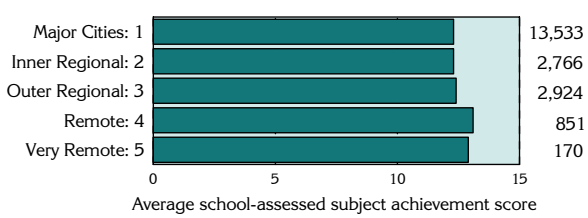
Note: The black vertical lines show the average SAS score in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Average school assessed subject achievement scores, by SLA

- *14.0 and above*
- *13.5 to 13.9*
- *13.0 to 13.4*
- *12.5 to 12.9*
- *below 12.5*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases*

ASGC Remoteness classification



Source: Calculated on data from SSABSA ***Details of map boundaries are in Appendix 1.2***

Aboriginal and Torres Strait Islander people, 2001

The proportion of the population identifying as Aboriginal and/or Torres Strait Islander in the 2001 Census represented 1.0% of the Metropolitan Adelaide population, and a higher 3.1% of those in country South Australia. The high annual percentage increase seen in Table 4.44 largely reflects the increasing preparedness of people to identify themselves as Indigenous on the Census form (as discussed at the beginning of this chapter). This change was most notable in Metropolitan Adelaide, with smaller (although still notable) changes being seen in country South Australia.

Table 4.44: Aboriginal and Torres Strait Islander people

Per cent

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	0.6	0.7	0.9	1.0	72.9
Country	2.3	2.5	2.9	3.1	36.4
South Australia	1.1	1.2	1.4	1.6	50.4

[1]**Per cent change over 15 years in the proportion of Aboriginal and Torres Strait Islander people**

Metropolitan regions

Aboriginal and Torres Strait Islander people comprised 1.0% of the population in the metropolitan regions in 2001, or 10,650 people. Although just 46.1% of South Australia's Aboriginal population live in the metropolitan regions compared with 72.0% of the State's total population, it is still a numerically significant group, for example, being nearly twice the size of the Aboriginal population of the State's **Northern and Far Western** region.

The highest proportions of Aboriginal people and Torres Strait Islanders were living in the north-west and outer northern SLAs of the Central Northern region, with very low proportions in the eastern and south-eastern SLAs (Map 4.33).

The correlation analysis showed a very strong association at the SLA level between high proportions of Aboriginal people and the variables for jobless families, single parent families, unemployment, public rental housing, low income families and unskilled and semi-skilled workers. There was also a strong association with dwellings with no motor vehicle. Very strong inverse associations were recorded with female labour force participation, full-time educational participation and high income families. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between the Indigenous population and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

All of the SLAs that mapped in the highest range (Map 4.33) were in the Central Northern region. These were the SLAs of Playford - West Central (3.9% Indigenous population) and - Elizabeth (3.0%); Port Adelaide Enfield - Port (2.5%), - Inner (2.3%), - Coast (1.9%) and - East (1.9%); Salisbury - Inner North (2.0%), - Central (1.8%) and - South-East (1.6%); and Charles Sturt - North-East (1.9%).

The largest numbers of Aboriginal people lived in a similar pattern of SLAs in the north and north-west of Adelaide, with the largest numbers in Playford - Elizabeth (740 Aboriginal people); Port Adelaide Enfield - Port (624), - East (505), - Coast (539) and - Inner (447); Salisbury - South-East (528), - Central (493) and - Inner North (480); and Charles Sturt - North-East (481).

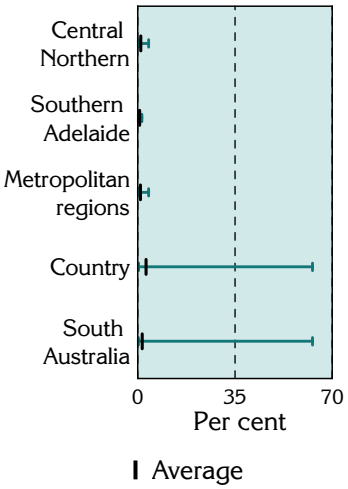
There were also relatively large numbers of Aboriginal people in West Torrens - East (272, 1.2%), Tea Tree Gully - South (271, 0.8%), Charles Sturt - Inner East (252, 1.2%), Salisbury - North-East (232, 1.1%), Playford - East Central (216, 1.2%) and Charles Sturt - Inner West (216, 0.9%).

Southern Adelaide

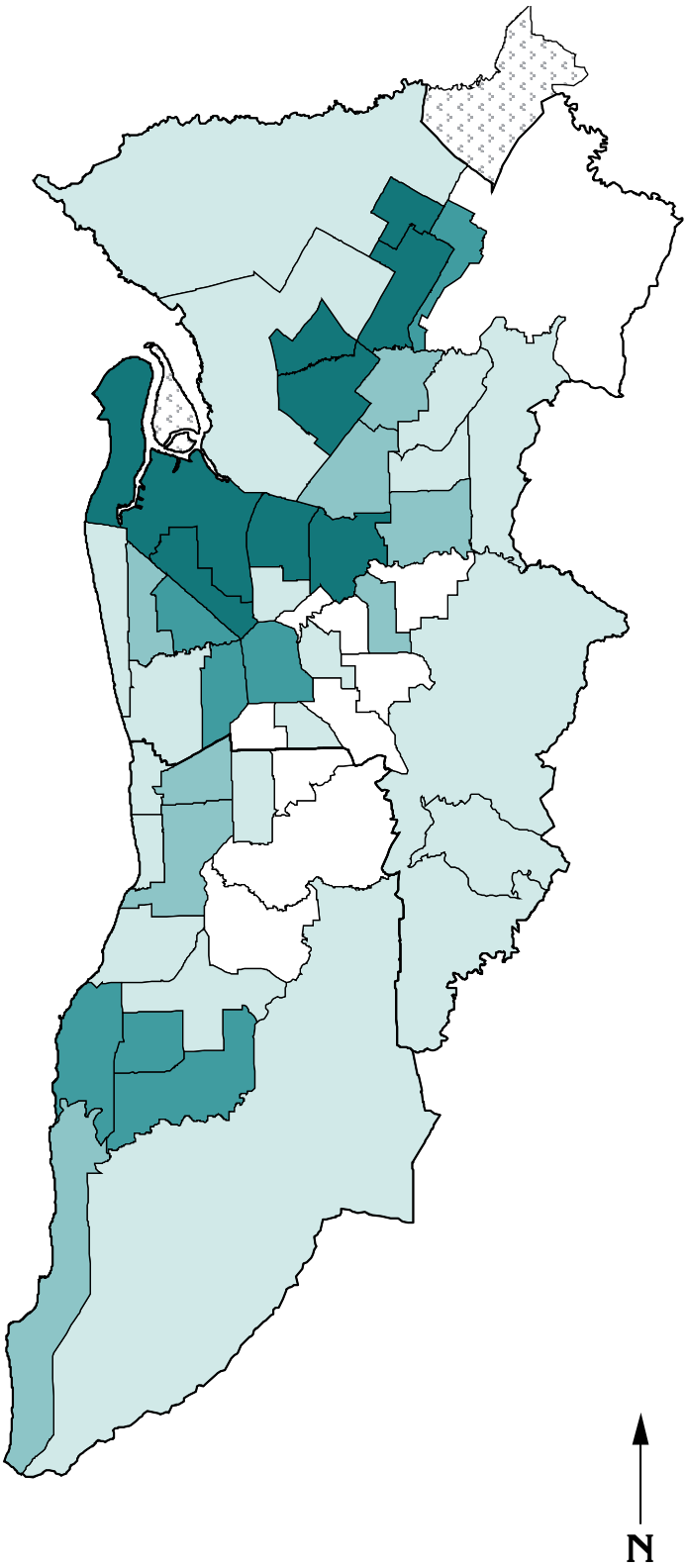
SLAs with the largest proportions and numbers of Aboriginal and Torres Strait Islander people in the Southern region were Onkaparinga - North Coast (1.5%, 266 people), - Hackham (1.5%, 214 people), - Morphett (1.2%, 290), and - South Coast (1.1%, 249).

There were also relatively large numbers of Aboriginal people in Marion - Central (272 people, 0.8%) and Marion - North (201, 0.8%).

Map 4.33
Aboriginal and Torres Strait Islander people, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent Aboriginal and Torres Strait Islander people, by SLA

- *1.6% or more*
- *1.2 to 1.5%*
- *0.8 to 1.1%*
- *0.4 to 0.7%*
- *fewer than 0.4%*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In 2001, there were more Aboriginal and Torres Strait Islander people living in country South Australia (12,464 people, 3.0% of the country population) than in the metropolitan regions (10,650, 1.0%).

Northern and Far Western region had the highest proportion of Aboriginal and Torres Strait Islander people (12.0%), just over one quarter (25.9%) of the State's Aboriginal and Torres Strait Islander population (Table 4.45). There was also a high proportion in the **Eyre** region (5.6%). The spatial distribution of Aboriginal people across the towns and rural areas is distinctive (Map 4.34).

Table 4.45: Regional totals, Aboriginal and Torres Strait Islander people, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	1,589	1.5	6.9
Wakefield[1]	1,051	1.1	4.5
South East	640	1.1	2.8
Northern & Far Western	5,988	12.0	25.9
Eyre	1,851	5.6	8.0
Mid North	537	1.8	2.3
Riverland	746	2.3	3.2
Country SA	**12,464**	**3.0**	**53.9**
Central Northern	8,439	1.1	36.5
Southern	2,202	0.7	9.5
Metropolitan regions	**10,650**	**1.0**	**46.1**
South Australia	**23,114**	**1.6**	**100.0**

[1]**Gawler is included in Wakefield region**

The correlation analysis showed a very strong association at the SLA level between the Indigenous population and dwellings with no motor vehicle; and a strong association with unemployment and single parent families. There was a strong inverse association with full-time educational participation and Internet use at home. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between the distribution of the Indigenous population and socioeconomic disadvantage (Table 8.2).

The Regions

Approximately half of Aboriginal people and Torres Strait Islanders living in country South Australia (48.0% of the non-metropolitan Indigenous population, 5,988 people) were in the **Northern and Far Western** region in 2001, comprising 12.0% of the regional population. All of the SLAs in this region were mapped in the highest range, with by far the largest proportion and the highest number in Unincorporated Far North (41.4%, 2,454 people). Other substantial populations of note were in Unincorporated Flinders Ranges (18.9%, 235 people), Port Augusta (15.4%, 2,041), Coober Pedy (14.7%, 350), Flinders Ranges (9.4%, 167), Whyalla (3.0%, 656) and Roxby Downs (2.3%, 79).

Eyre region had the second largest number and proportion of Aboriginal and Torres Strait Islander people at the regional level (1,851 people, 5.6% of the population). The SLAs with the largest concentrations were Unincorporated West Coast (43.3%, 259 people), Ceduna (23.6%, 834) and Port Lincoln (4.8%, 647).

In **Riverland**, there were 746 Aboriginal and Torres Strait Islander people, 2.3% of the region's population. The largest proportions of this population group were located in Unincorporated Riverland (62.9%, 90 people), Berri and Barmera - Berri (3.0%, 203), and - Barmera (2.6%, 112), and Renmark Paringa - Renmark (2.3%, 182).

In the **Mid North** region, 1.8% of the population were Aboriginal and Torres Strait Islander people (537 people). There were also high proportions in the SLAs of Unincorporated Pirie (3.2%, nine people), Peterborough (3.1%, 62), Port Pirie - City (2.3%, 314), and Mount Remarkable (2.2%, 64).

There was a relatively large number of Aboriginal and Torres Strait Islander people living in the **Hills Mallee Southern** region (1,589 people, 1.5%), with high proportions in the SLAs of The Coorong (4.9%, 286) and Murray Bridge (4.1%, 687). There were also relatively large numbers in Alexandrina - Coastal (115, 1.2%) and Mid Murray (108, 1.3%).

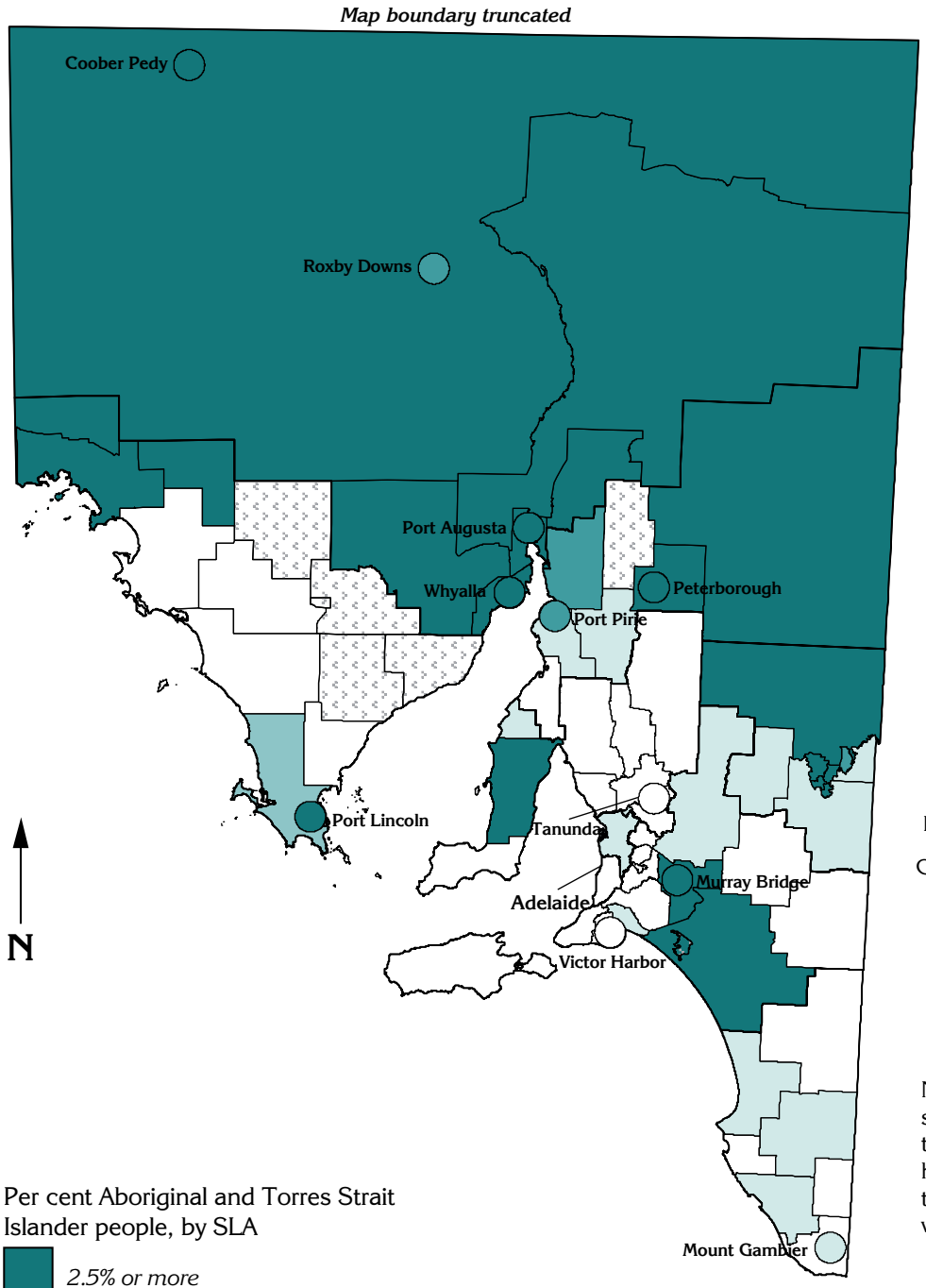
Wakefield region was home to 1,051 Aboriginal and Torres Strait Islander people, although it represented the equal lowest regional proportion, of 1.1%. Yorke Peninsula - North (4.0%, 293) was the only SLA in the region to map in the highest range.

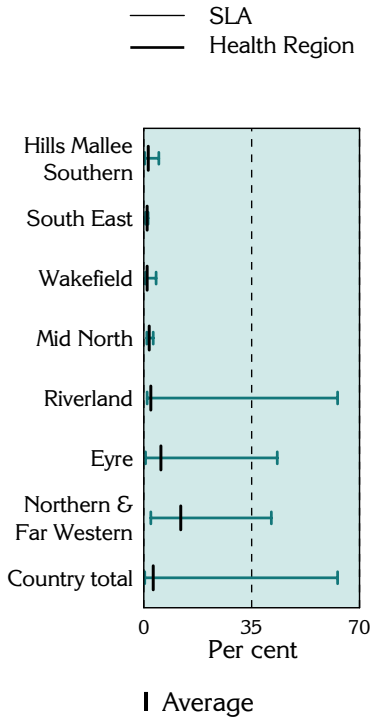
In the **South East** region, there were 640 Aboriginal and Torres Strait Islander people, again just 1.1% of the regional population and barely above the metropolitan average; low proportions were evident in the SLAs throughout the region.

ASGC Remoteness classification

The distribution of the Indigenous population under the remoteness classification is striking. The graph shows relatively low proportions in the first four areas, from 1.0% in Major Cities to 3.6% in the Remote areas. The proportion of Aboriginal people then increases substantially, to almost a quarter (24.8%) of the population in the Very Remote areas.

Map 4.34
Aboriginal and Torres Strait Islander people, South Australia, 2001





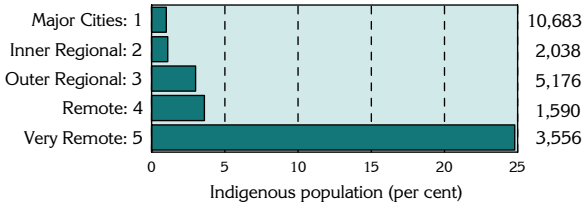
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent Aboriginal and Torres Strait Islander people, by SLA

- *2.5% or more*
- *2.0 to 2.4%*
- *1.5 to 1.9%*
- *1.0 to 1.4%*
- *fewer than 1.0%*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases*

ASGC Remoteness classification



Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

People born in predominantly non-English speaking countries and resident in Australia for five years or more, 2001

Migrants in this category arrived in Australia from predominantly non-English speaking countries (defined on page 60) in or before 1996. In Metropolitan Adelaide, 10.7% of the population at the 2001 Census had been born in a predominantly non-English speaking country and resident for five years or more (also referred to as long-term residents); there was a much lower proportion (3.5%) in country South Australia (Table 4.46). The proportion of the population in this category has varied over the past fifteen years, increasing between 1986 and 1991 and decreasing in 1996 and 2001. Tables 4.6 and 4.7 on page 60 and Chapter 3 provide more details of the composition of the culturally and linguistically diverse (CALD) population in South Australia.

Table 4.46: People born in predominantly non-English speaking countries and resident in Australia for five years or more

Per cent

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	10.5	13.0	11.1	10.7	1.8
Country	4.1	4.5	3.8	3.5	-14.3
South Australia	8.8	10.7	9.2	8.8	0.0

[1]**Per cent change over 15 years in the proportion of people born in predominantly non-English speaking countries and resident for five years or more**

Metropolitan regions

In 2001, 114,679 people who had been born in predominantly non-English speaking countries and resident in Australia for five years or more were living in the metropolitan regions (10.9%).

As a substantial proportion of this population group will have been resident in Australia for many years, their distribution is often widespread; the ageing of the more established groups such as the Italian and Greek born, as well as the smaller numbers from Germany, the Netherlands, former Yugoslavia, Poland and the former USSR, pose special challenges for deliverers of health and welfare services. At the 2001 Census, the highest proportions of the metropolitan regions' long-term residents born in non-English speaking countries were living in a group of SLAs adjacent to the west, north-west and north and north-east of the city (Map 4.35).

The correlation analysis showed a very strong association with the variable for poor proficiency in English, and a strong association with those in this population group who had been resident in Australia for less than five years. There was also a strong inverse correlation with Internet use at home, suggesting that this population group is not using this technology at home. There was only a weak association with disadvantage as measured by the Index of Relative Socio-Economic Disadvantage at the SLA level (Table 8.1).

Central Northern Adelaide

Central Northern region had the largest number of people born in predominantly non-English speaking countries and resident in Australia for five years or more, with 92,232 people, comprising 12.5% of the region's population.

Port Adelaide Enfield - Port had almost one quarter of its residents in this category (25.0%), with other high proportions in Charles Sturt - North-East (21.0%), Charles Sturt - Inner West (20.9%), Campbelltown - West (20.5%), Campbelltown - East (19.6%), Charles Sturt - Inner East (17.9%), Salisbury Balance (17.4%), Norwood Payneham St Peters - East (17.2%), West Torrens - East (16.5%), Port Adelaide Enfield - Inner (15.8%) and Salisbury - Central (15.7%).

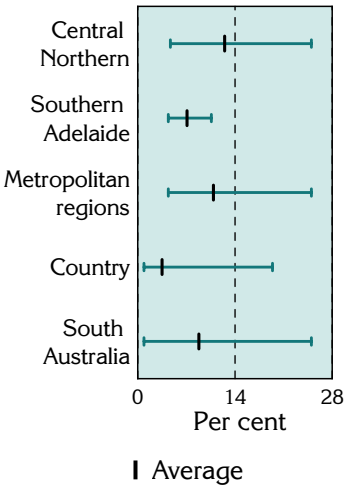
There were large numbers of people in this population group in Salisbury - South-East (4,269 people, 13.0%), West Torrens - West (3,577, 13.0%), Port Adelaide Enfield - East (3,533, 13.0%), Tea Tree Gully - South (3,525, 10.9%), Marion - Central (3,121, 9.7%) and Burnside - North-East (3,075, 14.9%).

The lowest proportions in the region were in the SLAs of Playford - East Central (4.7%), Playford - West Central (5.0%), Tea Tree Gully - Hills (5.2%), and Adelaide Hills - Central (5.6%).

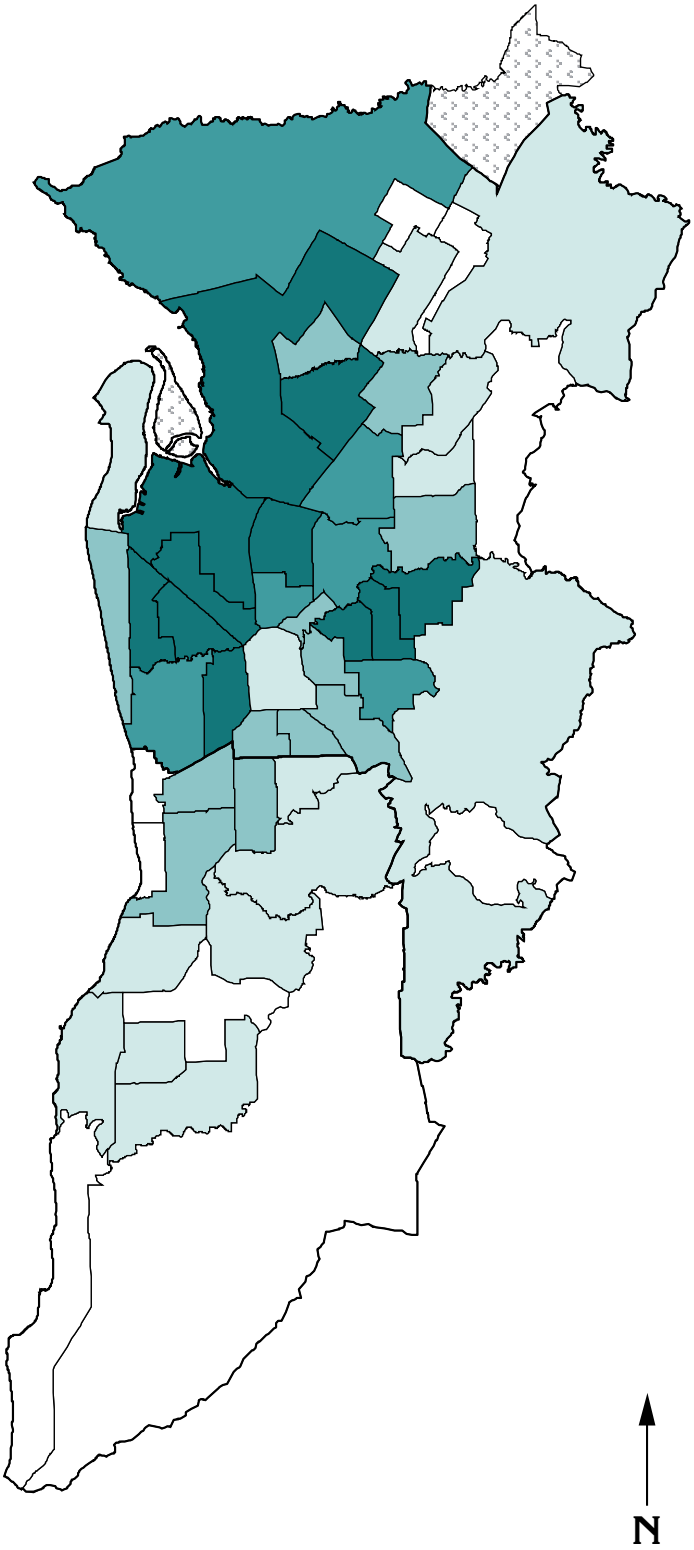
Southern Adelaide

Central Southern region had 22,441 long-term residents born in predominantly non-English speaking countries, comprising 7.1% of the population. The SLAs with the highest proportions of this population group were Marion - Central (9.7%, 3,121 people), - North (9.4%, 2,335) and - South (7.8%, 1,547); Mitcham - North-East (7.4%, 1,122), and - Hills (7.1%, 1,639); and Onkaparinga - Reservoir (7.0%, 1,700). The SLAs with the lowest proportions were Onkaparinga - Hills (4.4%), - South Coast (4.8%) and - Woodcroft (5.4%); and Holdfast Bay - South (5.2%), and - North (5.6%).

Map 4.35
People born in predominantly non-English speaking countries & resident in Australia for 5 years or more, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent born in non-English speaking countries and resident for five years or more, by SLA

- *15.0% or more*
- *12.0 to 14.9%*
- *9.0 to 11.9%*
- *6.0 to 8.9%*
- *fewer than 6.0%*
- *data not mapped**

*Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

People born in predominantly non-English speaking countries and resident in Australia for five years or more, 2001

Country South Australia

The numbers of people born in predominantly non-English speaking countries and resident in Australia for five years or more are relatively small at the regional level, with country South Australia having just 3.5% of its population in this category (14,541 people), compared with an overall population share of 28.0%. **Riverland** region had the highest proportion (5.9%) (Table 4.47). Table 4.7 on page 60 and Chapter 3 provide more details of the composition of the culturally and linguistically diverse (CALD) population in country South Australia.

Table 4.47: Regional totals, people born in predominantly non-English speaking countries, and resident five years or more, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	3,731	3.4	2.9
Wakefield[1]	2,806	3.0	2.2
South East	1,904	3.1	1.5
Northern & Far Western	2,443	4.9	1.9
Eyre	814	2.5	0.6
Mid North	869	2.8	0.7
Riverland	1,937	5.9	1.5
Country SA	**14,541**	**3.5**	**11.3**
Central Northern	92,232	12.5	71.4
Southern	22,441	7.1	17.4
Metropolitan regions	**114,679**	**10.9**	**88.7**
South Australia	**129,220**	**8.8**	**100.0**

[1]**Gawler is included in Wakefield region**

The correlation analysis showed a very strong association between this population group and people reporting poor proficiency in English; a strong association with those in this group who had been resident in Australia for less than five years; and a strong inverse association with SAS scores (and weaker inverse associations with PES and PAS scores, together suggesting that this population group is not completing secondary education) (Table 8.2).

The Regions

Riverland had the highest regional concentration, with 5.9% of the population's long-term residents from predominantly non-English speaking countries (1,937 people). There were relatively high proportions in nearly all of the SLAs in the region, including Renmark Paringa - Renmark (8.9%, 694 people) and - Paringa (3.8%, 65); Berri and Barmera - Barmera (7.0%, 299), and - Berri (6.7%, 458); and Loxton Waikerie - West (4.2%, 193) and - East (3.1%, 225).

The **Northern and Far Western** region (2,443 people) had the SLA with the highest proportion in this population group in country South Australia – Coober Pedy (19.4%, 462 people) – and the country SLA with the largest number, Whyalla (1,293 people, 6.0%). Port Augusta had 361 people in this group (2.7%).

The largest number of people born in this population group was located in the **Hills Mallee Southern** region (3,731 people, 3.4%). Most of the SLAs in this region were mapped in the highest range, including Alexandrina - Coastal (4.3%, 402), Mount Barker Balance (4.0%, 318) and - Central (3.8%, 577), Yankalilla (3.7%, 138), Adelaide Hills Balance (3.6%, 302), Murray Bridge (3.5%, 586), Mid Murray (3.5%, 288), Adelaide Hills - North (3.5%, 227), Victor Harbor (3.3%, 359) and Alexandrina - Strathalbyn (3.2%, 259).

There were fewer SLAs with high proportions in the **South East**, with 1,904 people from non-English speaking birthplaces resident in Australia for five years or more, representing 3.1% of the total population. Within the region, the SLAs with the highest proportions were Mount Gambier (4.3%, 983 people) and Wattle Range - West (3.5%, 304).

In **Wakefield**, there were 2,806 residents in this group (3.0% of the population), with high proportions in Mallala (4.7%, 335), Gawler (4.1%, 734), Barossa - Barossa (3.3%, 233), Light (3.2%, 328) and Yorke Peninsula - South (3.1%, 122).

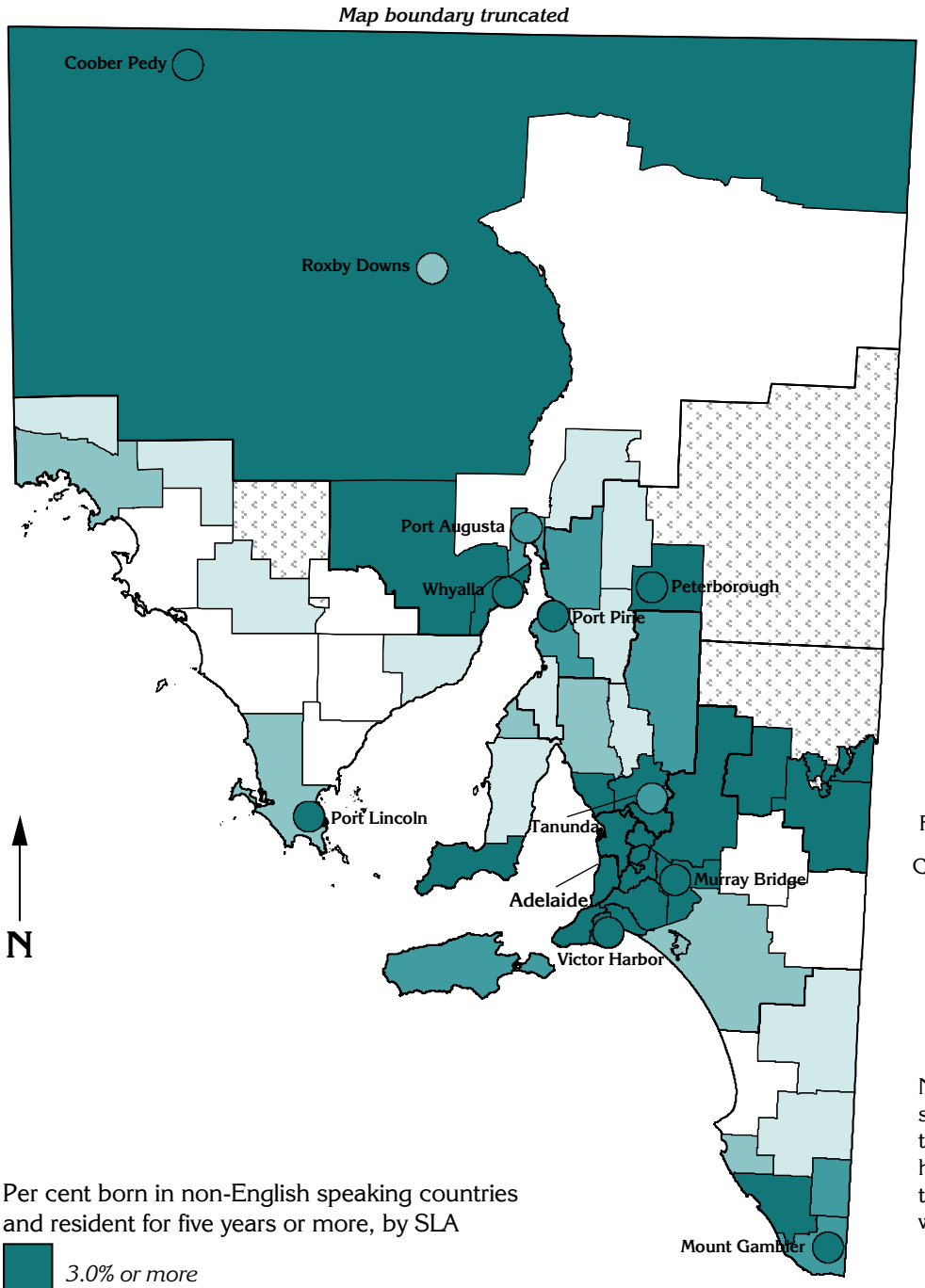
Lower proportions of residents from non-English speaking backgrounds were found in the **Mid North** (2.8% of the regional population, 869 people); the highest proportions were in Port Pirie - City (3.5%, 477) and Peterborough (3.4%, 67).

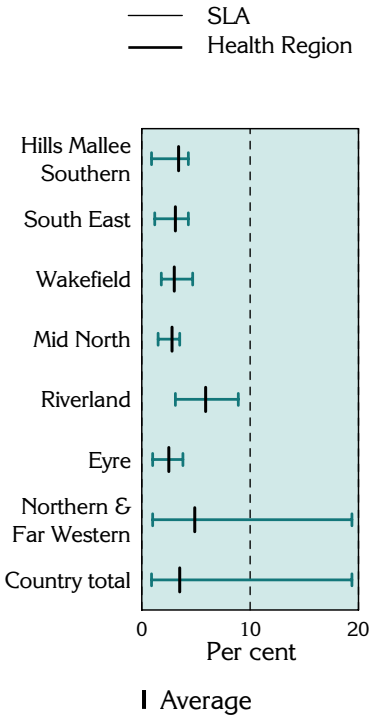
The **Eyre** region was characterised by SLAs with low proportions of non-English speaking residents. Overall, just 2.5% of the population in this region were from a non-English speaking background (814 people). The only SLA mapped in the highest range was Port Lincoln (3.8%, 504 people). The SLAs with the smallest proportions in country South Australia were Cleve (0.5%, nine) and Kimba (0.7%, nine).

ASGC Remoteness classification

The highest proportion of the population born in predominantly non-English speaking countries and resident in Australia for five years or more is in the Major Cities area (10.8%) and the lowest in the Remote areas (2.5%). The relatively higher proportion in the Very Remote areas (5.2%) is influenced by the population of Coober Pedy.

Map 4.36
People born in predominantly non-English speaking countries & resident in Australia for 5 years or more, South Australia, 2001





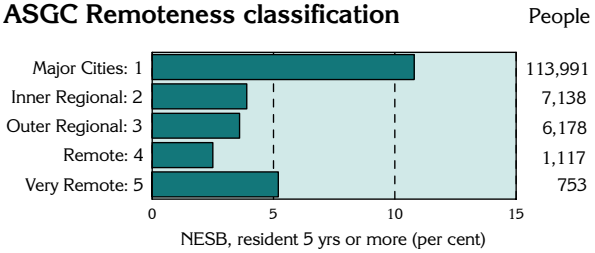
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent born in non-English speaking countries and resident for five years or more, by SLA

- *3.0% or more*
- *2.5 to 2.9%*
- *2.0 to 2.4%*
- *1.5 to 1.9%*
- *fewer than 1.5%*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases*

ASGC Remoteness classification



Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

People born in predominantly non-English speaking countries and resident in Australia for less than five years, 2001

People born in predominantly non-English speaking countries (defined on page 60) and who have been in Australia for less than five years (also referred to as short-term residents) may face a number of difficulties. For many, the combination of economic struggle with adjustment to a new language and a new cultural milieu can be expected to give rise to considerable stresses. Although a relatively small group, they also pose special challenges for deliverers of health and welfare services. Table 4.6 on page 60 and Chapter 3 provide more details of the composition and distribution of this culturally and linguistically diverse population.

The very small proportion of the population in this group in 2001 is similar to, although generally lower than, those over the previous 15 years (Table 4.48). Not surprisingly, recently arrived groups generally choose to live in Metropolitan Adelaide, with its wider range of employment, housing and services, rather than living in country areas.

Table 4.48: People born in non-English speaking countries and resident in Australia for less than five years

Per cent

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	1.6	2.0	1.4	1.3	-21.3
Country	0.4	0.3	0.2	0.2	-40.6
South Australia	1.3	1.5	1.0	1.0	-24.3

[1]**Per cent change over 15 years in the proportion of people born in non-English speaking countries and resident for less than five years**

Metropolitan regions

The majority (98.3%) of this population group coming to South Australia settled in Adelaide. In 2001, there were 13,273 people born in predominantly non-English speaking countries and resident in Australia for less than five years who lived in the metropolitan regions, representing 1.3% of the population.

The highest proportions in this population group lived in and around the central city in the middle suburbs, in particular to the west, north-west and north. The lowest proportions were recorded further away from the city to the north, south and in the Adelaide Hills (Map 4.37). As described in the text, the largest numbers of this population group were found in different areas.

The correlation analysis showed a strong association at the SLA level with the variables for dwellings with no motor vehicle, people with poor proficiency in English and those in this population group who had been resident in Australia for more than five years (Table 8.1).

Central Northern Adelaide

The proportion of this population group in the region varies widely at the SLA level (see graph opposite) with the highest proportion of the metropolitan regions' recently arrived migrants from predominantly non-English speaking countries in the City of Adelaide, with 6.4% (828 people). Other SLAs with high proportions were West Torrens - East (3.8%, 866 people), Port Adelaide Enfield - Port (2.6%, 657), Charles Sturt - North-East (2.5%, 630), Port Adelaide Enfield - Inner (2.5%, 483), Charles Sturt - Inner East (2.3%, 473), West Torrens - West (2.0%, 549), Charles Sturt - Inner West (2.0%, 474), Campbelltown - West (1.9%, 362), Unley - East (1.9%, 359), Norwood Payneham St Peters - West (1.9%, 319), Unley - West (1.8%, 287) and Salisbury Balance (1.8%, 98).

The largest numbers of people in this population group in the Central Northern region were located in Port Adelaide Enfield - East (416 people, 1.5%), Campbelltown - East (352, 1.3%), Salisbury - South-East (349, 1.1%), Salisbury - Central (341, 1.3%), Burnside - North-East (317, 1.5%), Charles Sturt - Coastal (317, 1.0%) and Prospect (307, 1.6%).

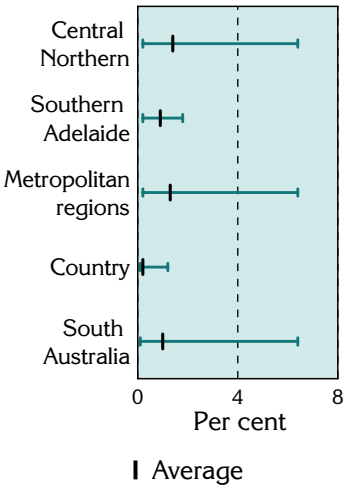
The SLAs with the lowest proportions of people in this category were Playford - East Central (0.2%, 28 people), followed by Playford - West (0.2%, 18), Playford - Elizabeth (0.3%, 66), Adelaide Hills - Central (0.3%, 40), Adelaide Hills - Ranges (0.3%, 32) and Port Adelaide Enfield - Coast (0.3%, 90).

Southern Adelaide

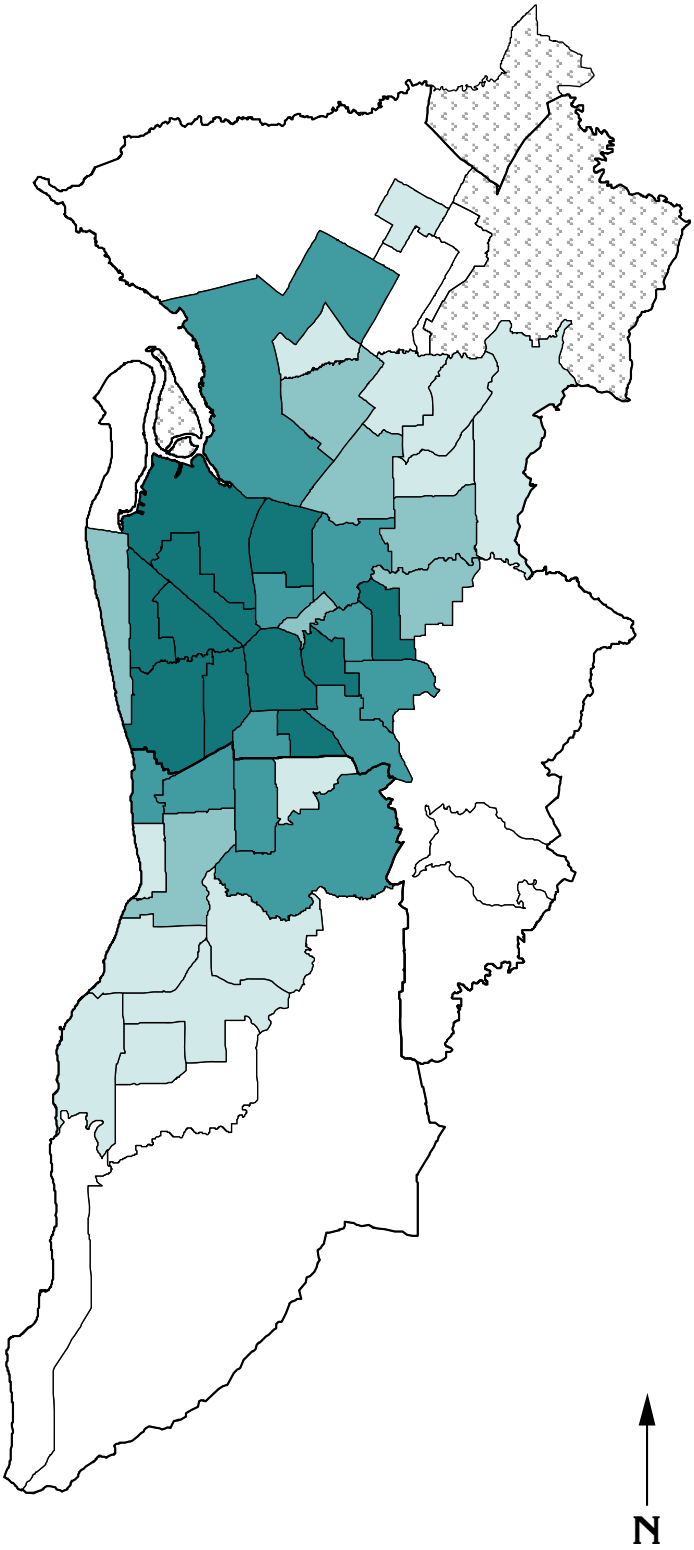
None of the SLAs in the Southern region had the concentrations of this population group seen in many western and north-western SLAs. The highest proportions were in Mitcham - West (1.8%, 392 people), Holdfast Bay - North (1.7%, 313), Mitcham - Hills (1.5%, 346), Marion - North (1.4%, 346) and Marion - Central (1.2%, 380).

The lowest proportions of this population group in this region were in the Onkaparinga SLAs of - South Coast (0.2%, 38 people), - Hills (0.3%, 28) and - Hackham (0.3%, 36).

Map 4.37
People born in predominantly non-English speaking countries & residents in Australia for less than 5 years, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent born in non-English speaking countries and resident for less than five years, by SLA

- *1.9% or more*
- *1.4 to 1.8%*
- *0.9 to 1.3%*
- *0.4 to 0.8%*
- *fewer than 0.4%*
- *data not mapped**

**Data were not mapped for Torrens Island (mapped with Port Adelaide) or in areas with fewer than five cases: Gawler has been mapped in the State map*

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

People born in predominantly non-English speaking countries and resident in Australia for less than five years, 2001

Country South Australia

The 2001 Population Census recorded just 873 people in country areas of South Australia, who were born in predominantly non-English speaking countries and had been resident in Australia for less than five years, just 0.2% of the population. Tables 4.6 and 4.7 (page 60) show that their distribution is also rather different in country South Australia than in Metropolitan Adelaide.

The numbers, and their proportions of the population, at the regional level, are small, with only the **Riverland** (0.7%) having a proportion above the country average of 0.2% (Table 4.49 and graph opposite). This very small population group live in a few selected areas of the State, including in the **Riverland** and in the towns of Coober Pedy and Roxby Downs (Map 4.38).

Table 4.49: Regional totals, people born in predominantly non-English speaking countries, and resident for less than five years, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	206	0.2	1.5
Wakefield[1]	115	0.1	0.8
South East	110	0.2	0.8
Northern & Far Western	116	0.2	0.8
Eyre	39	0.1	0.3
Mid North	38	0.1	0.3
Riverland	238	0.7	1.7
Country SA	**873**	**0.2**	**6.2**
Central Northern	10,535	1.4	74.5
Southern	2,731	0.9	19.3
Metropolitan regions	**13,273**	**1.3**	**93.8**
South Australia	**14,146**	**1.0**	**100.0**

[1]**Gawler is included in Wakefield region**

The correlation analysis showed a very strong association at the SLA level with the variable for poor proficiency in English, and a strong association with those in this population group who had been resident in Australia for more than five years (Table 8.2).

The Regions

The largest number of people from a predominantly non-English speaking background living in country South Australia and resident in Australia for less than five years was in **Riverland** (238 people, 0.7%). The largest concentrations of this population group were in the SLAs of Loxton Waikerie - West (1.2%, 55 people), Renmark Paringa - Renmark (1.1%, and the largest country SLA population in this group, of 84 people), Berri and Barmera - Berri (0.8%, 51), Renmark Paringa - Paringa (0.4%, seven people) and Loxton Waikerie - East (0.4%, 28).

In **Northern and Far Western** region, 0.2% of the population was in this population group (116 people). Within this region, the largest proportions were in Coober Pedy (0.8%, 20 people) and Roxby Downs (0.4%, 14). There were 52 people in this population group in Whyalla (0.2%).

There were 206 people newly arrived in **Hills Mallee Southern** region, representing 0.2% of the population. The SLAs of Murray Bridge (0.4%, 66 people, the second largest number at the country SLA level) and Kangaroo Island (0.4%, 15) were the only two mapped in the highest range. There were 34 people in this group in Mount Barker - Central (0.2%).

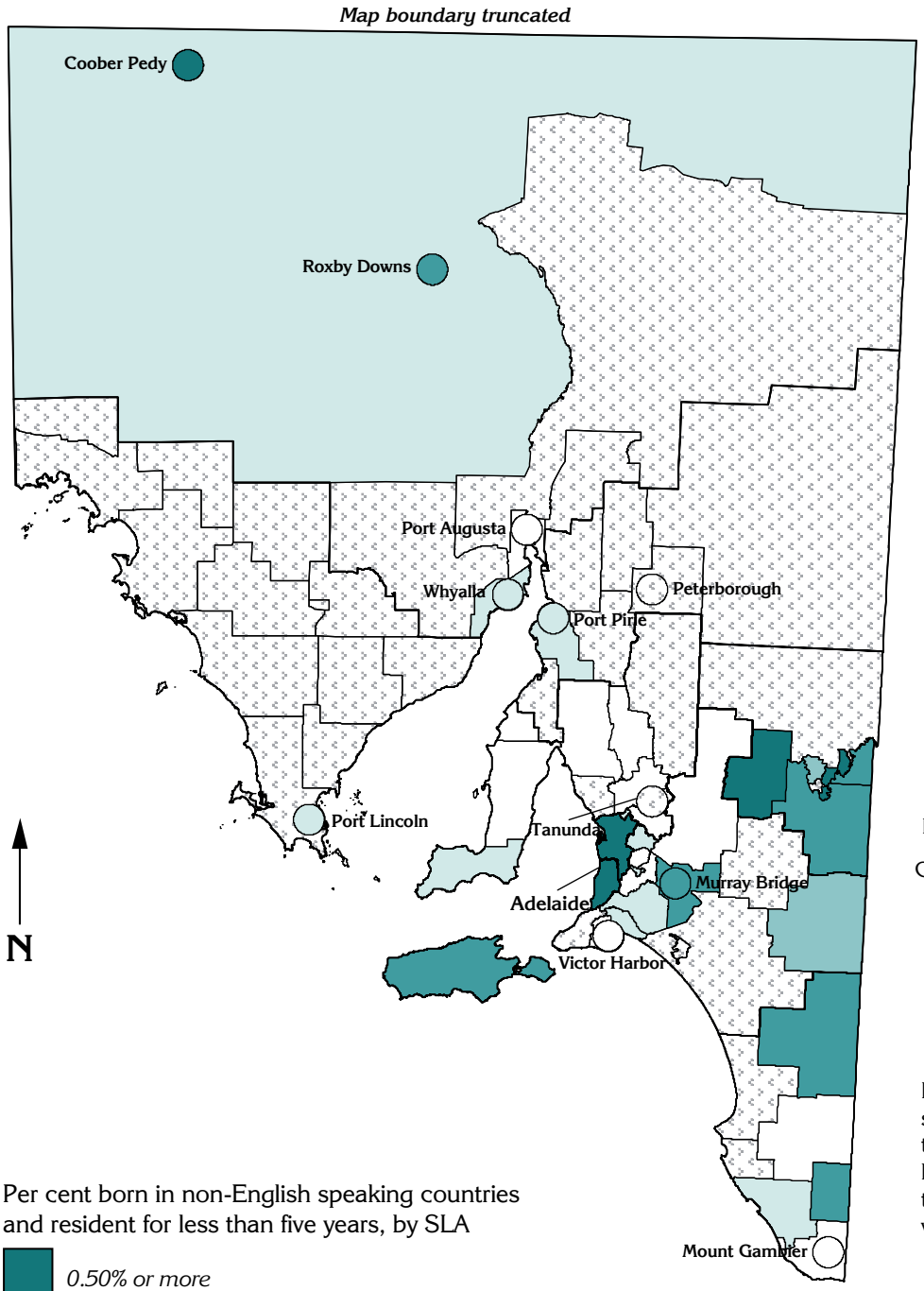
In the **South East**, 0.2% of the population was born in a predominantly non-English speaking country and had been resident in Australia for less than five years (110 people). The largest proportions in this region were in Tatiara (0.4%, 28) and Wattle Range - East (0.4%, 12). There were 31 people in this population group in Mount Gambier (0.1%) and 21 in Wattle Range - West (0.2%).

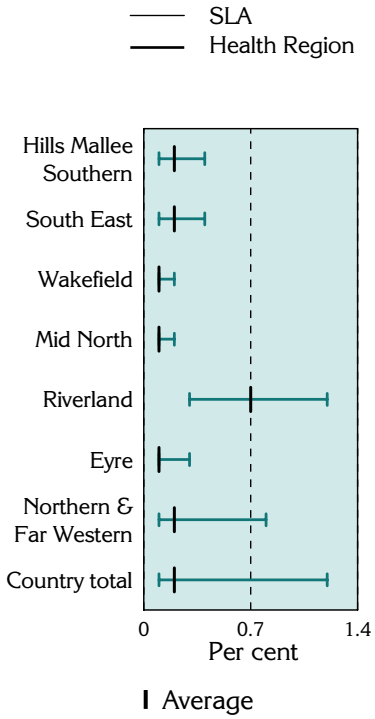
None of the SLAs in the **Mid North, Wakefield** or **Eyre** regions of country South Australia were mapped in the highest range (Map 3.28). The largest number of residents in this population group in these three regions was in Port Pirie - City (26 people, 0.2%) in the **Mid North** region, with a similar number in Port Lincoln (24, 0.2%).

ASGC Remoteness classification

The proportion of the population born in predominantly non-English speaking countries and resident in Australia for fewer than five years is highest in the Major Cities areas (1.3%) and drops away rapidly to 0.3% or lower in the next four remoteness areas.

Map 4.38
People born in predominantly non-English speaking countries & residents in Australia for less than 5 years, South Australia, 2001





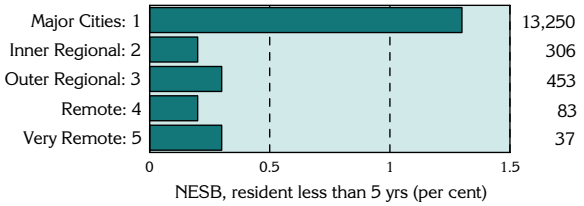
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent born in non-English speaking countries and resident for less than five years, by SLA

- *0.50% or more*
- *0.40 to 0.49%*
- *0.30 to 0.39%*
- *0.20 to 0.29%*
- *fewer than 0.20%*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases*

ASGC Remoteness classification



Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Poor proficiency in English, 2001

For migrants from non-English speaking countries, the rate at which they adapt to live in the host country is directly related to the rate at which they achieve proficiency in English. Their level of proficiency in English has profound implications for the ease with which they are able to access labour markets, develop social networks, become aware of and utilise services, and participate in many aspects of Australian society. From a health service viewpoint, the location of this population group is most relevant in the provision of health services for women and older people, as many migrants from European countries who arrived in Australia in the 1950s and 1960s have not developed English language skills (especially females), or have returned to using the language of their birthplace as they have aged (both females and males).

Poor proficiency in English of people aged five years and over was determined when people born overseas in predominantly non-English speaking countries reported in the Census speaking another language and speaking English 'not well' or 'not at all' (Table 4.50). This small population group has declined as a proportion of the State's population between 1986 and 2001.

Table 4.50: Poor proficiency in English of people aged five years and over and born in predominantly non-English speaking countries

Per cent

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	2.7	2.7	2.5	2.3	-13.7
Country	0.6	0.5	0.4	0.4	-36.2
South Australia	2.1	2.1	2.0	1.8	-13.8

[1]**Per cent change over 15 years in the proportion of people with poor proficiency in English**

Metropolitan regions

In 2001, there were 23,448 people in this group who reported poor proficiency in English, 2.3% of people aged five years and over, living in the metropolitan regions (Table 4.51).

The map (Map 4.39) shows a band of white along the eastern side of the metropolitan regions, from the north-east to the south-east and across to the coast, representing the lowest levels (under 0.5%) of those with poor proficiency in English.

The correlation analysis showed a strong inverse association at the SLA level with Internet use at home, suggesting that this population group is not using this technology at home (Table 8.1).

Central Northern Adelaide

People reporting poor proficiency in English were mainly located in northern, north-western and north-eastern SLAs, within the Central Northern region (Map 4.39). The wide variation in distribution of this group across the region's SLAs is evident from the graph opposite.

The highest proportions of people reporting a poor proficiency in English were in Port Adelaide Enfield - Port (10.6%, 2,461 people), Charles Sturt - North-East (8.1%, 1,895), Salisbury Balance (6.8%, 342), West Torrens - East (6.0%, 1,302), Charles Sturt - Inner West (5.7%, 1,284) and - Inner East (5.3%, 1,055), Campbelltown - West (5.1%, 897), Salisbury - Central (5.0%, 1,259), Port Adelaide Enfield - Inner (4.9%, 883), Playford - West (4.6%, 350), Norwood Payneham St Peters - East (4.6%, 674), Campbelltown - East (3.8%, 957), West Torrens - West (3.2%, 828) and Norwood Payneham St Peters - West (3.0%, 495).

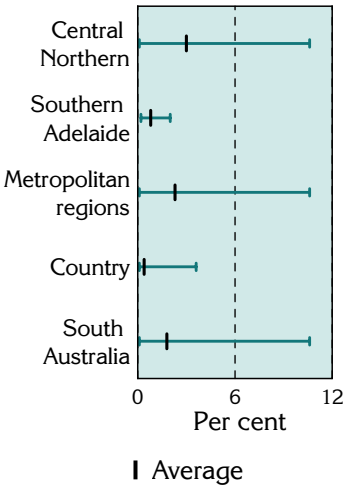
There were a further 849 people in Salisbury - South-East (2.8%), 828 in West Torrens - West (3.2%), 639 in Port Adelaide Enfield - East (2.5%) and 626 in Salisbury - Inner North (2.9%).

The SLAs with the lowest proportions of people with poor proficiency in English were Playford - East Central (0.3%), Tea Tree Gully - Hills (0.2%), and Adelaide Hills - Central (0.1%).

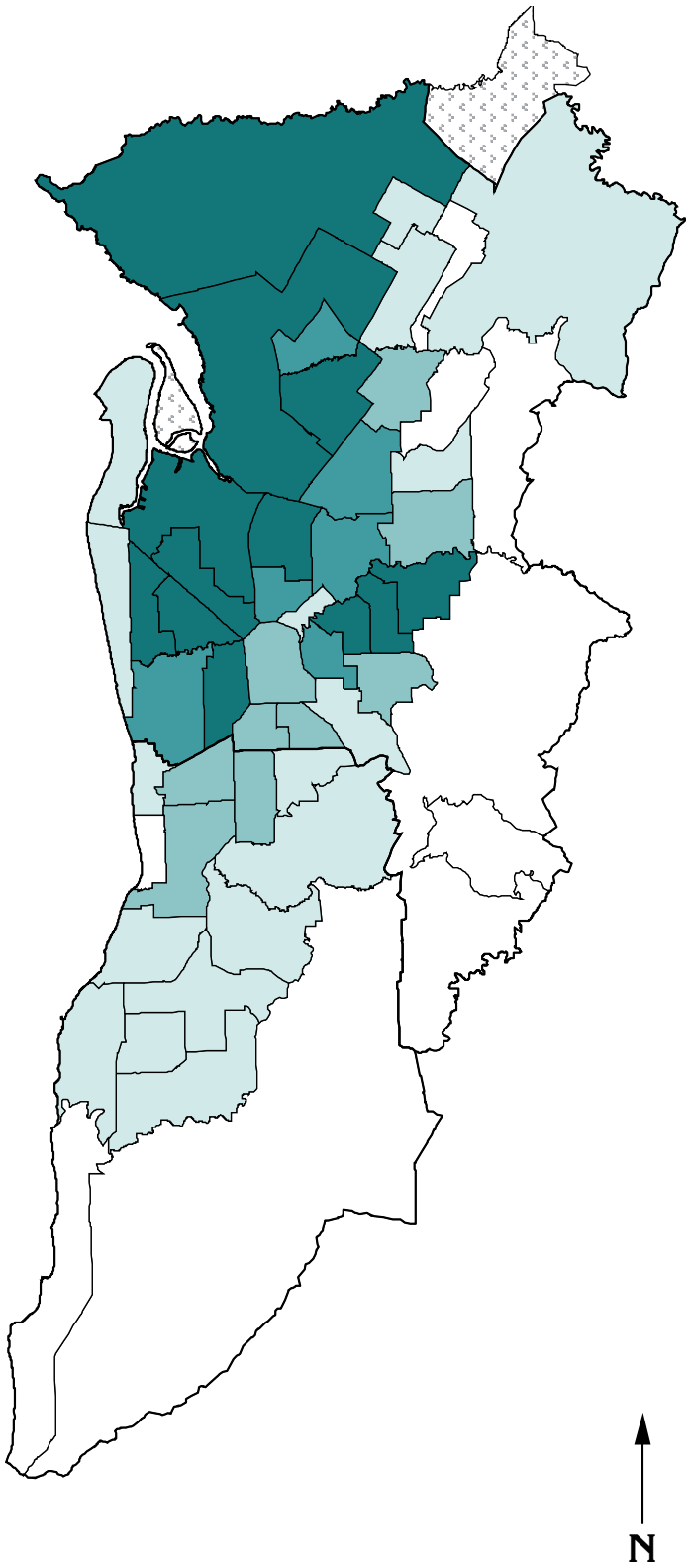
Southern Adelaide

No Southern region SLAs were mapped in the highest range, with the largest proportions in the south recorded in Marion - North (2.0%, 478 people), Mitcham - West (1.9%, 393) and Marion - Central (1.5%, 444). The lowest proportions in this region were in Onkaparinga - Hills (0.4%), Onkaparinga - South Coast (0.2%) and Holdfast Bay - South (0.4%).

Map 4.39
Poor proficiency in English, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent poor proficiency in English, by SLA

- *3.5% or more*
- *2.5 to 3.4%*
- *1.5 to 2.4%*
- *0.5 to 1.4%*
- *fewer than 0.5%*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In country South Australia, there are fewer overseas born people from non-English speaking countries than in the metropolitan regions. However, they are generally more proficient in English than those resident in the metropolitan regions, partly because of the predominance outside the metropolitan area of people from Northern Europe, a group with generally better command of English. As a result, people who speak English poorly or not at all make up less than 0.4% of the non–metropolitan population aged five years and over.

The numbers, and their proportions of the population, at the regional level are therefore small, with only the **Riverland** (1.6%) and **Northern and Far Western** (0.6%) having proportions of over 0.3% (Table 4.51 and graph opposite).

Table 4.51: Regional totals, poor proficiency in English, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	178	0.2	0.7
Wakefield[1]	187	0.2	0.8
South East	143	0.3	0.6
Northern & Far Western	255	0.6	1.0
Eyre	76	0.2	0.3
Mid North	79	0.3	0.3
Riverland	501	1.6	2.0
Country SA	**1,435**	**0.4**	**5.8**
Central Northern	20,989	3.0	84.4
Southern	2,456	0.8	9.9
Metropolitan regions	**23,448**	**2.3**	**94.2**
South Australia	**24,883**	**1.8**	**100.0**

[1]**Gawler is included in Wakefield region**

The correlation analysis showed a very strong association at the SLA level with the variables for people born overseas in predominantly non-English speaking countries who had been resident in Australia for more than five years, and for less than five years (Table 8.2).

The Regions

The **Riverland** region had the highest proportion of people born overseas in predominantly non-English speaking countries who reported poor proficiency in English (1.6%, 501 people). The majority of country SLAs that mapped in the highest range (Map 4.40) was located in this region: also of note is the extent of variation at the SLA level (see graph opposite).

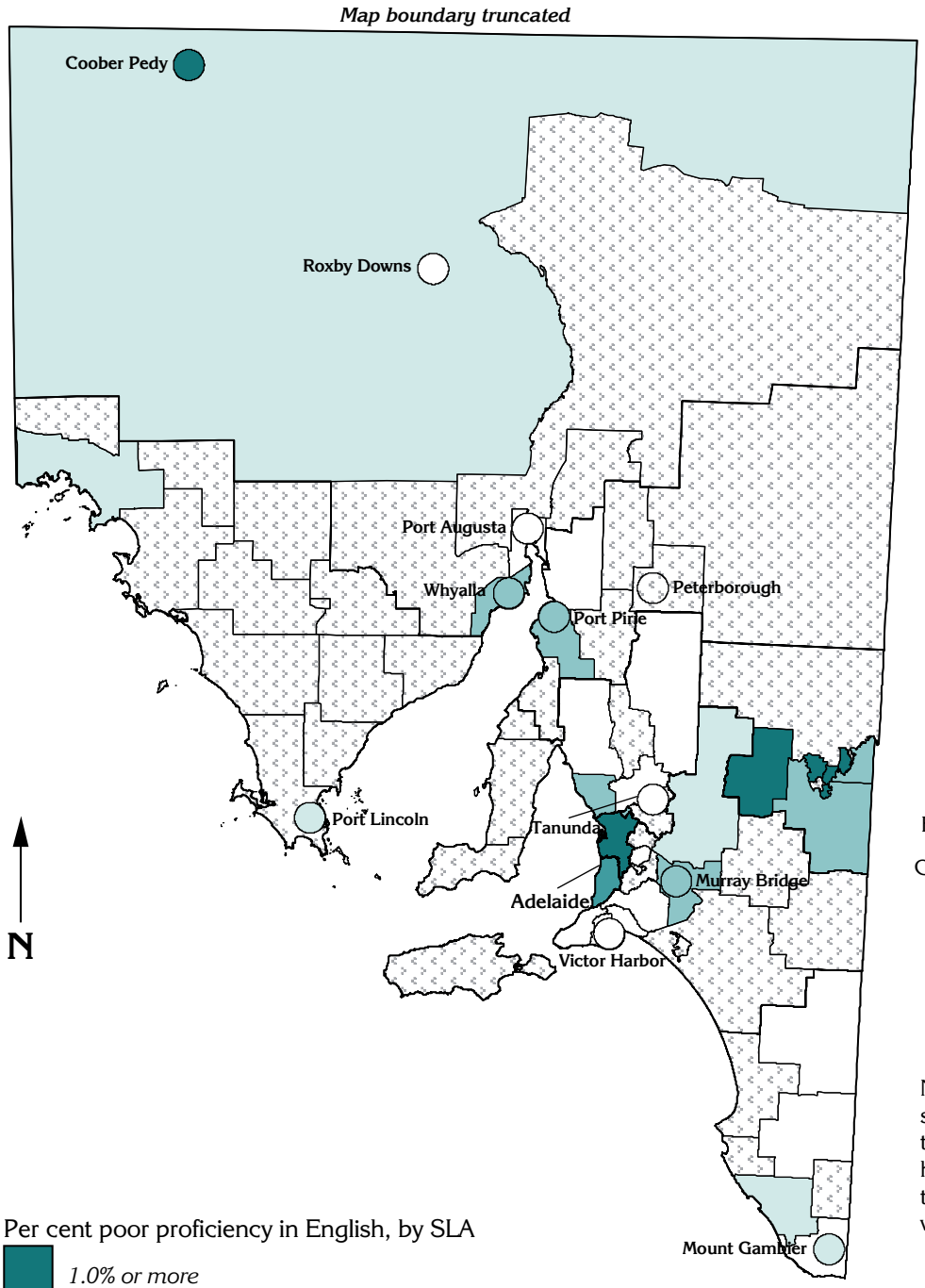
The highest proportions were in Renmark Paringa – Renmark (3.0%, and with 221 people, the largest number), Berri and Barmera - Barmera (1.8%, 71), Loxton Waikerie - West (1.6%, 68) and Berri and Barmera - Berri (1.4%, 88).

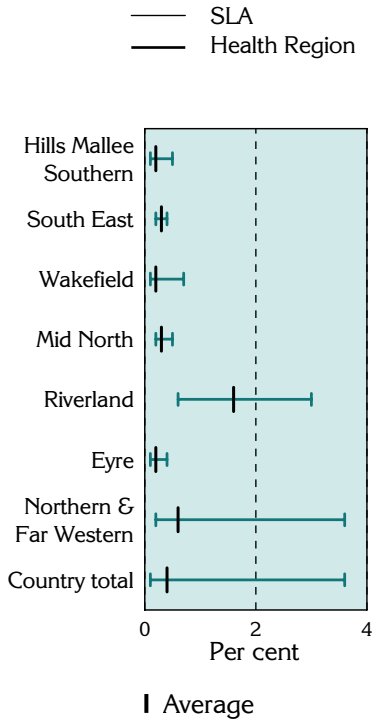
In the **Northern and Far Western** region, 0.6% of the population reported poor proficiency in English (255 people). Despite this low overall proportion, there is considerable variation at the SLA level (see graph opposite). The only SLA mapped in the highest range was Coober Pedy, which had the highest SLA-level proportion in country South Australia, of 3.6%, representing 80 people. There were 120 people in this population group in Whyalla (0.6%). Elsewhere the numbers are also very low, with 80 people in this population group in Murray Bridge (0.5%) in the **Hills Mallee Southern** region; 73 in Mount Gambier (0.3%) in the **South East**; 58 in Port Pirie - City (0.5%) in the **Mid North;** 51 in Port Lincoln (0.4%) in **Eyre;** and 50 in Mallala (0.7%) in the **Wakefield** region.

ASGC Remoteness classification

Not surprisingly, the proficiency in English of the population has a distribution that is similar to that for people born in predominantly non-English speaking countries and now resident in Australia. The highest percentage is in the Major Cities' areas (2.4% of the population), dropping away to 0.5% or less in the next three classes. The relatively higher proportion in the Very Remote areas (0.9%) is influenced by the presence of this population group in Coober Pedy (3.6%).

Map 4.40
Poor proficiency in English, South Australia, 2001





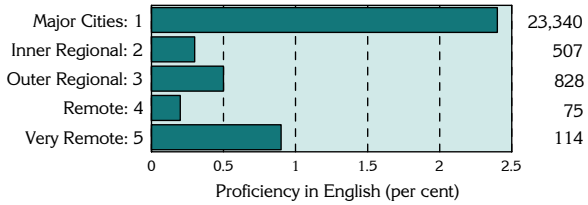
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent poor proficiency in English, by SLA

- *1.0% or more*
- *0.75 to 0.99%*
- *0.50 to 0.74%*
- *0.25 to 0.49%*
- *fewer than 0.25%*
- *data not mapped*[*]

[*]*Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases*

ASGC Remoteness classification



Source: Calculated on data from ABS Census 2001

Details of map boundaries are in Appendix 1.2

Dwellings rented from the SA Housing Trust, 2001

The distribution of public rental housing is an indicator of the distribution of single parents, those unemployed, aged or with a disability, and Indigenous people, as these groups are given waiting list priority for public housing, which has become increasingly scarce since the 1970s.

In 1986 and 1991, public rental dwellings formed a greater share of the housing stock in country South Australia than in Metropolitan Adelaide (Table 4.52). However, the situation was reversed by 2001, with a greater decline in the number of these dwellings in the country (45.9% compared to 23.7%). At the State level, after an increase in the number of dwellings rented from the Housing Trust, from 52,299 (11.0%) in 1986 to 57,586 dwellings (11.2%) in 1991, there was a decline to 53,023 (9.5%) in 1996. There was a further large decline to 44,686 dwellings (7.7%) in 2001. This reduction in the availability of Housing Trust dwellings across the State, at a time of increasing demand, is regrettable.

Table 4.52: Dwellings rented from the SA Housing Trust

Per cent

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	10.5	11.0	9.7	8.0	-23.7
Country	12.4	12.0	9.0	6.7	-45.9
South Australia	11.0	11.2	9.5	7.7	-29.9

[1]Per cent change over 15 years in the proportion of dwellings rented from the SA Housing Trust

Metropolitan regions

Public rental housing forms one of the most distinctive features of the metropolitan region's social geography. Its distribution (Map 4.41) is very much shaped by developments which began in the 1950s (see Chapter 3). In 2001, there were 33,843 dwellings rented from the SA Housing Trust in the metropolitan regions, 8.0% of all dwellings (Table 4.53).

The correlation analysis showed a very strong association with the variables for jobless families, the Indigenous population, low income families, single parent families and unemployment; and a strong association with unskilled and semi-skilled workers and dwellings with no motor vehicle. There were very strong inverse associations with female labour force participation, high income families, Internet use at home, full-time educational participation; and a strong inverse association with managers and administrators, and professionals. These results, together with the inverse correlation of substantial significance with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between public rental housing and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

The highest proportions of Housing Trust rental dwellings (and greatest variation between SLAs – see graph opposite) were in Central Northern region, in the SLAs of Playford - West Central (28.2%, 1,295 dwellings), Playford - Elizabeth (27.1%, 2,795), Port Adelaide Enfield - Port (26.7%, 2,835), Port Adelaide Enfield - Inner (20.4%, 1,737), Charles Sturt - North-East (14.8%, 1,551), Salisbury - Central (13.8%, 1,352) and - Inner North (12.4%, 1,038) and Port Adelaide Enfield - East (11.6%, 1,323).

Large numbers were recorded in the SLAs of Port Adelaide Enfield - Coast (1,113, 9.7%), Charles Sturt - Inner West (1,065, 10.9%) and - Coastal (1,002, 7.8%), Salisbury - South-East (959, 7.6%) and Tea Tree Gully - North (933, 10.4%).

The SLAs with the lowest proportions of Housing Trust rental dwellings were Adelaide Hills - Central (0.1%, six dwellings), Tea Tree Gully - Hills (0.2%, seven) and Burnside - North-East (0.6%, 47) and - South-West (1.5%, 125).

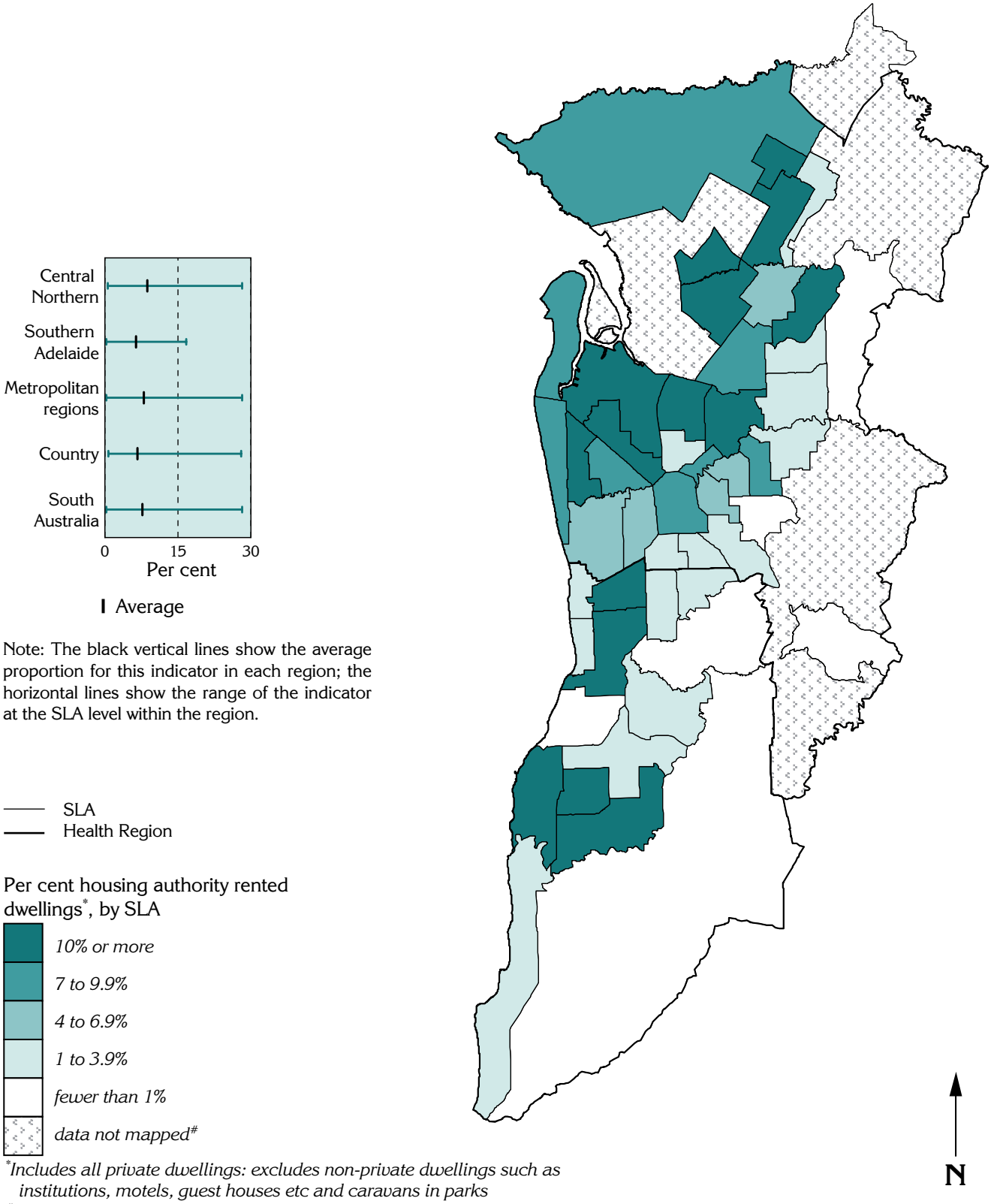
Southern Adelaide

In the Southern region, there were high proportions of public rental housing in Onkaparinga - North Coast (16.7%, 1,212 dwellings), Marion - North (16.4%, 1,899), Onkaparinga - Hackham (15.6%, 790), and Marion - Central (13.8%, 1,923). The largest numbers of dwellings rented from the Housing Trust in this region were in Marion - Central and - North (as listed above). There were 912 of these dwellings in Onkaparinga - Morphett (10.0%).

The lowest proportions in the south were in Mitcham - Hills (0.3%, 25 dwellings), Onkaparinga - Hills (0.4%, 16), Marion - South (0.6%, 43), Mitcham - North-East (1.2%, 71), and Onkaparinga - Woodcroft (1.3%, 160) and - Reservoir (1.5%, 122).

Map 4.41
Dwellings rented from the SA Housing Trust, metropolitan regions, 2001

Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



*Includes all private dwellings: excludes non-private dwellings such as institutions, motels, guest houses etc and caravans in parks

Data were not mapped for Torrens Island (mapped with Port Adelaide) or in areas with fewer than five cases: Gawler has been mapped in the State map

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

The Housing Trust made an important contribution to the development of the country areas of South Australia during the post-World War II period. The commitment to the provision of housing for workers, as a means of encouraging manufacturing investment in the 1950s and 1960s, resulted in major developments in many country towns. This is most evident in Whyalla and Port Augusta, resulting in the large number and high proportion of these dwellings in **Northern and Far Western** region (Table 4.53 and graph opposite). In contrast, the majority of country SLAs have below average proportions of Housing Trust rental dwellings, with more than half of the SLAs having proportions of three per cent or less.

Table 4.53: Regional totals, dwellings rented from the SA Housing Trust, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	1,638	3.9	3.7
Wakefield[1]	1,267	3.4	2.8
South East	1,679	7.2	3.8
Northern & Far Western	3,515	17.8	7.9
Eyre	866	6.7	1.9
Mid North	1,018	8.3	2.3
Riverland	860	6.6	1.9
Country SA	**10,843**	**6.7**	**24.3**
Central Northern	25,848	8.7	57.8
Southern	7,995	6.4	17.9
Metropolitan regions	**33,843**	**8.0**	**75.7**
South Australia	**44,686**	**7.7**	**100.0**

[1]**Gawler is included in Wakefield region**

There were weak associations evident in the correlation analysis at the SLA level with most of the indicators of socioeconomic disadvantage. There was also a strong association with the variable for single parent families and a strong inverse association with managers and administrators, and professionals. These results, together with the weak inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between SA Housing Trust rental dwellings and socioeconomic disadvantage (Table 8.2).

The Regions

There were 3,515 Housing Trust rental dwellings in **Northern and Far Western**, 17.8% of all dwellings. They were predominantly located in Whyalla (2,494 dwellings), where more than a quarter (28.0%) of all rental dwellings are owned by the Housing Trust. Public rental housing is also important in Port Augusta (17.8%, 925 dwellings), with lower proportions in Unincorporated Whyalla (6.3%, seven dwellings), Flinders Ranges (5.2%, 40) and Unincorporated Flinders Ranges (3.1%, 19).

In the **South East**, 7.2% of dwellings (1,679 dwellings) were rented from the Housing Trust; approximately two thirds of these were located in Mount Gambier (1,145, 12.7% of dwellings). There were also high proportions in Wattle Range - West (6.8%, 228 dwellings), Naracoorte and Lucindale (4.6%, 143), Wattle Range - East (4.4%, 54) and Robe (3.1%, 18).

The **Eyre** region had 866 dwellings rented from the Housing Trust (6.7%), the majority of which were in Port Lincoln (673 dwellings, 12.9%), with fewer in Ceduna (102, 7.6%) and Streaky Bay (27, 3.5%).

The proportion and number of public rental dwellings were similar in the **Riverland** region 6.6% (860 dwellings). The highest proportions were in Renmark Paringa - Renmark (8.5%, 264 dwellings), Berri and Barmera - Berri (8.2%, 221) and - Barmera (8.0%, 137), and Loxton Waikerie - West (5.6%, 103) and - East (4.4%, 125).

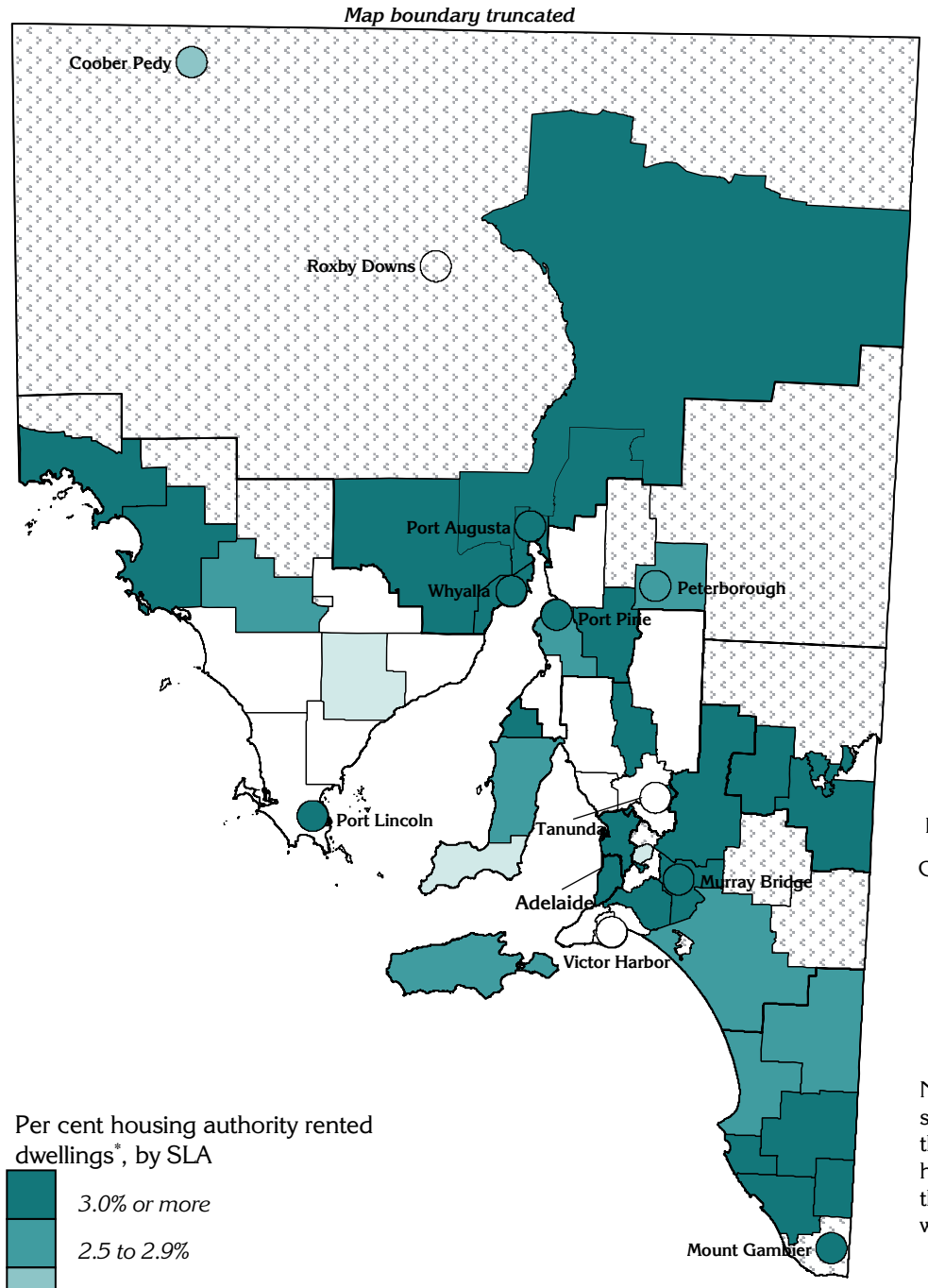
The **Hills Mallee Southern** region had a relatively large number of Housing Trust rental dwellings (1,638 dwellings, 3.9%), with the highest proportions in Murray Bridge (11.6%, 752), Mount Barker - Central (6.6%, 370), Mid Murray (3.7%, 127) and Alexandrina - Strathalbyn (3.0%, 97).

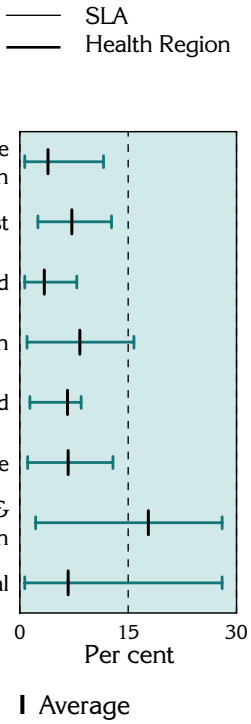
The **Wakefield** region had 1,267 Housing Trust rental dwellings (3.4%), located primarily in the SLAs of Gawler (7.9%, 551 dwellings), Barossa - Angaston (4.9%, 143), Copper Coast (4.7%, 208) and Clare and Gilbert Valleys (3.9%, 125).

ASGC Remoteness classification

The majority (76.6%) of dwellings rented from the SA Housing Trust were in the Major Cities' areas (comprising 8.1% of total dwellings). However, the highest proportion was in the Outer Regional areas, where they represented 9.2% of all occupied private dwellings. The Inner Regional and Remote categories had proportions of 4.4% and 4.9%, respectively. The lowest proportion was in the Very Remote areas (3.1%).

Map 4.42
Dwellings rented from the SA Housing Trust, South Australia, 2001





Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

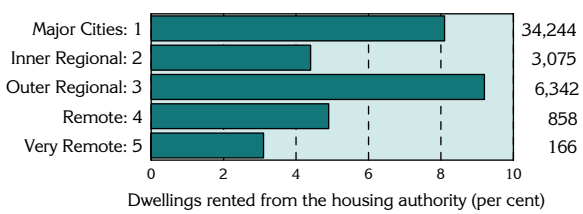
Per cent housing authority rented dwellings*, by SLA

- *3.0% or more*
- *2.5 to 2.9%*
- *2.0 to 2.4%*
- *1.5 to 1.9%*
- *fewer than 1.5%*
- *data not mapped#*

* *Includes all private dwellings: excludes non-private dwellings such as institutions, motels, guest houses etc and caravans in parks*

\# *Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases*

ASGC Remoteness classification



Source: Calculated on data from ABS Census 2001

Details of map boundaries are in Appendix 1.2

Rent assistance, 1999 to 2002

Affordable, secure and safe housing is fundamental to one's health and wellbeing, employment, education and other life opportunities. The Australian Council of Social Service (ACOSS) estimated that more than one in three households could not afford to buy a house in Sydney, Melbourne or Adelaide; the poorest 40.0% of households could not afford housing in those cities; and over 200,000 people were recorded on waiting lists for public housing across Australia (ACOSS 2003).

The data mapped are of people receiving rent assistance from the Australian Government Department of Family and Community Services, through Centrelink. These people are referred to in the text as 'renters', and are shown as a proportion of households (rent assistance is available to one person per household).

Both the number and proportion of renters receiving rent assistance were higher in Metropolitan Adelaide than in country South Australia (Table 4.54).

Table 4.54: Renters receiving rent assistance, 1999 to 2002

Section of State	Number	Percent
Metropolitan Adelaide (incl. Gawler)	50,226	12.0
Country	14,337	9.8
South Australia	64,563	11.4

Metropolitan regions

Over the four years from 1999 to 2002, an average of 49,363 renters (12.0% of households) in the metropolitan regions received rent assistance (Table 4.55).

The correlation analysis showed a strong association between high rates of rent assistance and the variables for dwellings with no motor vehicle, unemployment, people from predominantly non-English speaking countries resident in Australia for less than five years, and jobless families. There were strong inverse associations with full-time educational participation at age 16 and Internet use at home. These results, together with the inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between those receiving rent assistance and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

There were 35,763 households receiving rent assistance in the Central Northern region (12.3% of households); the highest proportions of renters were located in and around the city centre, in the outer north and in a number of coastal SLAs, from Glenelg to Sellicks Beach (Map 4.43).

More than 15% of households in the City of Adelaide were receiving rent assistance (22.8% and 1,267 renters), with other high proportions in West Torrens - East (17.3%, 1,770), Port Adelaide Enfield - East (16.3%, 1,824 renters, the largest number at the SLA level), Salisbury - Inner North (15.3%, 1,306), Charles Sturt - North-East (15.1%, 1,500), Playford - West Central (15.1%, 681) and Playford - Elizabeth (15.1%, 1,600).

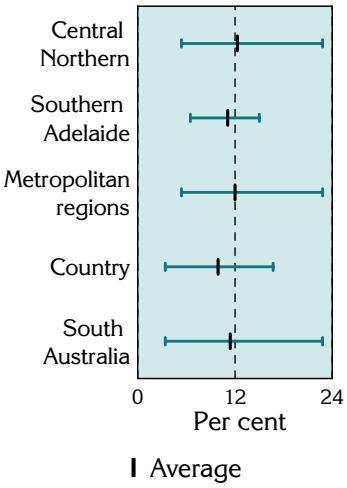
At the other end of the scale, the lowest proportions of households receiving rent assistance were in Tea Tree Gully - North (5.4%, 485), Adelaide Hills - Central (6.2%, 273) and Tea Tree Gully - Hills (6.4%, 280).

Southern Adelaide

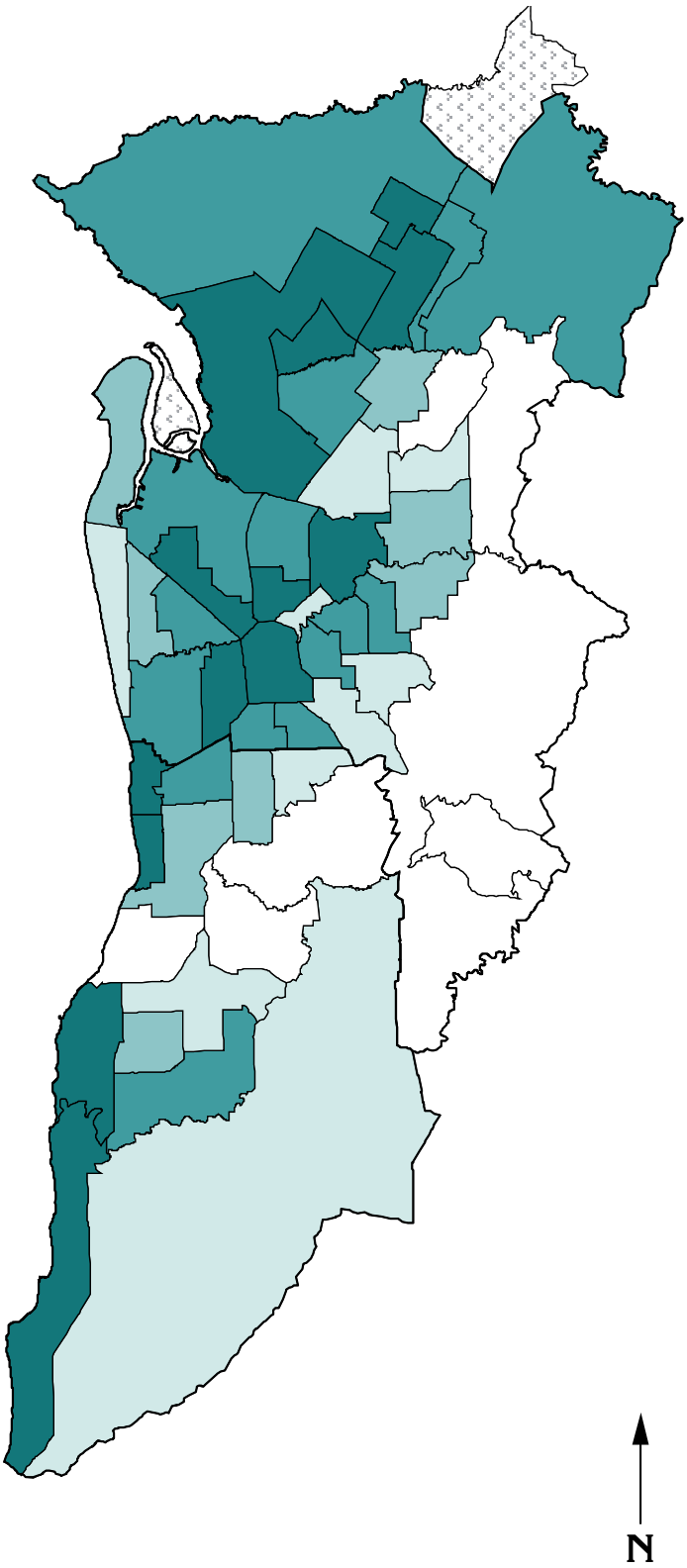
There were 13,600 renters receiving rent assistance in the south, representing 11.1% of households in the region. The SLAs in the City of Holdfast Bay had the highest proportions of renters with 15.0% in Holdfast Bay - North (1,257 renters) and 14.4% in Holdfast Bay - South (825). The Onkaparinga SLAs of - North Coast (14.4%, 1,020) and - South Coast (14.1%, 1,205) also had high proportions.

The lowest proportions in the Southern region were recorded in Marion - South (6.5%, 420 renters), Onkaparinga - Reservoir (6.8%, 563), Mitcham - Hills (7.2%, 615), Onkaparinga - Hills (8.2%, 313) and Mitcham - North-East (8.8%, 531).

Map 4.43
Rent assistance, metropolitan regions, 1999 to 2002



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent renters receiving rent assistance, by SLA

- *14.0% or more*
- *12.0 to 13.9%*
- *10.0 to 11.9%*
- *8.0 to 9.9%*
- *fewer than 8.0%*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from Centrelink ***Details of map boundaries are in Appendix 1.2***

Country South Australia

The proportion of households receiving rent assistance in country South Australia from 1999 to 2002, 9.9% of households (15,200 renters), was lower than that for the metropolitan regions (Table 4.55).

Rent assistance was paid to households across much of the State, other than in the far north (Map 4.44).

Table 4.55: Regional totals, renters receiving rent assistance, 1999 to 2002

Region	No.	% of Region	% of State
Hills Mallee Southern	4,659	11.4	7.2
Wakefield[1]	3,507	9.8	5.4
South East	2,012	8.9	3.1
Northern & Far Western	1,286	7.3	2.0
Eyre	1,155	9.6	1.8
Mid North	1,106	9.2	1.7
Riverland	1,476	11.8	2.3
Country SA	**15,200**	**9.9**	**23.5**
Central Northern	35,763	12.3	55.4
Southern	13,600	11.1	21.1
Metropolitan regions	**49,363**	**12.0**	**76.5**
South Australia	**64,563**	**11.4**	**100.0**

[1]**Gawler is included in Wakefield region**

There were weak associations evident in the correlation analysis at the SLA level with most of the indicators of socioeconomic disadvantage. These results, together with the weak inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between those receiving rent assistance and socioeconomic disadvantage (Table 8.2).

The regions

Overall, 11.8% of the **Riverland's** households were receiving rent assistance, the highest proportion in country South Australia (1,476 renters). The SLAs with the highest proportions were Renmark Paringa - Renmark (13.9%, 415 renters), Unincorporated Riverland (13.3%, but only nine renters), Berri and Barmera - Berri (12.7%, 326) and Renmark Paringa - Paringa (12.5%, 73).

Hills Mallee Southern had the largest number of households receiving rent assistance, with 4,659 renters, and the second highest rate (11.4% of households). The largest concentrations were in Victor Harbor (16.7%, 754) and Alexandrina - Coastal (15.7%, 604). There was also a large number of renters in Murray Bridge (808, 13.2%).

Wakefield region had a large number of households receiving rent assistance, with 3,507 renters, 9.8% of households. The largest concentrations of renters were found in Gawler (12.5%, 864) and Copper Coast (11.3%, 479). High proportions of renters were also recorded in Mallala (9.9%, 253), Yorke Peninsula - South (9.8%, 137) and Goyder (9.6%, 156).

There were 1,155 households receiving rent assistance in **Eyre**, or 9.6% of households. The SLAs of Port Lincoln (11.0%, 554), Tumby Bay (10.7%, 113) and Streaky Bay (10.0%, 69) all had ten per cent or more of households receiving rent assistance.

In the **Mid North** region, the 1,106 renters receiving rent assistance comprised 9.2% of households. Within this region, there were high proportions of renters living in Barunga West (10.7%, 113) and Peterborough (10.1%, 81). The majority of renters in this region were located in Port Pirie - City (543, 9.9%).

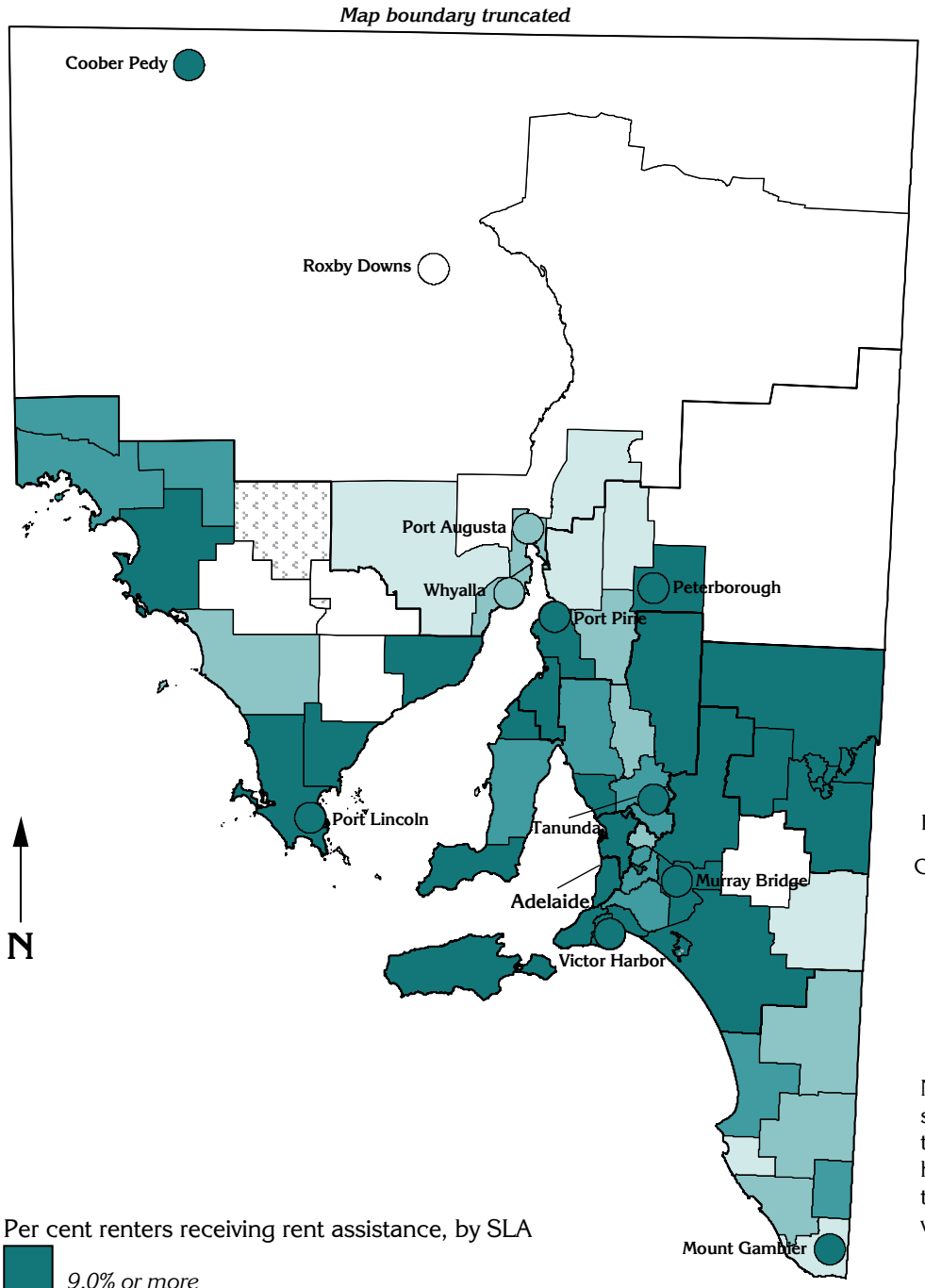
In the **South East**, 8.9% of households received rent assistance (2,012 renters). The highest proportion and number were found in Mount Gambier (11.8%, 905 renters). Relatively high proportions were also found in Lacepede (8.8%, 78), Wattle Range - East (8.2%, 89) and Naracoorte and Lucindale (7.7%, 221).

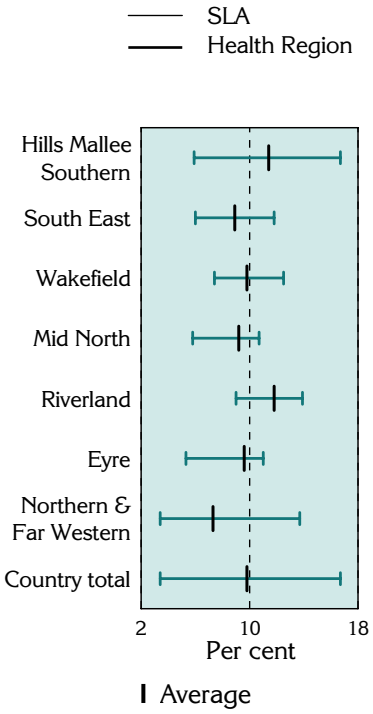
The lowest regional percentage of households receiving rent assistance was recorded in **Northern and Far Western** (7.3%, 1,286 renters). The highest proportion in this region was in Coober Pedy (13.7%, 113 renters). There were large numbers of households receiving rent assistance in Whyalla (635 renters, 7.4%) and Port Augusta (381, 7.4%).

ASGC Remoteness classification

The proportion of households receiving rent assistance decreased with increasing remoteness, from a high of 12.0% in the Major Cities' class to a low of 8.7% in the Very Remote areas. More than three quarters (76.4%) of renters lived in the Major Cities' areas.

Map 4.44
Rent assistance, South Australia, 1999 to 2002





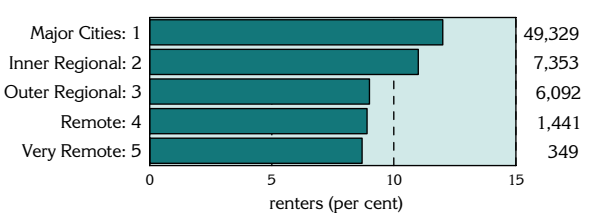
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent renters receiving rent assistance, by SLA

- *9.0% or more*
- *8.0 to 8.9%*
- *7.0 to 7.9%*
- *6.0 to 6.9%*
- *fewer than 6.0%*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100*

ASGC Remoteness classification



Source: Calculated on data from Centrelink ***Details of map boundaries are in Appendix 1.2***

Dwellings with no motor vehicle, 2001

People living in households without a car face many disadvantages in gaining access to jobs, services and recreation, especially if they are in low-density outer suburbia, or outside of Metropolitan Adelaide in rural or remote areas, or in a country town. The ability to afford to maintain a vehicle in reliable condition to meet the household's transport needs is also important.

Between 1986 and 1991, there was a small increase at the State level in the proportion of dwellings with no motor vehicle garaged or parked there on Census night (Table 4.56). Since then, there has been an annual reduction in the number of dwellings with no vehicle as a proportion of the population in both Metropolitan Adelaide and country South Australia, although the number of these dwellings has risen (1.3% and 11.2%, respectively). In 2001, the proportion of these dwellings in Metropolitan Adelaide remained higher than in country South Australia.

Table 4.56: Dwellings with no motor vehicle

Per cent

Section of State	1986	1991	1996	2001	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	13.2	13.4	12.5	10.9	-17.2
Country	8.1	8.8	8.2	7.4	-8.6
South Australia	11.8	12.2	11.4	9.4	-20.5

[1]**Per cent change over 15 years in the proportion of dwellings with no motor vehicle**

Metropolitan regions

The metropolitan regions of Adelaide are highly dependent upon the automobile. In 2001, only one in ten occupied private dwellings (46,090) did not have a motor vehicle owned or used by a member of the household, and garaged or parked there on Census night (Table 4.57).

Variations in car-ownership levels within the metropolitan regions are influenced by socioeconomic status, age structure, dwelling type and distance from the city centre. The map (Map 4.45) shows a band of white along the eastern side of the metropolitan regions from the north-east to the south, which represents the very low (fewer than 4.0%) levels of dwellings without a motor vehicle. Areas with high proportions of dwellings without a motor vehicle predominate in the inner SLAs (in particular to the north-west and south-west of the city centre), and in the outer northern suburbs.

The correlation analysis showed a strong association between dwellings with no motor vehicle and public rental housing, people from a non-English speaking background resident for less than five years, unemployment, low income families, jobless families and the Indigenous population. These results, together with the weak inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the small area level between dwellings with no motor vehicle and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

The highest proportion of dwellings without a motor vehicle was in the City of Adelaide (22.1%, 1,421 dwellings), where proximity of facilities and the availability of public transport make cars less of a necessity. However, this is not to deny that some of this group may desire a car but are unable to afford one. There were also high proportions in Port Adelaide Enfield - Port (20.7%, 2,205 dwellings), Playford - Elizabeth (19.9%, 2,054), Port Adelaide Enfield - Inner (18.2%, 1,551), West Torrens - East (16.9%, 1,827), Norwood Payneham St Peters - East (16.7%, 1,183), Charles Sturt - North-East (16.4%, 1,723) and Playford - West Central (16.3%, 750).

The areas with the lowest proportions of these dwellings were Playford - Hills (1.1%), Adelaide Hills - Ranges (1.4%), Tea Tree Gully - Hills (3.3%), Onkaparinga - Hills (3.4%) and Adelaide Hills - Central (4.0%).

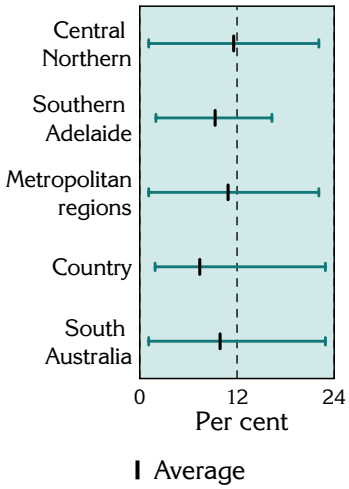
There were large numbers of dwellings without a motor vehicle in West Torrens - West (1,540 dwellings, 12.8%), Port Adelaide Enfield - Coast (1,414, 12.4%), Charles Sturt - Coastal (1,248, 9.7%) and - Inner West (1,246, 12.7%), and Salisbury - Central (1,080, 11.0%).

Southern Adelaide

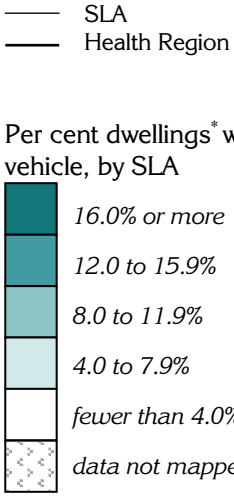
There were only two SLAs mapped in the highest range of dwellings with no motor vehicle in the Southern region; these were Marion - North (16.3%, 1,893 dwellings) and Holdfast Bay - North (16.1%, 1,440). Other SLAs with above average proportions in this region were Onkaparinga - North Coast (13.9%, 1,014 dwellings) and Marion - Central (13.3%, 1,852). There were 1,038 dwellings without a motor vehicle in Mitcham - West (11.4%).

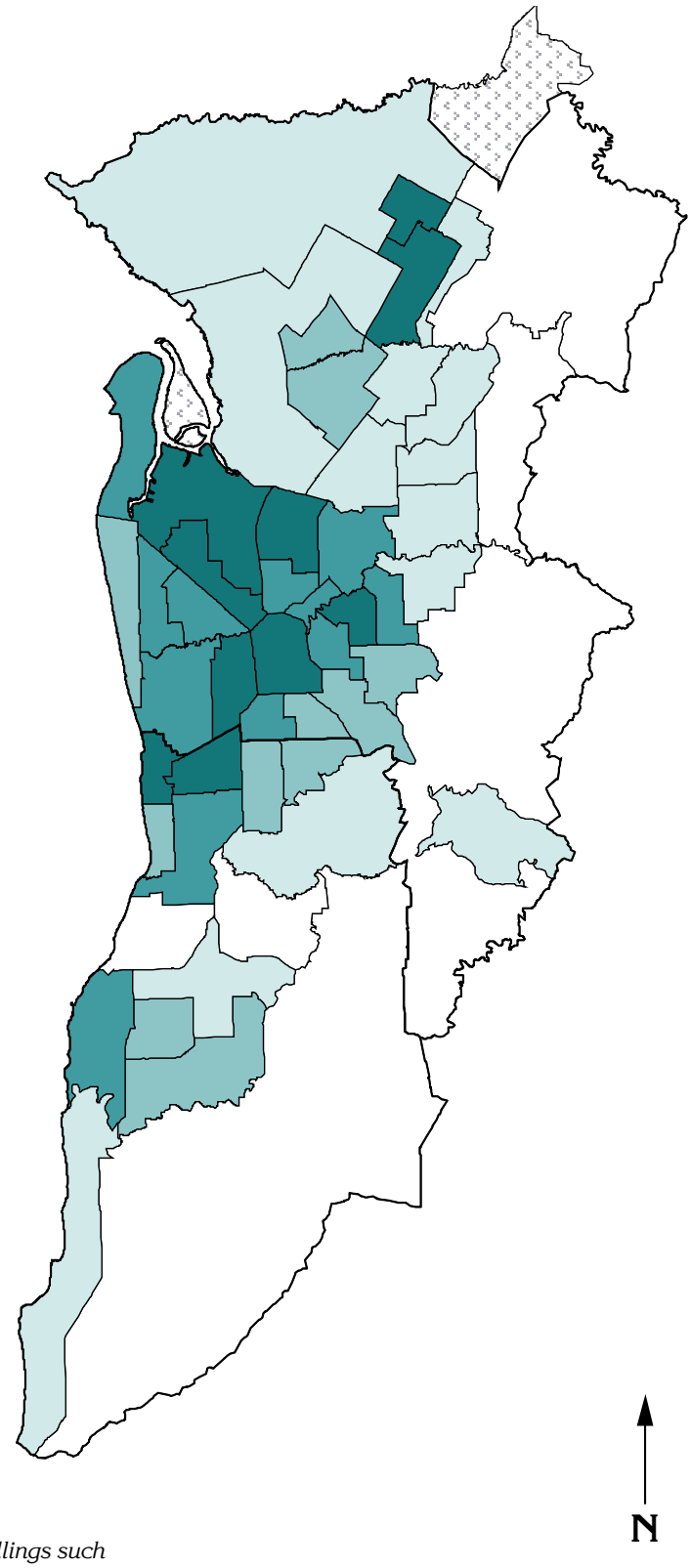
Low proportions of dwellings with no motor vehicle were mapped in Marion - South (2.0%) and Onkaparinga - Reservoir (2.6%).

Map 4.45
Dwellings with no motor vehicle, metropolitan regions, 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines the range of the indicator at the SLA level within the region.





* *Includes all private dwellings: excludes non-private dwellings such as institutions, motels, guest houses etc and caravans in parks*

\# *Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from ABS Census 2001 ***Details of map boundaries are in Appendix 1.2***

Dwellings with no motor vehicle, 2001

Country South Australia

In 2001, there were 11,954 dwellings in the country areas of South Australia in which there was no motor vehicle owned or used by a member of the household, garaged or parked there on Census night (7.4% of total dwellings).

Overall, there were fewer dwellings without cars in country South Australia than in the metropolitan regions; this is to be expected, given the low population densities typical of rural South Australia and the long distances many people must travel for social interaction, to gain access to services and facilities, and in connection with employment. The low rate of car ownership in **Northern and Far Western** is notable, given the relative isolation of much of the region, and reflects the above average proportion of the Indigenous population (Table 4.57).

Table 4.57: Regional totals, dwellings with no motor vehicle, 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	2,533	6.0	4.4
Wakefield[1]	2,268	6.1	3.9
South East	1,541	6.6	2.7
Northern & Far Western	2,597	13.1	4.5
Eyre	910	7.1	1.6
Mid North	1,186	9.6	2.0
Riverland	919	7.1	1.6
Country SA	**11,954**	**7.4**	**20.6**
Central Northern	34,460	11.6	59.4
Southern	11,630	9.3	20.0
Metropolitan regions	**46,090**	**10.9**	**79.4**
South Australia	**58,044**	**9.9**	**100.0**

[1]**Gawler is included in Wakefield region**

The correlation analysis showed a very strong association at the SLA level between dwellings with no motor vehicle and single parent families and the Indigenous population; and a strong association with jobless families and unemployment. Very strong inverse associations were reported with Internet use at home, female labour force participation and full-time education participation. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the small area level between dwellings without a motor vehicle and socioeconomic disadvantage (Table 8.2).

The Regions

There were 2,597 dwellings without a motor vehicle in **Northern and Far Western** (13.1% of all dwellings). Within this region, there were high proportions in Unincorporated Far North (17.4%, 306 dwellings), Whyalla (15.5%, 1,382), Port Augusta (13.0%, 674), Unincorporated Whyalla (11.5%, 13), and Flinders Ranges (8.5%, 65).

In the **Mid North**, 9.6% of dwellings did not have a vehicle (1,186 dwellings). Two SLAs in this region mapped in the highest range; they were Port Pirie - City (13.3%, 748 dwellings) and Peterborough (13.2%, 112).

There were 919 dwellings without a motor vehicle in the **Riverland**, 7.1% of all dwellings. Within this region, Unincorporated Riverland mapped in the highest range with 22.9%, but had just eleven dwellings without a motor vehicle. Other SLAs in this region that had relatively large numbers were Renmark Paringa - Renmark (247 dwellings, 8.0%) and Berri and Barmera - Berri (204, 7.6%).

None of the SLAs in the **Eyre** region mapped in the highest range for dwellings with no motor vehicle; Port Lincoln had 486 dwellings without a motor vehicle (9.3%), more than half of all dwellings without a motor vehicle in this region (910 dwellings, 7.1%).

In the **South East,** there were 1,541 dwellings without a vehicle (6.6%), more than half of which were located in Mount Gambier (844 dwellings, 9.3%). There were 220 car-less dwellings in Wattle Range - West (6.6%).

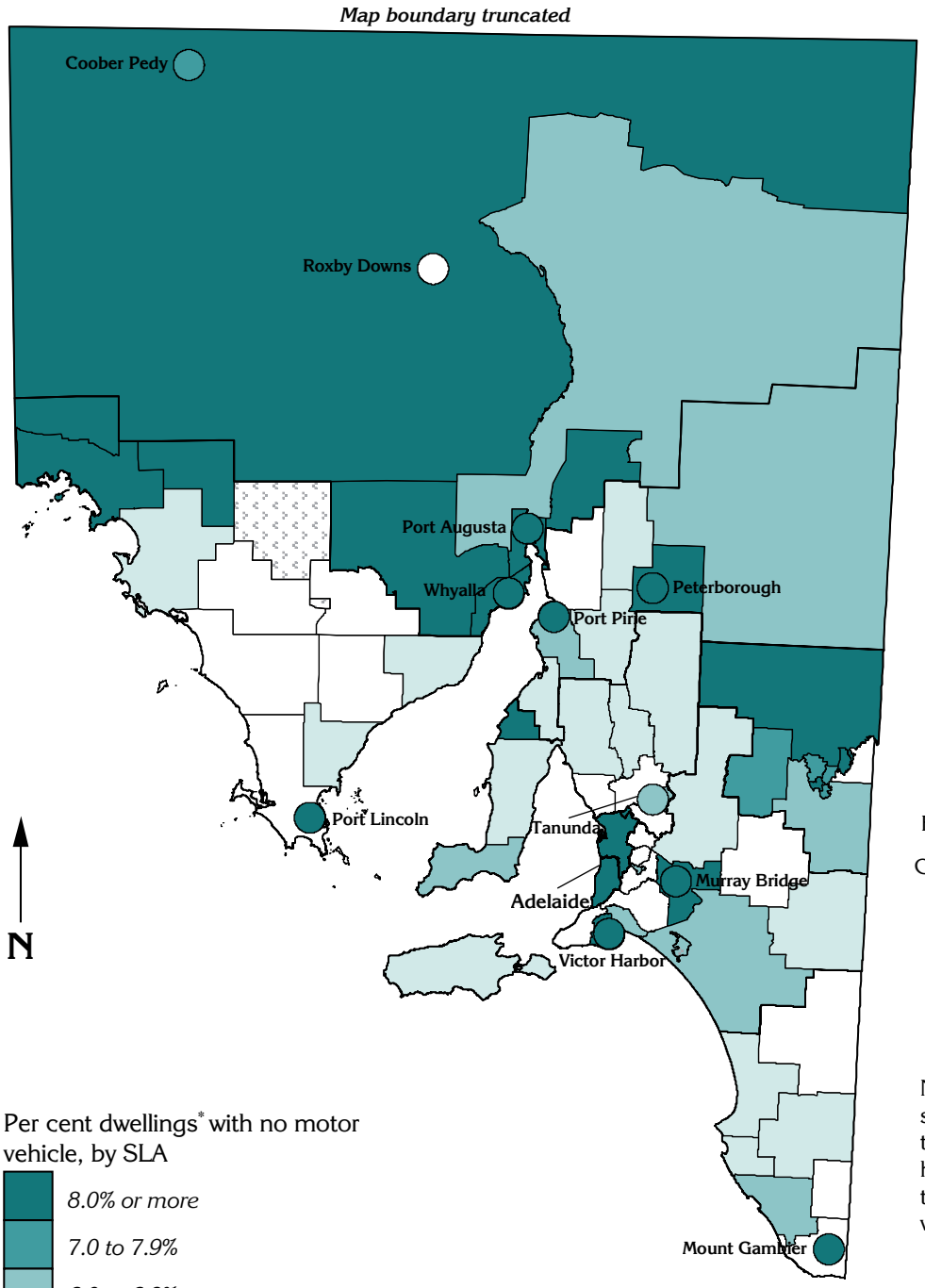
Despite there being a relatively large number of dwellings without a motor vehicle (2,268 dwellings, 6.1%) in **Wakefield**, they were reasonably spread throughout the region, with only Gawler mapping in the highest range (9.3%, 648). There were also a large number of these dwellings in Copper Coast (381 dwellings, 8.5%).

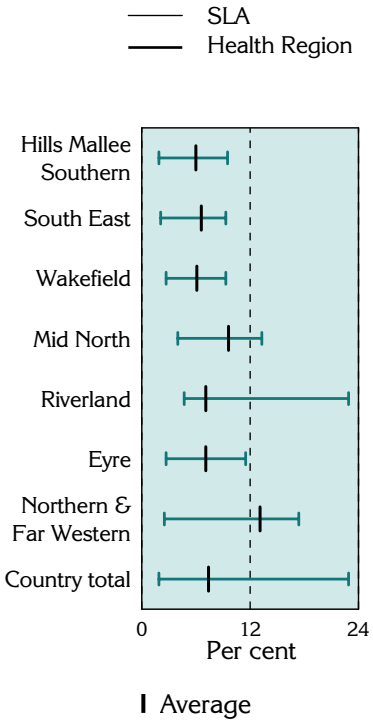
There were 2,533 dwellings without a motor vehicle in **Hills Mallee Southern**, 6.0% of all dwellings in the region, reflecting the higher housing density in this region compared with other regions in country South Australia. The largest numbers were in the SLAs of Murray Bridge (614 dwellings, 9.5%), Victor Harbor (384, 8.2%), Mount Barker - Central (368, 6.5%) and Alexandrina - Coastal (244, 6.1%).

ASGC Remoteness classification

The highest proportions of dwellings without a motor vehicle were in the Major Cities (11.0%) and Very Remote (10.4%) areas, with the lowest in the Inner Regional (5.8%) and Remote (6.4%) areas. The distribution of the Indigenous population is likely to have influenced the high proportion in the Very Remote areas.

Map 4.46
Dwellings with no motor vehicle, South Australia, 2001





Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

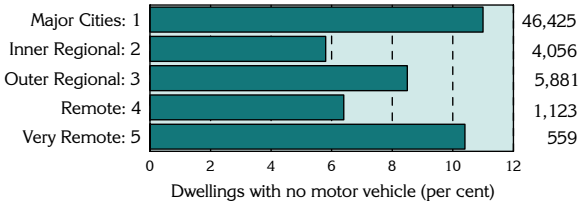
Per cent dwellings* with no motor vehicle, by SLA

- *8.0% or more*
- *7.0 to 7.9%*
- *6.0 to 6.9%*
- *5.0 to 5.9%*
- *fewer than 5.0%*
- *data not mapped#*

* *Includes all private dwellings: excludes non-private dwellings such as institutions, motels, guest houses etc and caravans in parks*

\# *Data were not mapped because the SLA has a population of less than 100*

ASGC Remoteness classification



Source: Calculated on data from ABS Census 2001

Details of map boundaries are in Appendix 1.2

SEIFA Index of Relative Socio-Economic Disadvantage, 2001

A description of the SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) is provided on page 23. Briefly, the IRSD score measures the relative socioeconomic disadvantage of the population of an area in comparison with the average for South Australia as a whole. High index scores indicate least disadvantage and low index scores indicate greater disadvantage.

The IRSD score for Metropolitan Adelaide has been consistently higher than the score for the rest of the State since 1986 (Table 4.58). There was no annual change in index scores in country South Australia over the 15-year period from 1986, despite a minor decline between 1986 and 1996. Similarly, the index scores in Metropolitan Adelaide fluctuated only marginally over this period.

Table 4.58: Index of Relative Socio-Economic Disadvantage

	Index				
Section of State	**1986**	**1991**	**1996**	**2001**	**Per cent change[1]**
Metropolitan Adelaide (incl. Gawler)	1006	1006	1010	1005	-0.1
Country	985	982	980	985	0.0
South Australia	1000	1000	1000	1000	..

[1]**Per cent change over 15 years**

Metropolitan regions

At the 2001 Census, the IRSD score for the metropolitan regions (excluding Gawler) was 1006, marginally (6 index points) higher than the index score for South Australia of 1000 (Table 4.59).

The lowest IRSD scores (that is, scores indicating the highest levels of disadvantage) are found in a contiguous band of SLAs covering the north-west, inner north and much of the outer north, as well as in some parts of the outer south (Map 4.47). Areas with populations of least socioeconomic disadvantage include the City of Adelaide; adjacent SLAs to the north, east and south; a band of SLAs further out, to the south-east, east and north-east; and some beach-side SLAs.

The IRSD, as expected, was highly correlated with many of the individual variables mapped. The strongest inverse associations were with the variables for jobless families, low income families, families with unskilled and semi-skilled workers, single parent families, the Indigenous population, unemployment and public rental housing. The inverse correlations indicate a positive association at the SLA level between this aggregate measure of socioeconomic disadvantage and the individual indicators analysed (Table 8.1).

Central Northern Adelaide

This region had a very wide variation in index scores (see graph opposite). The most disadvantaged SLAs in the metropolitan regions (and some of the most disadvantaged in the State) were Playford - West Central (with an index score of 762), Port Adelaide Enfield - Port (799) and Playford - Elizabeth (807). Other SLAs with IRSD scores below average included Port Adelaide Enfield - Inner (an index score of 886), Salisbury - Inner North (891), Salisbury - Central (897), Salisbury Balance (920), Charles Sturt - North-East (929), Playford - West (948), Charles Sturt - Inner West (965), Port Adelaide Enfield - East (972), Salisbury - South-East (973), Charles Sturt - Inner East (974), Salisbury - North-East (980), Port Adelaide Enfield - Coast (981), West Torrens - East (990), Playford - East Central (992) and Campbelltown - West (999).

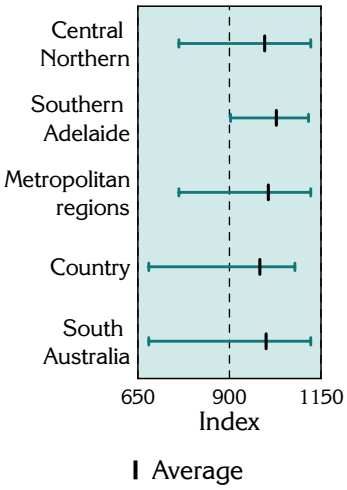
The areas with the highest IRSD scores (most advantaged) were located in the eastern suburbs and included Burnside - South-West (an index score of 1122), Adelaide Hills - Ranges (1120), Adelaide Hills - Central (1118), Burnside - North-East (1117), Walkerville (1114), Unley - East (1102), Unley - West (1091), Playford - Hills (1089), Norwood Payneham St Peters - West (1083), Tea Tree Gully - Hills (1078), Adelaide (1072) and Prospect (1066).

Southern Adelaide

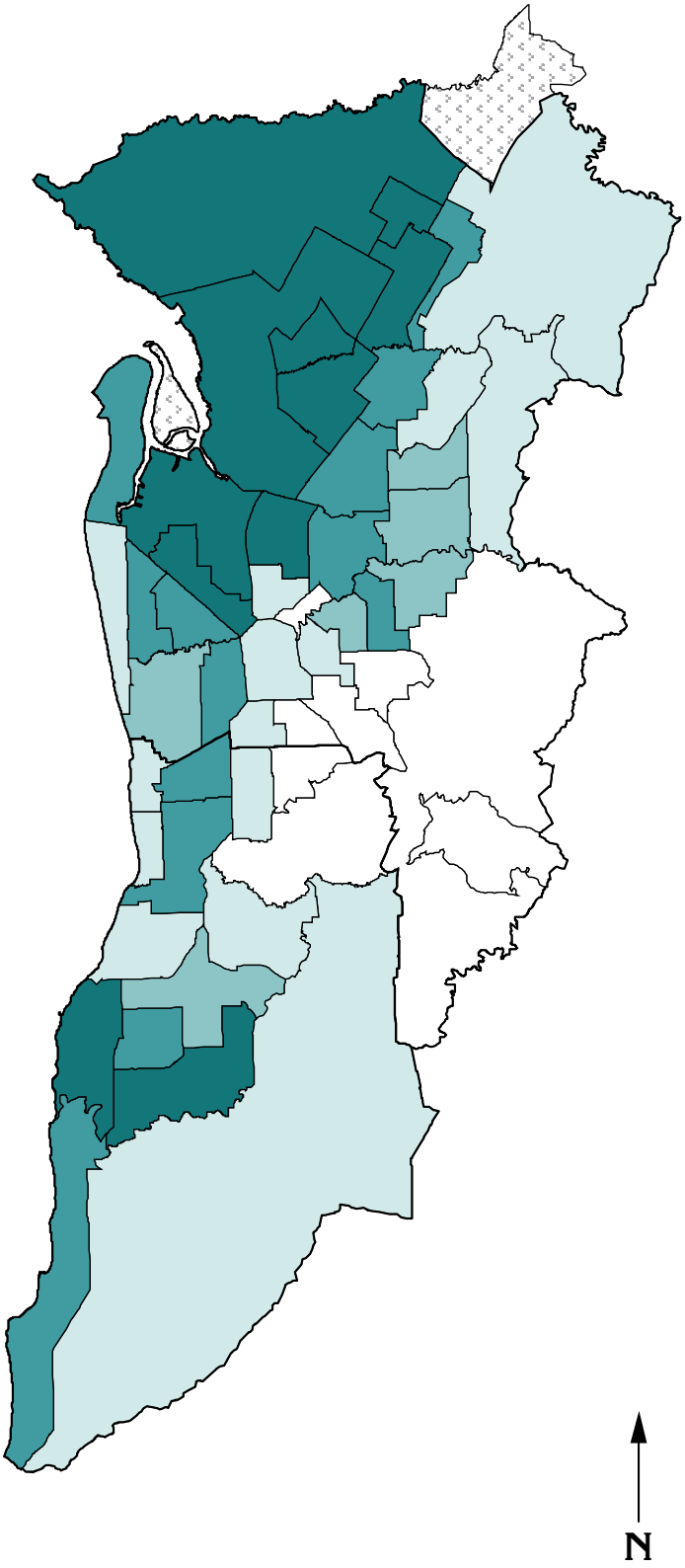
The most disadvantaged SLAs in the Southern region, with an overall index score of 1028, were Onkaparinga - North Coast (an index score of 903), - Hackham (925), - Morphett (958) and - South Coast (975), and Marion - North (978) and - Central (999).

The SLAs with the highest IRSD scores (most advantaged) in the south were Mitcham - North-East (an index score of 1116), Mitcham - Hills (an index score of 1107), Onkaparinga - Reservoir (1091), Holdfast Bay - South (1074), Marion - South (1070), Onkaparinga - Hills (1068) and Holdfast Bay - North (1066).

Map 4.47
Index of Relative Socio-Economic Disadvantage, metropolitan regions, 2001



Note: The black vertical lines show the average Index score in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Index scores, by SLA

- *below 950 most disadvantaged*
- *950 to 1000*
- *1000 to 1050*
- *1050 to 1100*
- *1100 and above*
- *data not mapped**

**Data for Torrens Island have been mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: Calculated on data from SEIFA 2001 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In 2001, the IRSD score for country South Australia was 983, slightly below the index score for South Australia of 1000. The lowest index scores were recorded for SLAs in the north and west of the State, as well as in a number of the towns mapped; at both the SLA and regional level, the lowest scores coincide with areas with above average Indigenous populations.

The majority of the regions in country South Australia had IRSD scores below 1000, indicating that they experience greater levels of disadvantage than in the State as a whole. The IRSD score for **Northern and Far Western** (926) was lower than the State average by 74 index points, reflecting the relative disadvantage in this region (Table 4.59).

Table 4.59: Regional totals, Index of Relative Socio-Economic Disadvantage, 2001

Region	IRSD Score	Pop. in Region
Hills Mallee Southern	1005	108,365
Wakefield[1]	1004	95,011
South East	987	60,760
Northern & Far Western	926	49,835
Eyre	996	33,030
Mid North	965	30,600
Riverland	967	32,609
Country SA	**983**	**411,292**
Central Northern	996	739,514
Southern	1028	316,372
Metropolitan regions	**1006**	**1,055,952**
South Australia	**1000**	**1,467,244**

[1]**Gawler is included in Wakefield region**

There was a strong association in the correlation analysis at the SLA level with a number of the indicators of socioeconomic disadvantage, including very strong inverse correlations with dwellings with no motor vehicle, children living in jobless families and the Indigenous population. Very strong (positive) correlations were recorded with full-time participation in education, female labour force participation and Internet use at home (Table 8.2).

The Regions

The most disadvantaged region in country South Australia was **Northern and Far Western**, with an IRSD score of 926. This region also has the largest Indigenous population (12.0% of the population). Within the region, there were low IRSD scores in the SLAs of Unincorporated Whyalla (an index of 809, 212 people, 2.7% of whom identified as Indigenous), Unincorporated Far North (816, 5,926 people, 41.4% Indigenous), Whyalla (916, 21,506 people, 3.0% Indigenous), Coober Pedy (942) and Port Augusta (948). These low scores contrast with the high index score of 1035 in Roxby Downs.

The **Mid North** had an overall IRSD score of 965. The SLAs of Peterborough (with an index of 895, 1,986 people, 3.1% Indigenous) and Port Pirie - City (925) were the most disadvantaged. Orroroo/Carrieton (with an index score of 1036) was the most advantaged.

The IRSD score for the **Riverland** was 967. Unincorporated Riverland had the lowest IRSD score in the State, an index of 680 calculated for 143 people (62.3% of whom identified as Indigenous). There were also low scores in Renmark Paringa - Renmark (946) and Berri and Barmera - Barmera (952). The highest score was in Loxton Waikerie - East (992).

The **South East** had an IRSD of 987, with relatively high scores in the SLAs of Robe (1027) and Grant (1026) and the lowest scores in the region in Mount Gambier (962) and Wattle Range - West (963).

The majority of the SLAs in the **Eyre** region (996) had above average IRSD scores, including Kimba (1049), Unincorporated Lincoln (1048), Le Hunte (1045) and Cleve (1040). SLAs in the region with the lowest IRSD scores were Unincorporated West Coast (with an index of 881, 595 people, 43.3% Indigenous) and Port Lincoln (962).

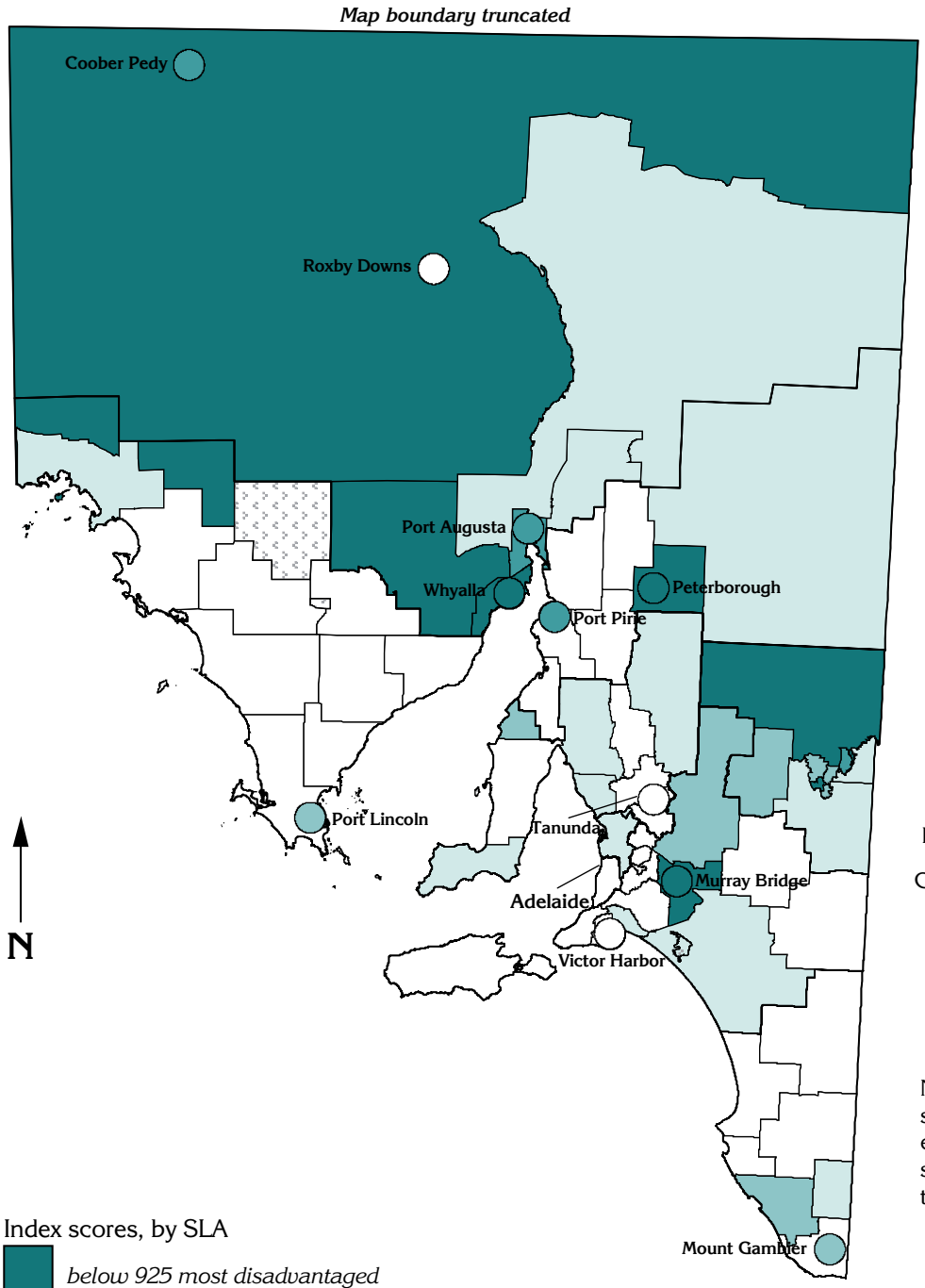
The **Wakefield** region (with an overall index of 1004) was relatively advantaged, with most of the SLAs recording scores of over 1000. The two SLAs with the lowest score in this region were Copper Coast (971) and Mallala (980). Scores were highest in Barossa – Barossa (1046) and - Tanunda (1043), Light (1026) and Clare and Gilbert Valleys (1024).

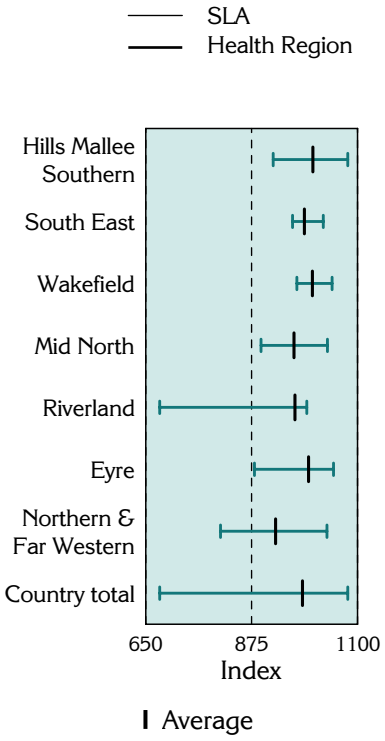
The **Hills Mallee Southern** region was also relatively advantaged, with an IRSD score of 1005 and scores above 1000 in a majority of SLAs. The lowest scores were in Murray Bridge (921, 16,576 people, 4.1% Indigenous) and Mid Murray (961); SLAs with the highest scores included Adelaide Hills - North (1079), Mount Barker Balance (1057), Adelaide Hills Balance (1052), Southern Mallee (1040) and Alexandrina - Strathalbyn (1027).

ASGC Remoteness classification

The graph of the IRSD shows the most accessible areas to be the most advantaged, with scores of 1006 and 1005 in the Inner Regional and Major Cities classes, respectively. The lowest index score (923) was recorded in the Very Remote areas.

Map 4.48
Index of Relative Socio-Economic Disadvantage, South Australia, 2001





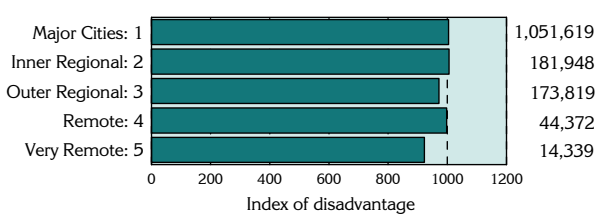
Note: The black vertical lines show the average Index score in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Index scores, by SLA

- *below 925 most disadvantaged*
- *925 to 949*
- *950 to 974*
- *975 to 999*
- *1000 and above*
- *data not mapped**

**Data were not mapped because the SLA has a population of less than 100*

ASGC Remoteness classification



Source: Calculated on data from SEIFA 2001

Details of map boundaries are in Appendix 1.2

Variation in socioeconomic status within the major towns

In previous versions of the atlas, it has been noted that there are variations in socioeconomic disadvantage within the towns mapped, just as there are variations across country South Australia and within Adelaide.

The data in Table 4.60 describe the extent of this variation within the towns mapped in the atlas, using the Index of Relative Socio-Economic Disadvantage (IRSD) as the measure. The table shows the highest and lowest IRSD scores, and the difference between these scores, in each town, at the level of the Collection District (CD), the areas for which Census data are available within these towns. There is a 51.0% variation in IRSD scores across the CDs in Mount Gambier, with variations above thirty per cent in Murray Bridge (37.7%), Port Lincoln (36.8%), Whyalla (36.2%), Port Augusta (35.0%) and Port Pirie (33.9%).

For towns with sufficient (at least 15) CDs, the CDs were ranked on the basis of their IRSD score, then grouped into five groups of approximately equal population. The average IRSD score was then calculated for each of these groups for each town: graphs of these data are in Figure 4.6. The towns for which this calculation has been made are shown in bold type in Table 4.60.

Table 4.60: Variation in SEIFA Index of Relative Socio-Economic Disadvantage scores in major towns in country South Australia, 2001

Town	Census Population	Highest CD index value	Lowest CD index value	Difference: high to low		
				Index points	Per cent[2]	Rank
Coober Pedy (DC)	2,385	970	885	85	8.8	9
Mount Gambier (C)	**22,864**	**1111**	**543**	**568**	**51.0**	**1**
Murray Bridge	**16,576**	**1041**	**649**	**392**	**37.7**	**2**
Peterborough	1,986	972	773	199	20.5	7
Port Augusta	**13,292**	**1099**	**714**	**385**	**35.0**	**5**
Port Pirie	**13,661**	**1068**	**706**	**362**	**33.9**	**6**
Port Lincoln	**13,396**	**1089**	**688**	**401**	**36.8**	**3**
Roxby Downs	3,501	1045	1013	32	3.1	11
Tanunda	4,400	1060	991	69	6.5	10
Victor Harbor	**10,747**	**1076**	**946**	**130**	**12.1**	**8**
Whyalla	**21,506**	**1103**	**704**	**399**	**36.2**	**4**

[1] **Variation is measured at the Collection District (CD) level**

[2] **Per cent difference is the difference between the highest and lowest index values at the CD level, expressed as a proportion of the highest CD value**

Source: Compiled from data in ABS SEIFA package

Grouping CDs to larger areas (quintiles, comprising approximately 20.0% of each town's population[4]) provides a more robust measure of variation in socioeconomic status, as the quintiles have larger populations than single CDs (Figure 4.6).

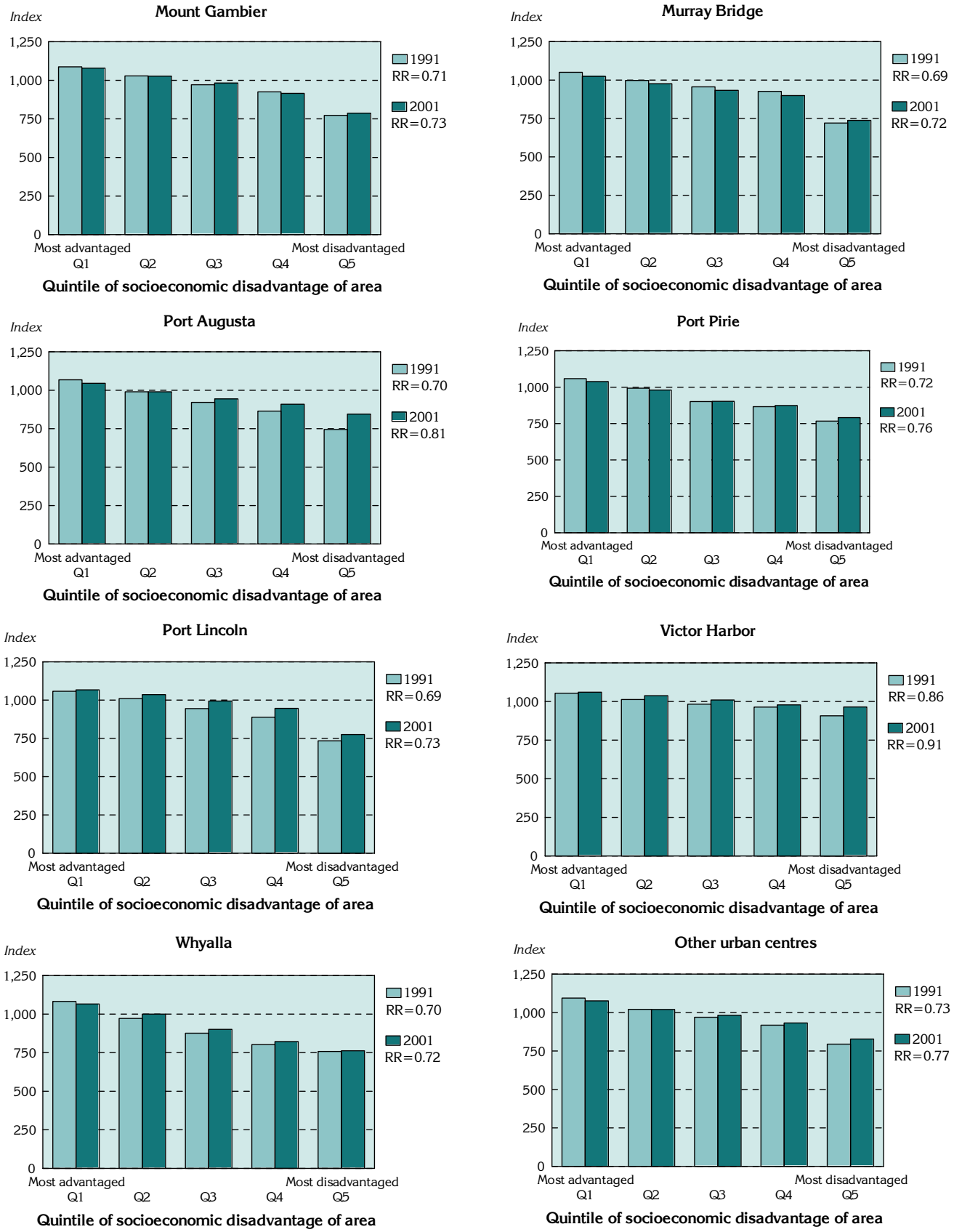
There is a clear gradient in IRSD scores in each of the towns, other than Victor Harbor. The extent of variation between the most advantaged and most disadvantaged quintiles is shown by the rate ratio (shown on the chart as 'RR'). The rate ratio indicates the relative size of the gap between the IRSD scores in the most disadvantaged (Quintile 5) and most advantaged (Quintile 1) areas. For example, the rate ratio in Whyalla in 2001 of 1.40 shows that the IRSD score in the most disadvantaged areas was 40.0% higher than in the most advantaged areas. Similar differentials were found for 2001 in Murray Bridge (39.0%), Port Lincoln (38.0%) and Mt Gambier (37.0%).

The extent of any change over the years in relative socioeconomic disadvantage within each town can be gauged from a comparison of the rate ratios in 1991 and 2001. Using Port Augusta as an example, the rate ratio has reduced from 1.43 to 1.24; so, under this measure, the differential between the most disadvantaged and the most well-off has closed from 43.0% to 24.0%. There has been a reduction, albeit less marked than in Port Augusta, in the differential for each of the towns, and across 'Other urban', which is the sum of all urban centres (towns) with populations of 1,000 or more.

The final chart in Figure 4.6 shows the same information for all people living in an urban setting (towns with populations of 1,000 or more) outside of the metropolitan regions.

[4] The way in which the quintiles are compiled is described in the Glossary.

Figure 4.6: Variation in IRSD scores within selected country towns, 2001



Note: The data on which these charts are based are in Appendix 1.6, Table A10 and the grouping of areas is described in the Glossary

Source: Compiled from data in ABS SEIFA package

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5 Income support payments

Introduction

This section includes details of selected pensions, benefits and allowances paid by Centrelink and the Department of Veterans' Affairs (DVA). The intention is to present data to indicate the proportion of the population in receipt of income support from the Commonwealth Government, to highlight variations in the distribution of this population across the State and to compare this distribution with other data in the atlas. Comparisons are made with data from 1992 and 1996.

Explanatory notes

Data mapped

The pensions and benefits included in the analysis are listed in Table 5.1, which also shows the way in which the Centrelink and DVA data were combined for mapping. Percentages were calculated on population figures representing as near as possible the ages applicable to the particular pensioner and beneficiary groups.

Details of those receiving the DVA service pension (Age) have been combined with those for the Centrelink Age Pension and, similarly, details of recipients of the DVA Service Pension (Permanently Incapacitated) have been combined with those for the Disability Support Pension (DSP) paid by Centrelink. People in receipt of the Veteran Disability pension (which includes the Totally and Permanently Incapacitated pension) were excluded from the analysis, as this pension is paid as compensation for service-related incapacity, and is not regarded as an income support payment. Recipients of the War Widows' pension were excluded on the same grounds.

In the case of the sole parents receiving a Parenting Payment (Single), only females were mapped, as they comprised over 90% of this pension group.

Data mapped for unemployment beneficiaries relate to Youth Training Allowance, the Newstart Allowance and Community Development Employment Projects (CDEP). CDEP is, officially, designated as a job creation scheme: however, it is, effectively, a 'work for the dole' scheme for the Indigenous population. It is for this reason that it is included in these unemployment figures. The major influence of the inclusion of these data is on the figures for the **Northern and Far Western** and **Eyre** regions. The box, overleaf, includes additional information on this program.

Table 5.1: Income support payments mapped, 2004

Centrelink	Department of Veterans' Affairs (DVA)	Denominator (percentage of the population)	
Pensions	**Pensions**	**Age group (years)**	
Age[1]	Service[2]	Males	65 & over
		Females	60 & over
Disability Support	Service[3]	Males	15 to 64
		Females	15 to 59
Sole parent[4]	..[5]	Females	15 to 54
Labour market allowances			
Youth Training & Newstart[6]	..	Males	15 to 64
		Females	15 to 59
Children[7]	..	Population	0 to 16

[1] **Excludes wife pension, as recipients are under age-pensionable age. The small number of males under 65 years and females under 60 years of age receiving an Age Pension were also excluded from this analysis**

[2] **Age: Includes wife/widow pension, as recipients are mainly of age-pensionable age**

[3] **Permanently Incapacitated: data for males aged 65 years and over and females aged 60 years and over were included with Age Pensions**

[4] **Includes females receiving a Parenting Payment Single. Details for males were excluded from the analysis**

[5] **DVA War Widows' pensioners are excluded, as this pension is primarily a compensation payment and not an income support payment**

[6] **Youth Training Allowance and Job Search Allowance are the unemployment benefit schemes: also includes people in Community Development Employment Projects at 30 June 2003**

[7] **Includes children (aged under 16 years) in families as described in the text**

Source: Compiled from data from Centrelink and DVA

Dependent children in low income families receiving welfare payments from Centrelink are also mapped as a proportion of all children under 17 years of age. The majority (92.3%) of children in welfare-dependent families are under 16 years of age, with the remaining 7.7% dependent students aged from 16 to 24 years: thus the proportion was calculated on the population under 17 years.

Families included are those in receipt of the maximum rate Family Tax Benefit (A) (whether receiving income support payments or not) plus customers not on maximum rate Family Tax Benefit (B), but with incomes under $32,485. Payments such as the double orphans' pension and the Family Payment (minimum rate) and Family Tax Payment (B) where income is $32,485 or higher have been excluded from this analysis.

Children in families under the CDEP are not included, as details of the number of children were not available. Details of the small number of children of DVA pensioners were also not available.

The 1.65 million children in these low income families are comprised of children of those who receive the Family Tax Benefit (A):

- at the maximum rate, and are on income support (53.6% of children in these low income families);
- at the maximum rate, and are not on income support (15.3%); and
- those who do not get the maximum rate, but have an income under $32,485 (31.1%).

These figures exclude over 690,000 children of those receiving the Parenting Payment, where the income is $32,485 per annum, or higher.

Under the arrangements existing in June 1999, three quarters (74.6%) of children were in families who were 'automatic' recipients of the Family Payment, that is, those on income support: the marked drop in this proportion to 53.6% in 2004 shows the extent to which the nature of this program has changed.

Community Development Employment Project (CDEP)

The CDEP was initiated in 1977 by Aboriginal communities to help remote, isolated Aboriginal communities develop an alternative to continued reliance on unemployment benefits. In 1985, the scheme was expanded to include Aboriginal and Torres Strait Islander people living in urban and rural areas.

Under the scheme, members of participating communities, organisations or groups forgo individual unemployment benefits for a wages grant paid to the community. Each community decides on its own work program. The program may include projects such as road works, house repairs and maintenance, and the production of artefacts and activities in support of traditional lifestyle and culture.

Although the CDEP data were only available for 2003, they have been included with the other data for unemployment beneficiaries, which have a reference date of June 2004.

Data issues

The data are collected by the postcode of the postal address of the recipient of the income support payment. In the majority of cases, this is also the postcode of their usual residence. The postcode data were converted to Statistical Local Areas (SLAs) using a converter produced by the Australian Bureau of Statistics (ABS). This process is described in Chapter 2. In some instances, the number of people in receipt of a pension or benefit in a postcode area exceeds the population of the applicable age in that postcode: this is particularly a problem with the Age Pension data. As a result, the calculation of the proportion of the population in receipt of a particular pension or benefit type can produce percentages of greater than 100 per cent. Other percentages of less than 100 per cent may also be overstated.

The reason for this is not clear. It is unlikely to be the result of people claiming both a Centrelink Age Pension and a DVA Service Pension (Age), as checks are made each year to ensure that such events do not occur. It is likely, in part, to be a result of faults in the process of allocating data from postcodes to SLAs.

It would have been possible to scale all the percentages back to 100, or less than 100, but this would have concealed the problem and would not have represented the data for the areas as estimated. Percentages in excess of 100 per cent are noted separately in the text. Previous experience shows that postcode data for the other pension or benefit types have a similar, although less marked, problem; however, again it is not possible to say to what extent they may also be overstated.

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Age pensioners, June 2004

People eligible for an Age Pension from Centrelink comprise females aged 60 years and over and males aged 65 years and over; the Department of Veterans' Affairs (DVA) provides a service pension to eligible males at age 60 years and females at age 55 years. The data mapped are the sum of these pension types, referred to generally as age pensioners, expressed as a percentage of all females aged 60 years and over and all males aged 65 years and over at 30 June 2004.

In 1992, 83.9% of South Australians in the eligible age groups were receiving an Age Pension; by 2004 the proportion had fallen to 70.1%, a decline of 16.4% (Table 5.2). There was a similar decline in Metropolitan Adelaide (17.5%) and in country South Australia (16.4%). These declining proportions have occurred at the same time as the number of people receiving an Age Pension has increased, from 134,047 in 1992 to 184,617 in 2004, and are a result of a faster rate of increase in the population.

Table 5.2: Age pensioners

Per cent

Section of State	1992	1996	2004	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	85.3	76.2	70.3	-17.5
Country	83.0	75.1	69.4	-16.4
South Australia	83.9	75.9	70.1	-16.4

[1]**Per cent change over 12 years in the proportion of people receiving an age or service pension**

Metropolitan regions

Over two thirds of people in the appropriate age group in the metropolitan regions (excluding Gawler) were receiving an Age Pension in 2004 (70.3%, 133,264 people). There were relatively high proportions in the north-west, outer northern and some outer southern SLAs (Map 5.1).

Strong correlations were found for age pensioners with variables such as unskilled and semi-skilled workers, low income families, jobless families, smoking during pregnancy, being Indigenous and other variables in this chapter. There were also strong correlations with GP services, outpatient attendances, public hospital admissions, domiciliary care clients, being on a hospital booking list and incidence of lung cancer. These results, together with a strong inverse correlation with the Index of Relative Socioeconomic Disadvantage (IRSD), indicate a strong association at the SLA level between receiving an Age Pension and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

In Central Northern region, there were 94,181 people receiving an Age Pension, 71.3% of people in this age group. This was over half (51.0%) of all people on an Age Pension in South Australia (Table 5.3). Salisbury - Inner North, with 2,165 people on an Age Pension, had a proportion in excess of 100% - see note on page 164 for an explanation for the estimate of 116.1%. There were also high proportions in Playford - West Central (91.8%, 1,309), Tea Tree Gully - Central (88.4%, 2,821), Salisbury - South-East (83.9%, 4,212), Playford - East Central (83.8%, 1,449), Charles Sturt - North-East (82.3%, 3,867), West Torrens - East (81.5%, 3,653), Port Adelaide Enfield - Port (80.6%, 4,044), Playford - Elizabeth (80.4%, 4,118) and Port Adelaide Enfield - Coast (79.8%, 3,975).

Large numbers of people on an Age Pension were located in West Torrens - West (4,653 people, 65.0%), Charles Sturt - Coastal (4,504, 66.6%), Tea Tree Gully - South (4,318, 77.9%), Charles Sturt - Inner West (4,264, 75.7%) and Port Adelaide Enfield - East (4,162, 74.4%).

The SLAs with low proportions of people on an Age Pension were typically those of high relative socioeconomic status. These included Walkerville (43.3%, 722), Burnside - North-East (45.4%, 2,163) and - South-West (46.0%, 2,121), Adelaide (47.9%, 1,038), Adelaide Hills - Central (52.7%, 866), Salisbury Balance (57.1%, 346) and Unley - East (57.8%, 2,088).

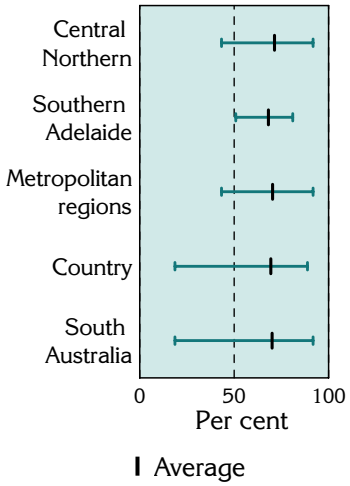
Southern Adelaide

Southern region had 39,083 people receiving an Age Pension, 68.1% of people meeting the age requirement (Table 5.3). Onkaparinga - Woodcroft (81.0%, 3,036) and - Hackham (79.4%, 1,154) were the only SLAs in this region with rates in the highest range.

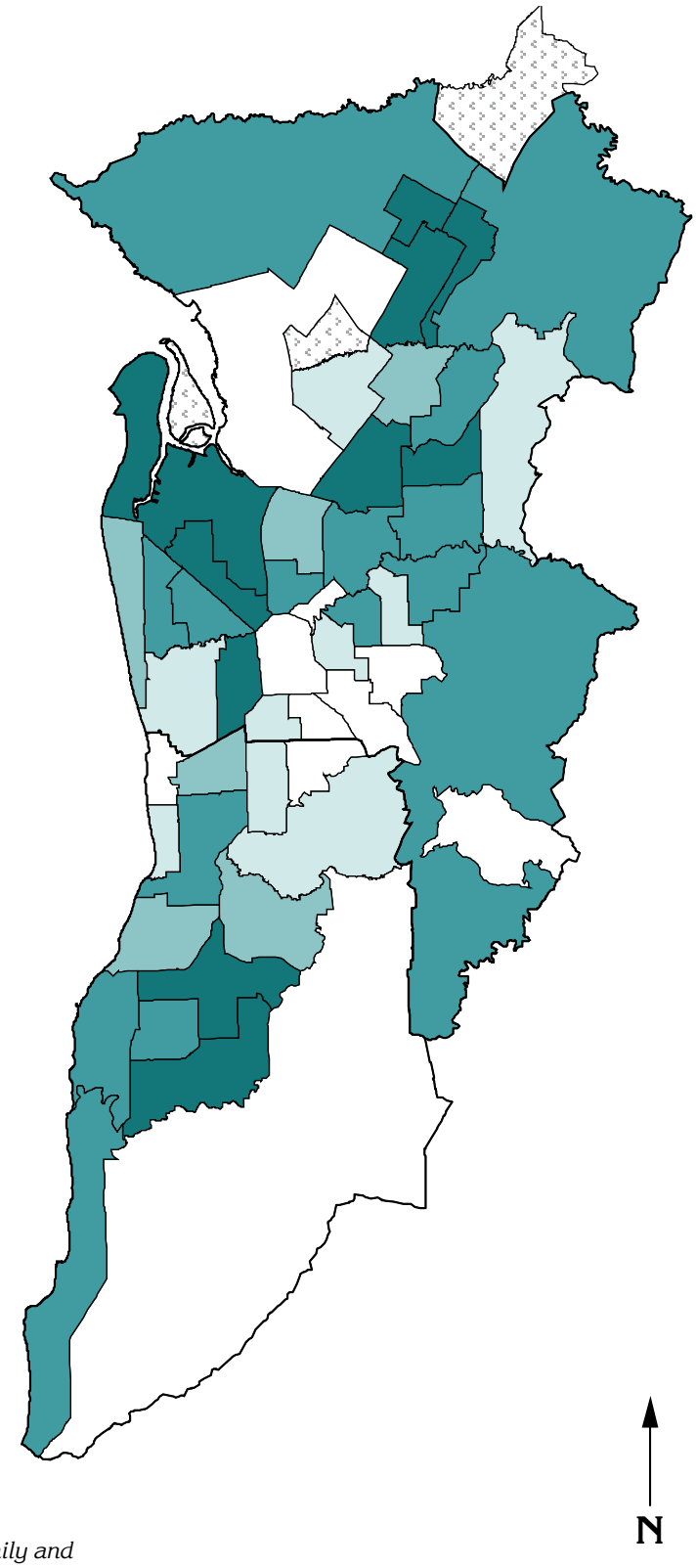
The SLAs with large numbers of age pensioners in this region were Marion - Central (5,904, 73.2%) and - North (4,563, 71.2%).

SLAs with low proportions of people in receipt of Age Pensions were the relatively affluent Mitcham - North-East (50.8%, 1,680), Holdfast Bay - North (55.2%, 2,787) and Onkaparinga - Hills (57.7%, 1,044).

Map 5.1
Age pensioners, metropolitan regions, June 2004



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent age pensioners*, by SLA

- *78.0% or more*
- *72.0 to 77.9%*
- *66.0 to 71.9%*
- *60.0 to 65.9%*
- *fewer than 60.0%*
- *data not mapped#*

*Includes the Age Pension paid by the Department of Family and Community Services and the Service Pension (Age) paid by the Department of Veterans' Affairs

#Data were not mapped for Torrens Island (mapped with Port Adelaide) or for SLAs with fewer than five cases: Gawler has been mapped in the State map

Source: Calculated on data from Centrelink

Details of map boundaries are in Appendix 1.2

Country South Australia

In country South Australia, just over two-thirds (69.4%) of those in the appropriate age group were receiving an Age Pension.

Table 5.3: Regional totals, age pensioners, June 2004

Region	No.	% in Region	% of State
Hills Mallee Southern	14,879	69.1	8.1
Wakefield[1]	13,074	68.9	7.1
South East	6,330	65.3	3.4
Northern & Far Western	4,867	75.5	2.6
Eyre	3,654	66.6	2.0
Mid North	4,554	73.3	2.5
Riverland	3,994	71.7	2.2
Country SA	**48,825**	**69.4**	**26.4**
Central Northern	94,181	71.3	51.0
Southern	39,083	68.1	21.2
Metropolitan regions	**133,264**	**70.3**	**72.1**
South Australia	**184,744**	**70.1**	**100.0**

[1]Gawler is included in Wakefield region

High proportions of the population receiving an Age Pension were strongly correlated with avoidable mortality, being Indigenous, dwellings with no motor vehicle, hospital admissions, cancer incidence and female sole parent pensioners. These results, together with a strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between receiving an Age Pension and socioeconomic disadvantage (Table 8.2).

The Regions

Northern and Far Western had the highest proportion of age pensioners, with three-quarters of the population (75.5%) eligible by age in receipt of the pension (4,867 people). Within this region, the SLAs with high proportions of age pensioners were Unincorporated Whyalla (88.8%, 53 people), Whyalla (80.5%, 2,711) and Port Augusta (75.0%, 1,455). Low proportions of age pensioners were mapped in Unincorporated Far North (48.3%, 153) and Unincorporated Flinders Ranges (53.0%, 35).

In the **Mid North**, 73.3% of those in the appropriate age group were receiving an Age Pension (4,554 people). Within this region, the Port Pirie SLAs of - City (79.0%, 2,117) and Balance (75.7%, 477) had relatively high proportions of age pensioners. SLAs with low proportions of age pensioners included Unincorporated Pirie (18.6%, five pensioners) and Orroroo/Carrieton (52.1%, 118).

Riverland had 71.7% of people in the appropriate age group receiving an Age Pension (3,994 people). Unincorporated Riverland had over twice as many age pensioners (21) as the population in the eligible age groups, an error likely to be related to the pension data being based on postcode area and its conversion to SLA (see page 164). Berri and Barmera - Barmera had a proportion of 78.7% (666 people).

There were 14,879 age pensioners in **Hills Mallee Southern** (69.1%). In this region, high proportions were mapped in Yankalilla (76.2%, 660 people) and Murray Bridge (75.1%, 2,363). A number of SLAs had large numbers of people receiving an Age Pension, including Victor Harbor (2,867 people, 68.2%), Alexandrina - Coastal (2,045, 74.0%), Mount Barker - Central (1,411, 64.6%), Mid Murray (1,172, 70.1%) and Alexandrina - Strathalbyn (1,045, 70.0%). Just over half the age-eligible population of Kangaroo Island were receiving an Age Pension (54.3%, 370).

Wakefield had just over two-thirds (68.9%) of the age-eligible population receiving Age Pensions (13,074 people). Yorke Peninsula - North had a high proportion of age pensioners (77.1%, 1,513 people). Large numbers of this group resided in Gawler (2,528 people, 72.1%), Copper Coast (2,095, 71.6%), Yorke Peninsula - North (1,513, 77.1%) and Light (1,103, 70.0%). Yorke Peninsula - South had a low 59.2% (663 people).

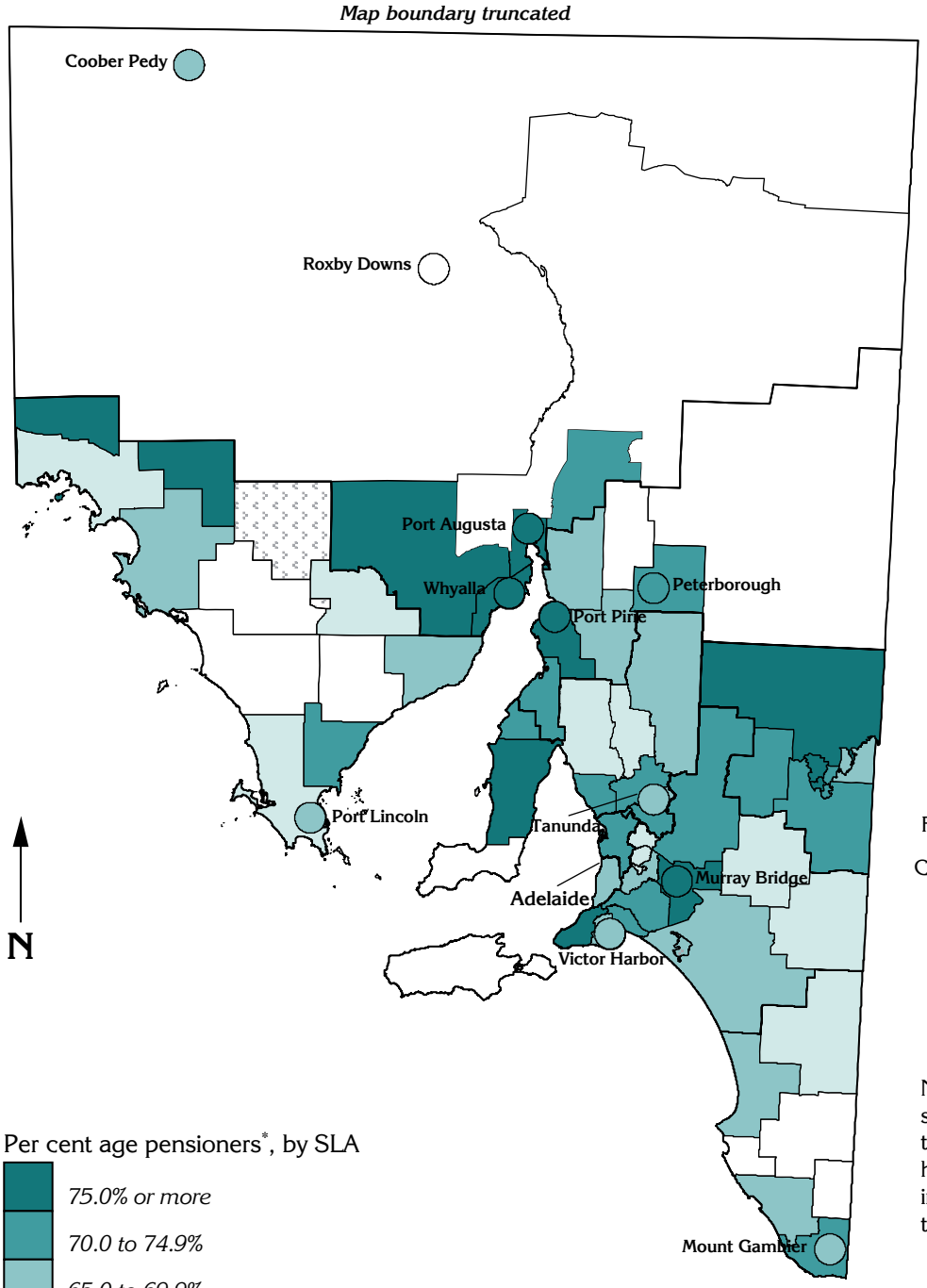
Two-thirds (66.6%) of those eligible by age in **Eyre** were in receipt of an Age Pension (3,654 people). Tumby Bay had 476 age pensioners (74.2%) and Port Lincoln had 1,525 (68.9%). Unincorporated West Coast had 50 pensioners, over three times the population of pensionable age. Low proportions were mapped in Elliston (58.6%, 89 people), Le Hunte (58.7%, 131) and Cleve (58.7%, 203).

The **South East** had the lowest proportion of people (65.3%) receiving an Age Pension (6,330 people). The SLA with the highest proportion in this region was Grant (72.7%, 740 people). Large numbers of age pensioners were located in Mount Gambier (2,454 people, 68.3%) and Wattle Range - West (1,025, 67.9%). The SLAs of Robe (52.6%, 155), Wattle Range - East (52.7%, 264) and Naracoorte and Lucindale (57.2%, 743) all had relatively low proportions of age pensioners.

ASGC Remoteness Classification

There was a fairly consistent gradient across the remoteness areas, with the largest number of age pensioners recorded in the Major Cities (133,544 people, 70.4%) and the lowest in the Very Remote areas (894 people, 62.4%). The category of Outer Regional did not follow the gradient, having a higher proportion (71.2%, 22,724) than Major Cities.

Map 5.2
Age pensioners, South Australia, June 2004



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show range of the indicator at the SLA level within the region.

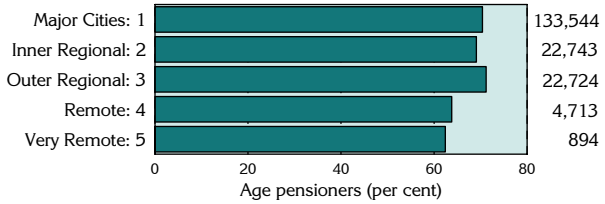
Per cent age pensioners*, by SLA

- *75.0% or more*
- *70.0 to 74.9%*
- *65.0 to 69.9%*
- *60.0 to 64.9%*
- *fewer than 60.0%*
- *data not mapped#*

*Includes the Age Pension paid by the Department of Family and Community Services and the Service Pension (Age) paid by the Department of Veterans' Affairs

#Data were not mapped because the SLA has a population of less than 100

ASGC Remoteness classification Persons



Source: Calculated on data from Centrelink ***Details of map boundaries are in Appendix 1.2***

Disability support pensioners, June 2004

People eligible for a Disability Support Pension (DSP), paid by Centrelink, must be aged 16 years or over and have not reached age-pensionable age; be permanently blind; or have a physical, intellectual or psychiatric impairment level of 20% or more, and a continuing inability to work. Details of males under 65 years of age and females under 60 years receiving the DVA service pension (permanently incapacitated) have been combined with the DSP data: details on people above these ages are included in the data for Age Pensioners.

The proportion of the population receiving the Disability Support Pension increased by 45.7%, from 4.6% in 1992 to 6.7% in 2004. The increase in country areas was greater (48.9%) than the increase in Metropolitan Adelaide (39.6%). In 1992, there was a slightly higher proportion in Metropolitan Adelaide (4.8%) compared to the country areas (4.5%), but by 2004, the proportion in both sections of the State was 6.7%.

Table 5.4: Disability support pensioners

Per cent

Section of State	1992	1996	2004	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	4.8	6.2	6.7	39.6
Country	4.5	6.3	6.7	48.9
South Australia	4.6	6.2	6.7	45.7

[1]**Per cent change over 12 years in the proportion of people receiving a disability support pension**

Metropolitan regions

There were 48,273 people in receipt of the DSP in the metropolitan regions (excluding Gawler) in 2004 (6.7% of the population of pensionable age) (Table 5.5). The highest proportions were mapped in the outer northern and southern SLAs with low proportions in the east (Map 5.3), following the pattern of socioeconomic disadvantage seen in Chapter 4.

High rates of the population in receipt of these pensions were very strongly correlated with a number of variables associated with work issues, such as low income families, jobless families, unemployment beneficiaries and unskilled and semi-skilled workers. They were also very strongly correlated with dwellings rented from the Housing Trust, Indigenous status, smoking during pregnancy, high rates of premature death and other variables in this chapter. Very strong correlations were also found with the use of a range of health services, such as public hospital admissions, outpatient attendances, community mental health services (and Child and Adolescent Mental Health services), Domiciliary Care clients, emergency department attendances and booking lists. These results, together with a very strong correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between socioeconomic disadvantage and disability support pensioners (Table 8.1).

Central Northern Adelaide

Central Northern had a higher proportion of people receiving a DSP (7.0%, 35,328 people) compared to Southern (6.1%, 12,945 people). Playford - Elizabeth had more than double the regional average, with 15.4% (2,271 people), as did Port Adelaide Enfield - Port (13.3%, 2,175) and - Inner (11.7%, 1,395). There were also high proportions in Playford - West Central (10.9%, 865), Charles Sturt - North-East (10.6%, 1,757), Salisbury - Central (9.1%, 1,655), Port Adelaide Enfield - East (8.9%, 1,735), Charles Sturt - Inner East (8.9%, 1,186) and - Inner West (8.8%, 1,339), Port Adelaide Enfield - Coast (8.7%, 1,591) and Salisbury - Inner North (8.6%, 1,466).

Tea Tree Gully - South (1,136 people, 5.2%), Salisbury - North-East (964, 6.6%) and Playford - East Central (915, 6.9%) had relatively large numbers of people receiving the DSP.

Adelaide Hills - Central (2.0%, 178 people) and - Ranges (2.2%, 156), Burnside - South-West (2.8%, 378) and - North-East (3.1%, 415), Tea Tree Gully - Hills (3.2%, 272) and Salisbury Balance (3.8%, 205) had low proportions.

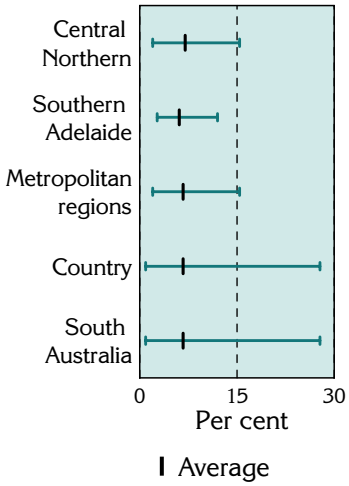
Southern Adelaide

There were 12,945 people receiving the DSP in Southern in 2004 (6.1% of the population of pensionable age). High proportions of people in receipt of the DSP were mapped in a number of the Onkaparinga SLAs, including - North Coast (12.0%, 1,354 people) and - Hackham (10.0%, 937). There was also a high proportion in Marion - North (8.8%, 1,339).

Onkaparinga - Woodcroft had a relatively large number of people (1,136) receiving the DSP (4.7%).

The SLAs with low proportions of people in receipt of the DSP in this region included Mitcham - Hills (2.7%, 433 people), Onkaparinga - Reservoir (2.9%, 506), Marion - South (3.2%, 477), Mitcham - North-East (3.4%, 332) and Onkaparinga - Hills (3.6%, 263).

Map 5.3
Disability support pensioners, metropolitan regions, June 2004

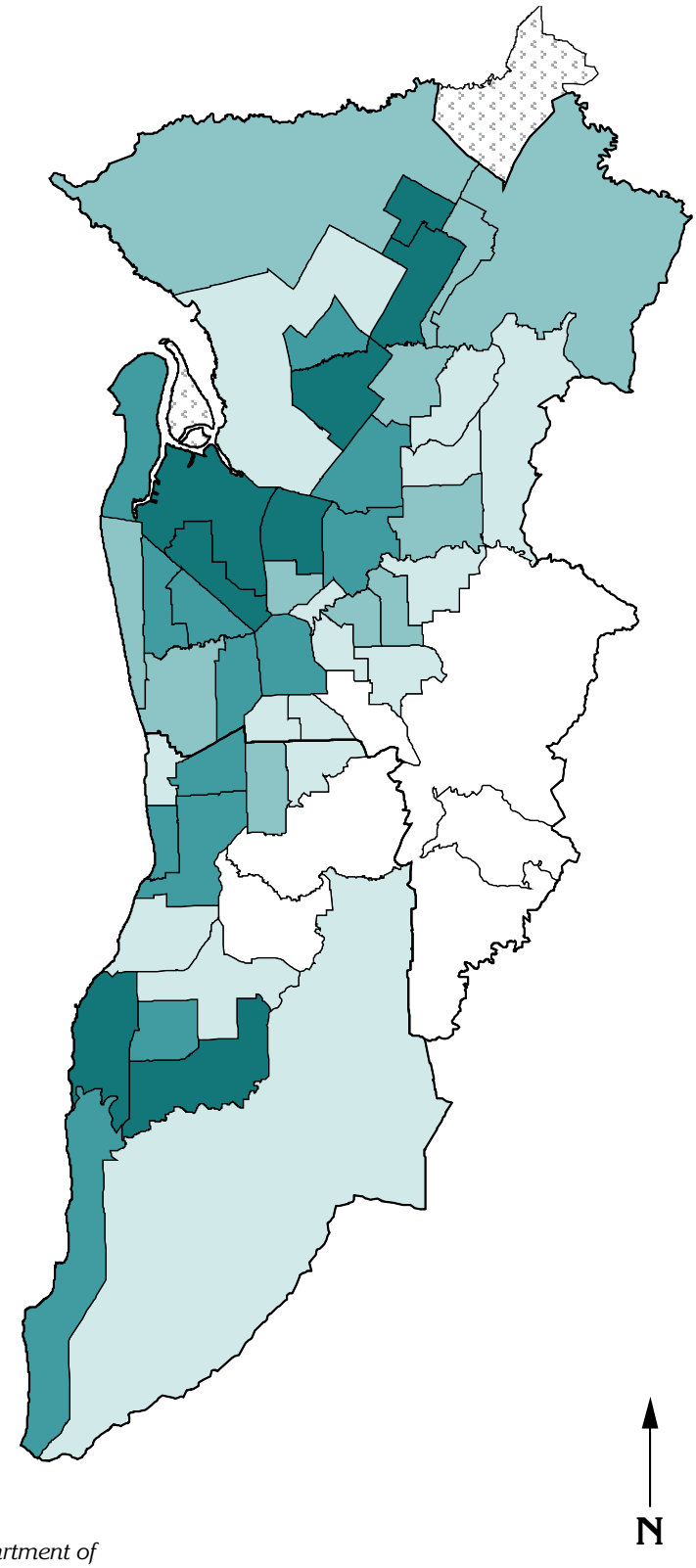


Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

SLA
Health Region

Per cent disability support pensioners*, by SLA

- *9.0% or more*
- *7.0 to 8.9%*
- *5.0 to 6.9%*
- *3.0 to 4.9%*
- *fewer than 3.0%*
- *data not mapped#*



*Includes the Disability Support Pension paid by the Department of Family and Community Services and the Service Pension (Permanently Incapacitated) paid by the Department of Veterans' Affairs

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: Calculated on data from Centrelink ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In country South Australia, 17,757 people were receiving a Disability Support Pension (DSP) in June 2004 (Table 5.5). SLAs with the highest proportions were located in the less remote parts of the State, and in some of the towns mapped (Map 5.4). Readers should be aware that proportions may be inflated due to data issues (see page 164).

Table 5.5: Regional totals, disability support pensioners, June 2004

Region	No.	% in Region	% of State
Hills Mallee Southern	4,780	6.7	7.2
Wakefield[1]	4,145	6.7	6.3
South East	1,936	4.9	2.9
Northern & Far Western	2,582	8.1	3.9
Eyre	1,070	5.0	1.6
Mid North	1,844	10.2	2.8
Riverland	1,399	6.8	2.1
Country SA	**17,757**	**6.7**	**26.8**
Central Northern	35,328	7.0	53.4
Southern	12,945	6.1	19.6
Metropolitan regions	**48,273**	**6.7**	**73.0**
South Australia	**66,172**	**6.7**	**100.0**

[1]Gawler is included in Wakefield region

There was a very strong correlation at the SLA level between rates of Disability Support Pension recipients and high rates of jobless families. There were also strong correlations with low income families, terminations of pregnancy, Child and Adolescent Mental Health services and other variables in this chapter. These results, together with a strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between socioeconomic disadvantage and being a DSP recipient (Table 8.2).

The Regions

The highest proportion of people receiving the DSP was recorded for the **Mid North** (10.2%, 1,844 people). There was a particularly high take-up of nearly three times the country average in Peterborough, with a proportion of 17.9% (197 people). Other SLAs with high proportions included Port Pirie - City (12.0%, 997) and Barunga West (11.0%, 163). There was also a large number of people receiving the DSP in Port Pirie - City (997, 12.0%).

Northern and Far Western had a rate of 8.1% (2,582 people). Unincorporated Whyalla had an extremely high proportion with over one quarter of the population estimated to receive the DSP (27.8%, 36). There were also high proportions in Coober Pedy (14.7%, 223) and Whyalla (10.3%, 1,383). Port Augusta had 768 people receiving the DSP (8.7%). Very low rates were recorded for Unincorporated Flinders Ranges (0.9%, eight people) and Unincorporated Far North (2.8%, 102).

In the **Riverland**, 6.8% of the population received the DSP (1,399). The Unincorporated Riverland had a high proportion of 9.3% (although a very small number of nine people). Renmark Paringa - Renmark had 354 DSP recipients (7.3%) and Berri and Barmera - Berri had 324 (7.2%).

In **Hills Mallee Southern**, 4,780 people were receiving the DSP in 2004 (6.7%). A number of SLAs in this region had relatively high proportions, including Mid Murray (9.9%, 522), Alexandrina - Coastal (9.9%, 609), Murray Bridge (9.7%, 1,031), Victor Harbor (9.5%, 591) and Yankalilla (9.4%, 229). Mount Barker - Central (544 people, 5.0%) and Alexandrina - Strathalbyn (305, 5.3%) both had large numbers. A number of SLAs had low proportions, including Southern Mallee (2.6%, 34), Adelaide Hills - North (2.6%, 120) and Adelaide Hills Balance (2.9%, 166), Mount Barker Balance (3.8%, 212) and Karoonda East Murray (3.9%, 29).

Wakefield had the same proportion of DSP recipients as **Hills Mallee Southern**, of 6.7% (4,145 people). High proportions of the population in Copper Coast (11.5%, 735 people), Yorke Peninsula - North (11.1%, 468) and Goyder (10.2%, 257) were receiving a DSP. There were relatively large numbers of DSP recipients in Gawler (786 people, 6.7%), Mallala (377, 7.3%), Light (305, 4.0%) and Wakefield (300, 7.6%). The SLAs of Barossa - Tanunda (3.2%, 92) and Clare and Gilbert Valleys (3.8%, 190) both had low proportions of this pensioner group.

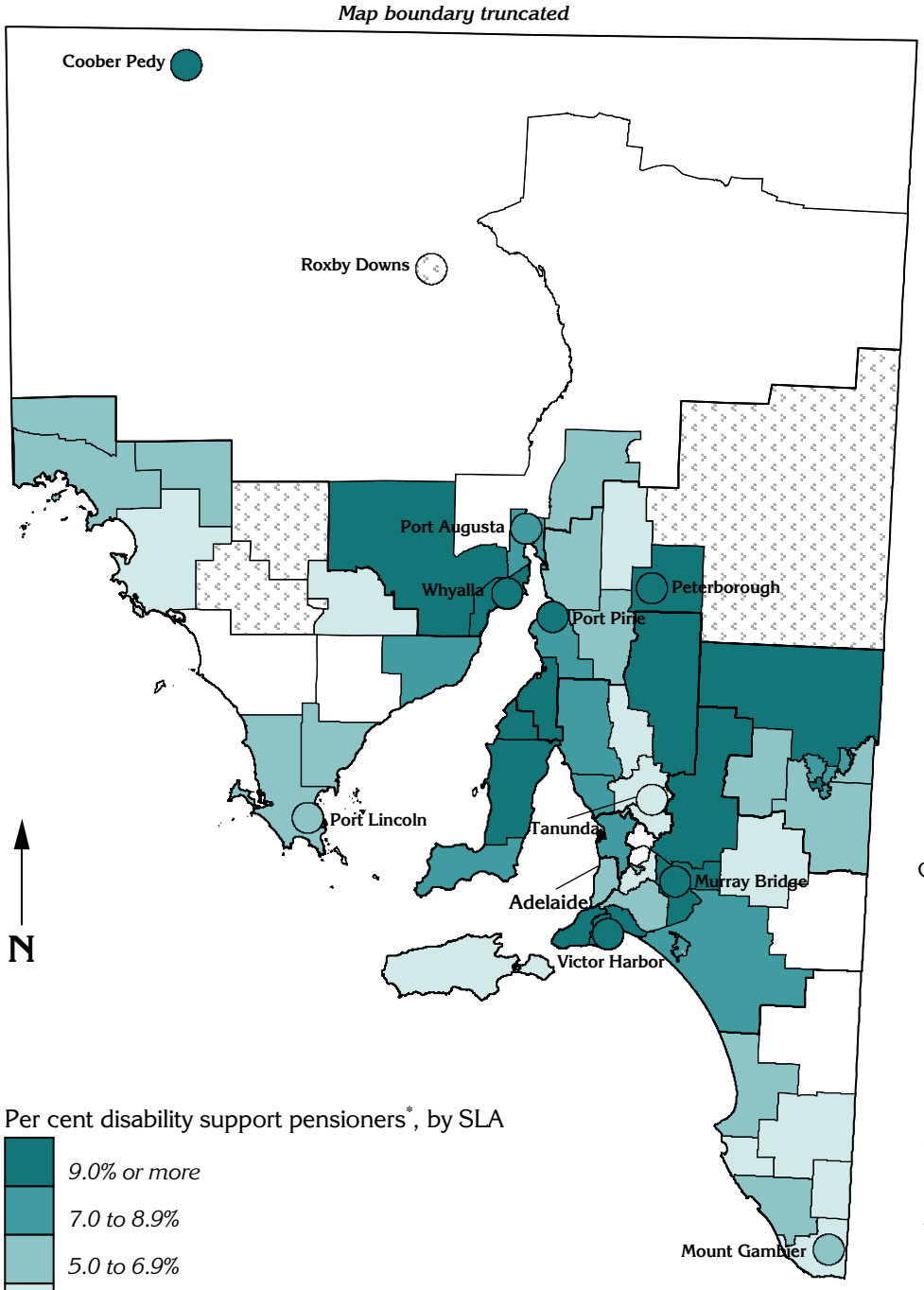
Eyre had a low proportion of 5.0% in this pensioner group (1,070 people). Port Lincoln had 537 DSP recipients (6.0%). Low proportions were mapped for the SLAs of Elliston (1.0%, seven people), Cleve (2.3%, 27) and Kimba (3.5%, 23).

South East also had a low proportion, with 4.9% (1,936 people) of the population receiving the DSP. Large numbers were recorded for Mount Gambier (880 people, 5.9%) and Wattle Range - West (323, 5.8%). SLAs with low proportions included Tatiara (2.6%, 113), Naracoorte and Lucindale (3.2%, 166) and Robe (3.6%, 28).

ASGC Remoteness Classification

There was no consistent gradient across the remoteness classes, although the Major Cities areas (6.8%, 48,225 people) had a higher proportion than the Very Remote areas (5.3%, 842). The highest proportion, of 7.9%, was calculated for the Outer Regional areas (8,535 people).

Map 5.4
Disability support pensioners, South Australia, June 2004



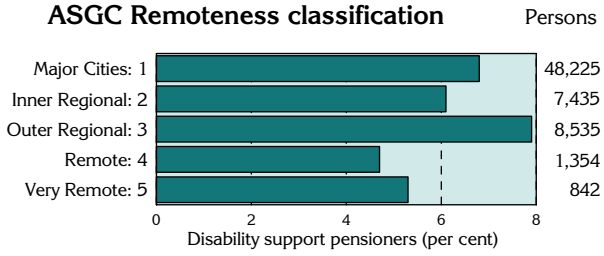
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent disability support pensioners*, by SLA

- *9.0% or more*
- *7.0 to 8.9%*
- *5.0 to 6.9%*
- *3.0 to 4.9%*
- *fewer than 3.0%*
- *data not mapped#*

*Includes the Disability Support Pension paid by the Department of Family and Community Services and the Service Pension (Permanently Incapacitated) paid by the Department of Veterans' Affairs

#Data were not mapped because the SLA has a population of less than 100 or there were fewer than five pensioners



Source: Calculated on data from Centrelink

Details of map boundaries are in Appendix 1.2

Female sole parent pensioners, June 2004

People eligible for a Parenting Payment Single paid by Centrelink comprise female and male sole parents with at least one child under 16 years of age (who meet certain qualifications, or the child attracts a child disability allowance). Only female sole parent pensioners have been mapped because females comprise the majority of all sole parent pensioners (90.6% at 30 June 2004).

In 2004, 7.6% of the South Australian female population aged from 15 to 54 years were in receipt of the Parenting Payment Single (Table 5.6). Comparisons with the 1992 and 1996 figures show that there has been an increase in the proportion of female sole parent pensioners, rising from 6.1% in 1992 and 6.6% in 1996 (an increase of 24.6%).

Table 5.6: Female sole parent pensioners

Per cent

Section of State	1992	1996	2004	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	6.1	6.6	7.6	24.6
Country	6.2	6.7	7.5	21.0
South Australia	6.1	6.6	7.6	24.6

[1]**Per cent change over 12 years in the proportion of females receiving a sole parent pension**

Metropolitan regions

In 2004, there were 23,806 females in the metropolitan regions (excluding Gawler) in receipt of the Parenting Payment Single, representing 7.6% of the female population aged from 15 to 54 years.

The correlation analysis showed very strong associations at the SLA level with the variables for unskilled and semi-skilled workers, jobless families, single parent families, unemployment, the Indigenous population, low income families and public rental housing. Very strong inverse correlations were recorded with female labour force participation, high income families, full-time educational participation, managers and administrators, and professionals, and school subject achievement scores. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between female sole parent pensioners and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

High proportions of female sole parent pensioners were generally recorded in the outer northern and north-western areas of the region (Map 5.5). Playford - Elizabeth and Playford - West Central had the highest proportions, of 22.1% (1,422 females) and 18.6% (654), respectively. Other SLAs in this region to record rates well above the average were Salisbury - Central (13.6%, 1,090 females), Salisbury - Inner North (13.3%, 1,019) and Port Adelaide Enfield - Port (12.8%, 906).

The SLA of Adelaide had the lowest proportion of female sole parent pensioners, with only two per cent of its female population aged from 15 to 54 years in this category (89 females).

Proportions of below three per cent were also recorded in Burnside - South-West (2.5%, 146 females), Walkerville (2.6%, 48), Unley - West (2.9%, 155) and Norwood Payneham St Peters - West (2.9%, 162).

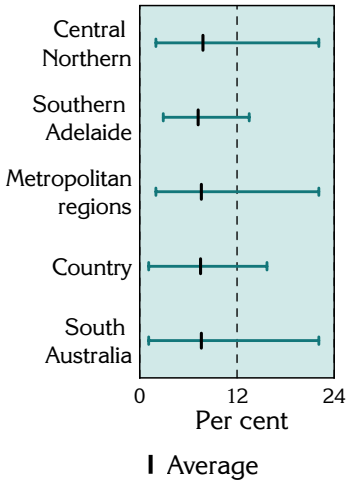
Playford - Elizabeth SLA had the largest number, with 1,422 female sole parent pensioners, followed by Salisbury - Central (1,090), Salisbury - Inner North (1,019), Salisbury - South East (979) and Port Adelaide Enfield - Port (906).

Southern Adelaide

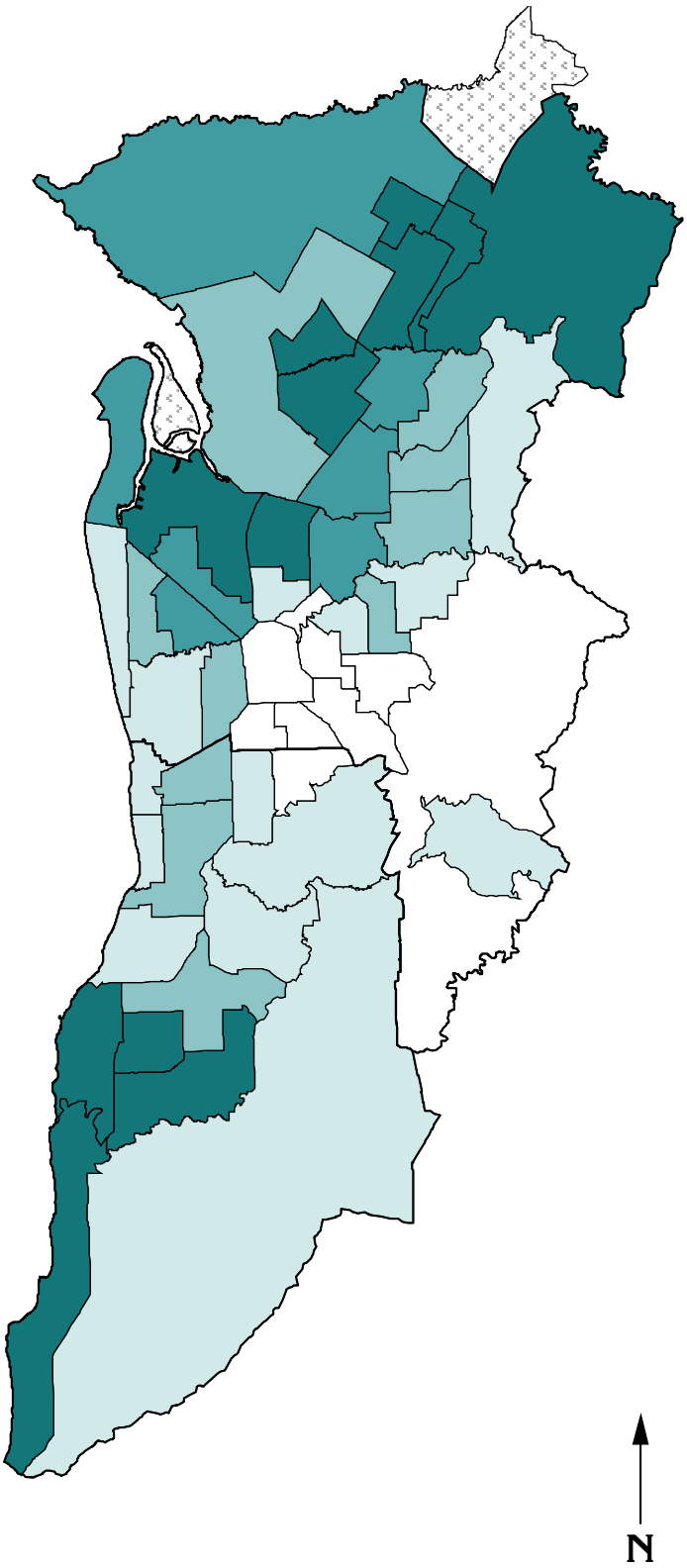
More than ten per cent of the female population aged 15 to 54 years were in receipt of the Parenting Payment Single in the Southern regional SLAs of Onkaparinga - Hackham (13.5%, 558 females), - North Coast (13.2%, 617), - South Coast (11.5%, 803) and - Morphett (10.9%, 758).

The lowest proportions in the Southern region were recorded in Mitcham - North-East (2.9%, 124 females), Holdfast Bay - North (4.0%, 206), Mitcham - Hills (4.1%, 277) and Mitcham - West (4.7%, 292).

Map 5.5
Female sole parent pensioners, metropolitan regions, June 2004



Note: The vertical lines show the average proportion for this indicator in each region; the horizontal lines show the highest and lowest proportions at the SLA level within the region.



SLA
Health Region

Per cent female sole parent pensioners, by SLA

- *10.0% or more*
- *8.0 to 9.9%*
- *6.0 to 7.9%*
- *4.0 to 5.9%*
- *fewer then 4.0%*
- *data not mapped*[#]

[#]*Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map*

Source: Calculated on data from Centrelink ***Details of map boundaries are in Appendix 1.2***

Country South Australia

The number of females (aged from 15 to 54 years) receiving the Parenting Payment Single in the country regions of South Australia was 8,244, representing 7.5% of the females in this age group.

The majority of regions had proportions near the country average, with the exception of **Northern and Far Western** (a higher 10.9%, 1,420 females) and **Wakefield** (a lower 6.3%, 1,626). Large variations in the proportions of female sole parent pensioners in **Northern and Far Western**, **Mid North** and **Eyre** are evident from the graph on the opposite page.

Table 5.7: Regional totals, female sole parent pensioners, June 2004

Region	No.	% in Region	% of State
Hills Mallee Southern	2,087	7.0	6.5
Wakefield[1]	1,626	6.3	5.1
South East	1,213	7.3	3.8
Northern & Far Western	1,420	10.9	4.4
Eyre	654	7.4	2.0
Mid North	584	7.9	1.8
Riverland	659	7.7	2.1
Country SA	**8,244**	**7.5**	**25.7**
Central Northern	17,112	7.8	53.4
Southern	6,694	7.2	20.9
Metropolitan regions	**23,806**	**7.6**	**74.3**
South Australia	**32,050**	**7.6**	**100.0**

[1]**Gawler is included in Wakefield region only**

The correlation analysis showed a strong, or very strong association between high rates of female sole parent pensioners and the variables for single parent families, dwellings with no motor vehicle, jobless families, public rental housing and people receiving rent assistance. There were strong inverse associations with managers and administrators, and professionals and publicly assessed subject achievement scores. These results, together with the inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between female sole parent pensioners and socioeconomic disadvantage (Table 8.2).

The Regions

Within the **Northern and Far Western** region, high proportions and numbers of female sole parent pensioners were recorded in the SLAs of Whyalla (14.2%, 802 females), Port Augusta (12.8%, 477) and Coober Pedy (10.4%, 58).

Peterborough (15.7%, 66 females) and Port Pirie - City (11.4%, 399) in the **Mid North** region had proportions of female sole parent pensioners well above the average, while proportions of less than five per cent were recorded in the SLAs of Northern Areas (2.4%, 26 females) and Barunga West (4.3%, 24).

There were 659 females aged 15 to 54 years in receipt of the Parenting Payment Single in the **Riverland** region (7.7%). Proportions within this region ranged from 5.9% in Loxton Waikerie - East (110 females) to 9.4% in Renmark Paringa - Renmark (197).

The lowest proportions of female sole parent pensioners in the **Eyre** region were recorded in Tumby Bay (4.7%, 28 females), Lower Eyre Peninsula (4.9%, 50) and Streaky Bay (5.6%, 27). Proportions above ten per cent were recorded in Unincorporated West Coast (13.7%, 22), Port Lincoln (10.7%, 424) and Ceduna (10.5%, 100).

In the **South East** region, 1,213 females were in receipt of the Parenting Payment Single (7.3%), of whom half were located in Mount Gambier (610, 9.3%). The other SLAs in this region had proportions below the country average, including Naracoorte and Lucindale (4.6%, 100), Wattle Range - East (4.8%, 39) and Tatiara (6.2%, 107).

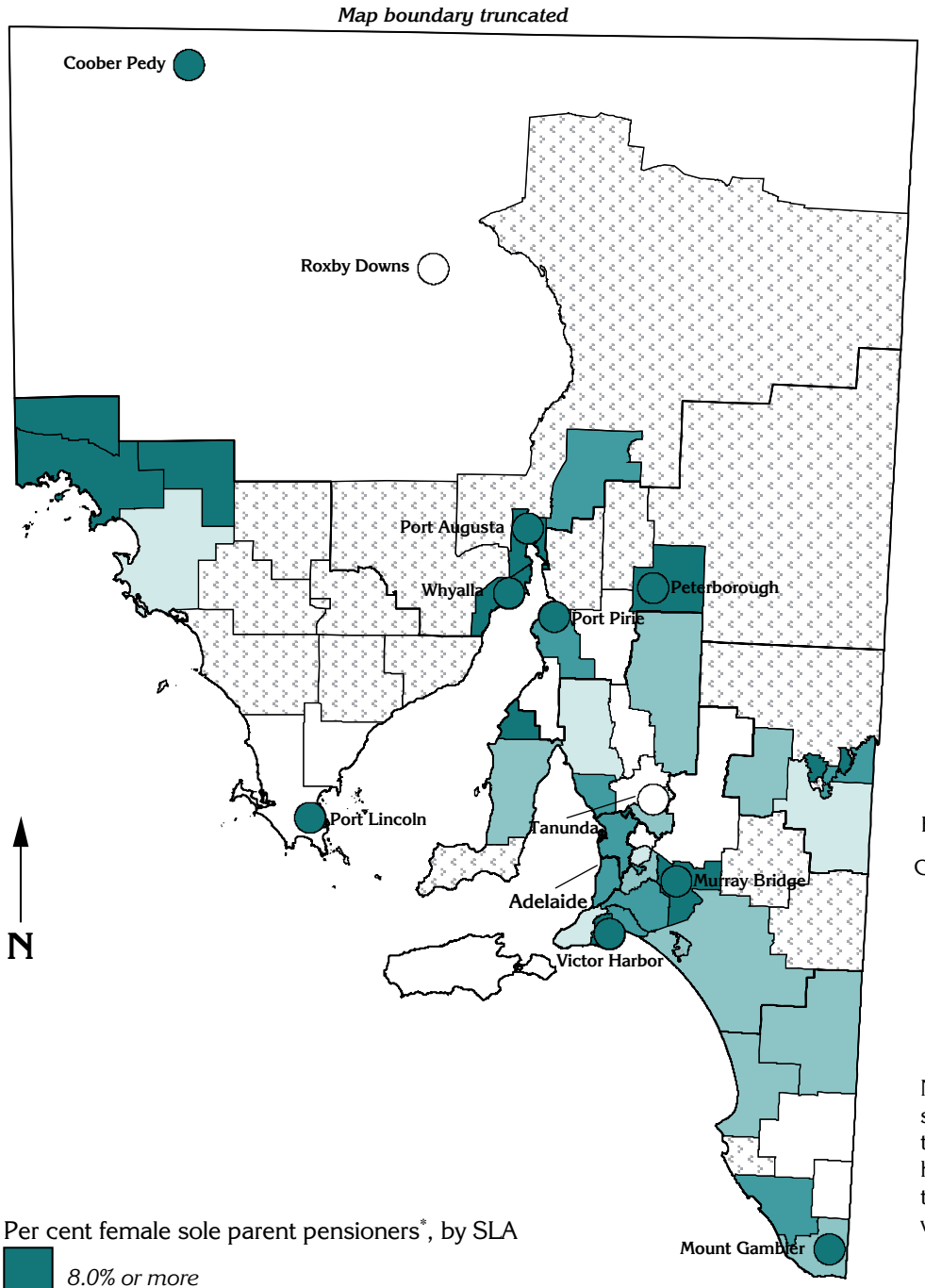
Hills Mallee Southern had the largest number of female sole parent pensioners among the regions, with 2,087 females representing 7.0% of females aged 15 to 54 years. Within this region, there were high proportions in the SLAs of Murray Bridge (11.6%, 509 females), Victor Harbor (8.8%, 217) and Mount Barker - Central (7.6%, 378). There were 3.6% female sole parent pensioners in Kangaroo Island (42 females) with low proportions also in Adelaide Hills - North (3.7%, 71), Mid Murray (4.9%, 97), Yankalilla (5.1%, 49) and Adelaide Hills Balance (5.1%, 125).

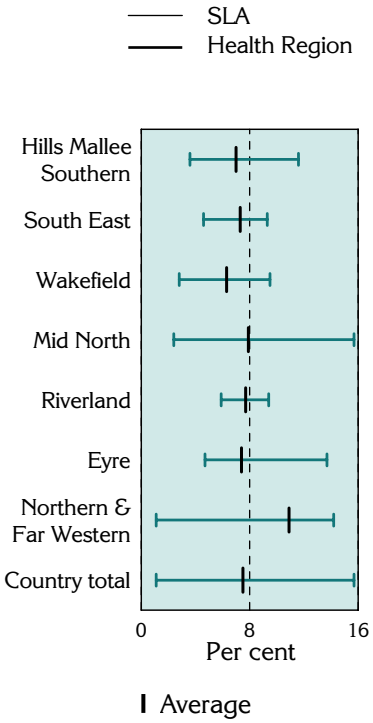
There were 1,626 female sole parent pensioners in **Wakefield**, 6.3% of females aged from 15 to 54 years. The majority of SLAs within this region had lower than average proportions: the lowest were recorded in Barossa - Tanunda (2.8%, 34 females), Clare and Gilbert Valleys (3.2%, 65), Light (4.5%, 147) and Barossa - Angaston (5.4%, 112). There were relatively large numbers of females in receipt of the Parenting Payment Single in Gawler (496, 9.5%) and Copper Coast (230, 8.8%).

ASGC Remoteness classification

Female sole parent pensioners represent a higher proportion of the population in more accessible areas, with 7.6% in the Major Cities, 7.3% in the Inner Regional and 8.3% in the Outer Regional. The lowest proportions were recorded for females in Remote (5.5%) and Very Remote (5.9%) areas.

Map 5.6
Female sole parent pensioners, South Australia, June 2004





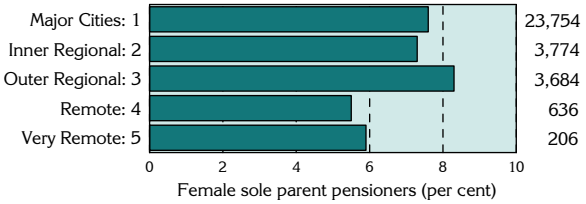
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent female sole parent pensioners*, by SLA

- *8.0% or more*
- *7.0 to 7.9%*
- *6.0 to 6.9%*
- *5.0 to 5.9%*
- *fewer than 5.0%*
- *data not mapped#*

#Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases

ASGC Remoteness classification Females



Source: Calculated on data from Centrelink ***Details of map boundaries are in Appendix 1.2***

People receiving an unemployment benefit, June 2004

People receiving an unemployment benefit are shown as a percentage of the potentially eligible population (of males aged 15 to 64 years and females aged 15 to 59 years). The data mapped are the proportion of the population receiving 'unemployment benefits': these include the Youth Training Allowance and Newstart Allowance paid by Centrelink, and people participating in Community Development Employment Projects (CDEP) schemes in 2003 (see pages 163-4 for details of the CDEP).

In 2004, 4.9% of the eligible population, as defined above, were in receipt of an unemployment benefit, with a larger proportion in country South Australia (5.4%) than in Metropolitan Adelaide (4.6%) (Table 5.8). Over the twelve-year period from 1992 to 2004, the proportion of the population receiving an unemployment benefit has decreased considerably, from 9.0% in 1992 to 4.9% in 2004 (down by 45.6%). This trend should be seen in the context of the Disability Support Pension data (which show an increase over this period), as some people who would have been placed on an unemployment benefit in the past, may now be placed on a Disability Support Pension.

Table 5.8: People receiving an unemployment benefit

Per cent

Section of State	1992	1996	2004	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	8.9	8.0	4.6	-48.3
Country	9.2	8.7	5.4	-41.3
South Australia	9.0	8.2	4.9	-45.6

[1]**Per cent change over 12 years in the proportion of people receiving an unemployment benefit**

Metropolitan regions

In 2004, 4.6% of the eligible population in the metropolitan regions (excluding Gawler) were in receipt of an unemployment benefit (as described above), representing 33,279 people. The SLAs with the highest proportions of people receiving an unemployment benefit were located in three distinct areas: in the north, in an area extending from the inner north around to the south-west, and in the outer south (Map 5.7).

The correlation analysis showed a strong, or very strong, association at the SLA level between high levels of people in receipt of an unemployment benefit and many of the indicators of socioeconomic disadvantage. Conversely, female labour force participation and participation in full-time education at age 16 years, high income families, school assessed subject scores and Internet use at home were very strongly inversely correlated with high levels of people in receipt of an unemployment benefit. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between the receipt of an unemployment benefit and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

There were 24,489 people in the Central Northern region in receipt of an unemployment benefit, 4.9% of the eligible population (Table 5.9). The largest number and proportion of unemployment beneficiaries was recorded in the SLA of Playford - Elizabeth, with 1,900 people representing 12.9% of the eligible population.

High proportions were also recorded in the SLAs of Port Adelaide Enfield - Port (9.6%, 1,575 people), Playford - West Central (9.2%, 731), Port Adelaide Enfield - Inner (8.0%, 952) and Charles Sturt - North-East (7.8%, 1,298).

The SLA of Adelaide Hills - Ranges had the lowest proportion, with 1.4% of its eligible population in receipt of unemployment benefits (100 people). Proportions of lower than two per cent were also recorded in the SLAs of Adelaide Hills - Central (1.7%, 153), Burnside - South-West (1.8%, 236) and Tea Tree Gully - Hills (1.9%, 165).

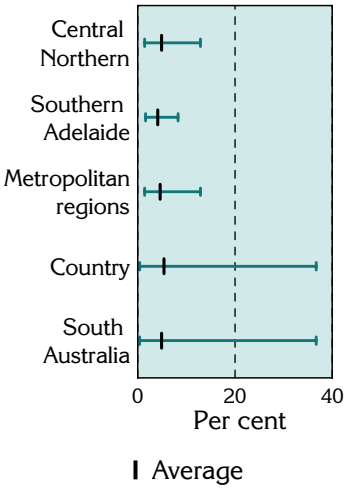
Southern Adelaide

There were fewer unemployment beneficiaries in the Southern region than in Central Northern (4.1% of the eligible population, 8,789 people).

The highest rates were recorded in the SLAs of Onkaparinga - North Coast (8.3%, 932 people), - Hackham (7.3%, 690) and - South Coast (5.5%, 863). However, the largest number of unemployment beneficiaries was recorded in Marion - Central (1,027 people, 5.0%).

The areas of Mitcham - North-East (1.6%, 154 people), Mitcham - Hills (2.2%, 346), Onkaparinga - Reservoir (2.3%, 414), Marion - South (2.4%, 354) and Onkaparinga - Hills (2.7%, 195) recorded both the lowest proportions and numbers of people in receipt of an unemployment benefit in the Southern region.

Map 5.7
People receiving an unemployment benefit, metropolitan regions, June 2004

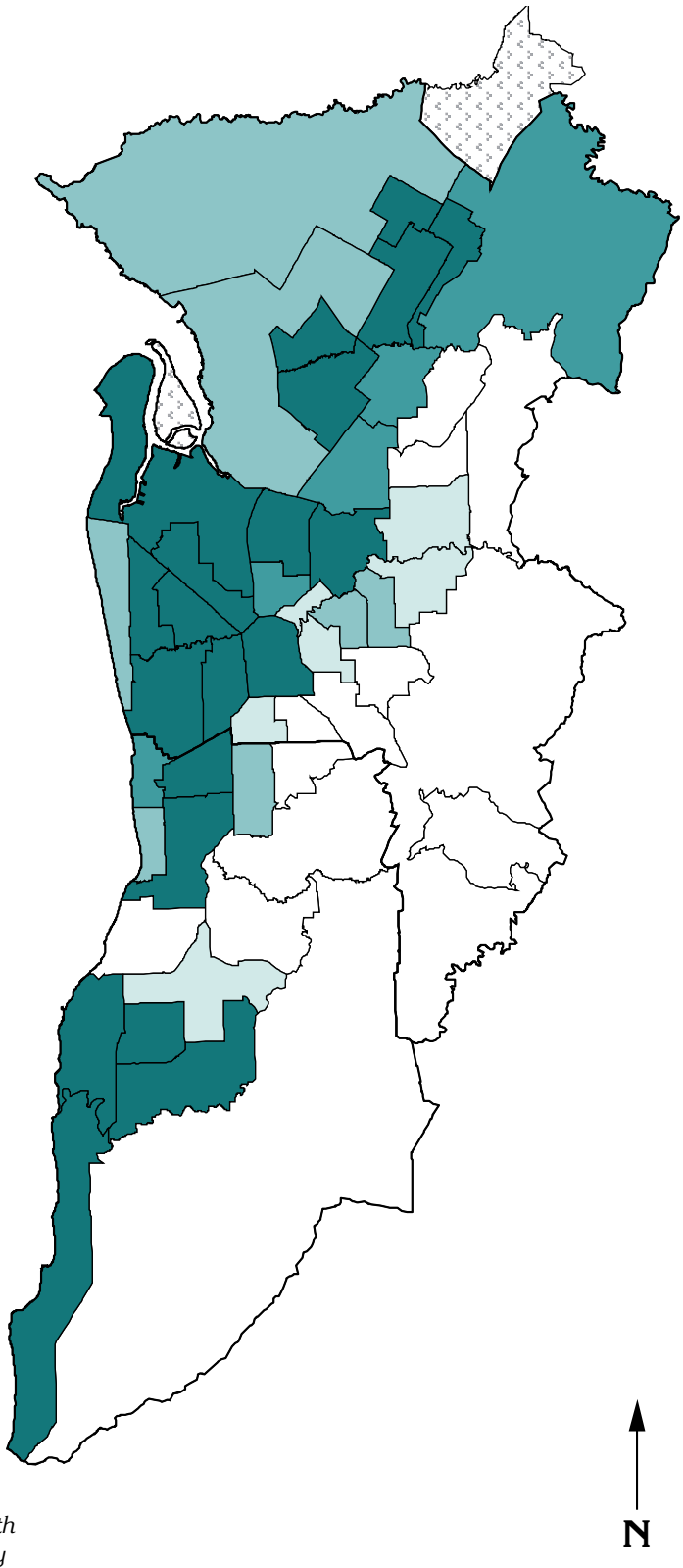


Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

SLA
Health Region

Per cent unemployment beneficiaries*, by SLA

- *4.8% or more*
- *4.2 to 4.7%*
- *3.6 to 4.1%*
- *3.0 to 3.5%*
- *fewer than 3.0%*
- *data not mapped#*



*Includes people in receipt of Newstart Allowance, the Youth Training Allowance and those covered by the Community Development Employment Program as a percentage of males aged 15 to 64 years and females aged 15 to 59 years

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: Calculated on data from Centrelink ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In country South Australia in 2004, 5.4% of the population (aged 15 to 64 for males and 15 to 59 years for females) were receiving an unemployment benefit (14,309 people). These figures include 2,450 country residents who were in CDEP schemes in 2003; the rate without CDEP is 4.5%.

The largest number and proportion of people receiving an unemployment benefit was in the **Northern and Far Western** region (10.9% and 3,465 people). This is expected, as the region has the largest number of Indigenous people in CDEP schemes (1,260), increasing the rate of recipients from 6.9% to 10.9%.

Table 5.9: Regional totals, people receiving an unemployment benefit, June 2004

Region	No.	% in Region	
		With CDEP	Without CDEP
Hills Mallee Southern	2,926	4.1	3.7
Wakefield[1]	2,163	3.5	3.3
South East	1,595	4.0	3.8
Northern & Far Western	3,465	10.9	6.9
Eyre	1,727	8.1	5.1
Mid North	1,216	6.7	6.7
Riverland	1,217	5.9	5.5
Country SA	**14,309**	**5.4**	**4.5**
Central Northern	24,489	4.9	4.8
Southern	8,789	4.1	4.1
Metropolitan regions	**33,279**	**4.6**	**4.6**
South Australia	**47,783**	**4.9**	**4.6**

[1]**Gawler is included in Wakefield region**

The correlation analysis showed a strong association at the SLA level between high levels of unemployment beneficiaries and the variables for unemployment, the Indigenous population, dwellings with no motor vehicle and single parent families. These results, together with the strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between the receipt of an unemployment benefit and socioeconomic disadvantage (Table 8.2).

The Regions

In the **Northern and Far Western** region, more than ten per cent of the eligible population were in receipt of an unemployment benefit in the SLAs of Unincorporated Far North (21.8%, 802 people), Port Augusta (12.9%, 1,136) and Coober Pedy (12.0%, 182). As noted above, the overall rate of 10.9% is substantially influenced by the inclusion of participants in CDEP schemes.

The SLAs of Unincorporated West Coast (36.7%, 159 people) and Ceduna (31.1%, 698), in the **Eyre** region, had the highest rate of unemployment beneficiaries at the SLA level in country areas. There was a large degree of variation in **Eyre**, as evident from the graph on page 181. The lowest proportions in this region were recorded in Tumby Bay (3.1%, 48 people), Franklin Harbor (3.3%, 26) and Lower Eyre Peninsula (3.6%, 96). Inclusion of the participants in CDEP schemes increased the overall rate from 5.1% to 8.1%.

In **Mid North**, 1,216 people were in receipt of an unemployment benefit, representing 6.7% of the eligible population. Within this region, there were high proportions of unemployment beneficiaries living in Peterborough (11.0%, 121), and Port Pirie - City (9.5%, 787). Almost two thirds (64.8%) of people in receipt of an unemployment benefit in this region were located in Port Pirie - City.

In **Riverland**, 5.9% of the labour force (1,217 people) were in receipt of an unemployment benefit. Large proportions of beneficiaries were recorded in Berri and Barmera - Berri (8.8%, 393 people) and - Barmera (6.5%, 167), and in Unincorporated Riverland (8.8%, eight people).

The proportion of people in receipt of an unemployment benefit in **Hills Mallee Southern** was 4.1% (2,926 people). Relatively low rates were recorded in this region, particularly in the SLAs of Adelaide Hills – North (0.4%, 20), Adelaide Hills Balance (1.7%, 97) and Mount Barker - Balance (2.6%, 143). Murray Bridge had a large number of people receiving an unemployment benefit and the highest proportion in this region (899 people, 8.4%).

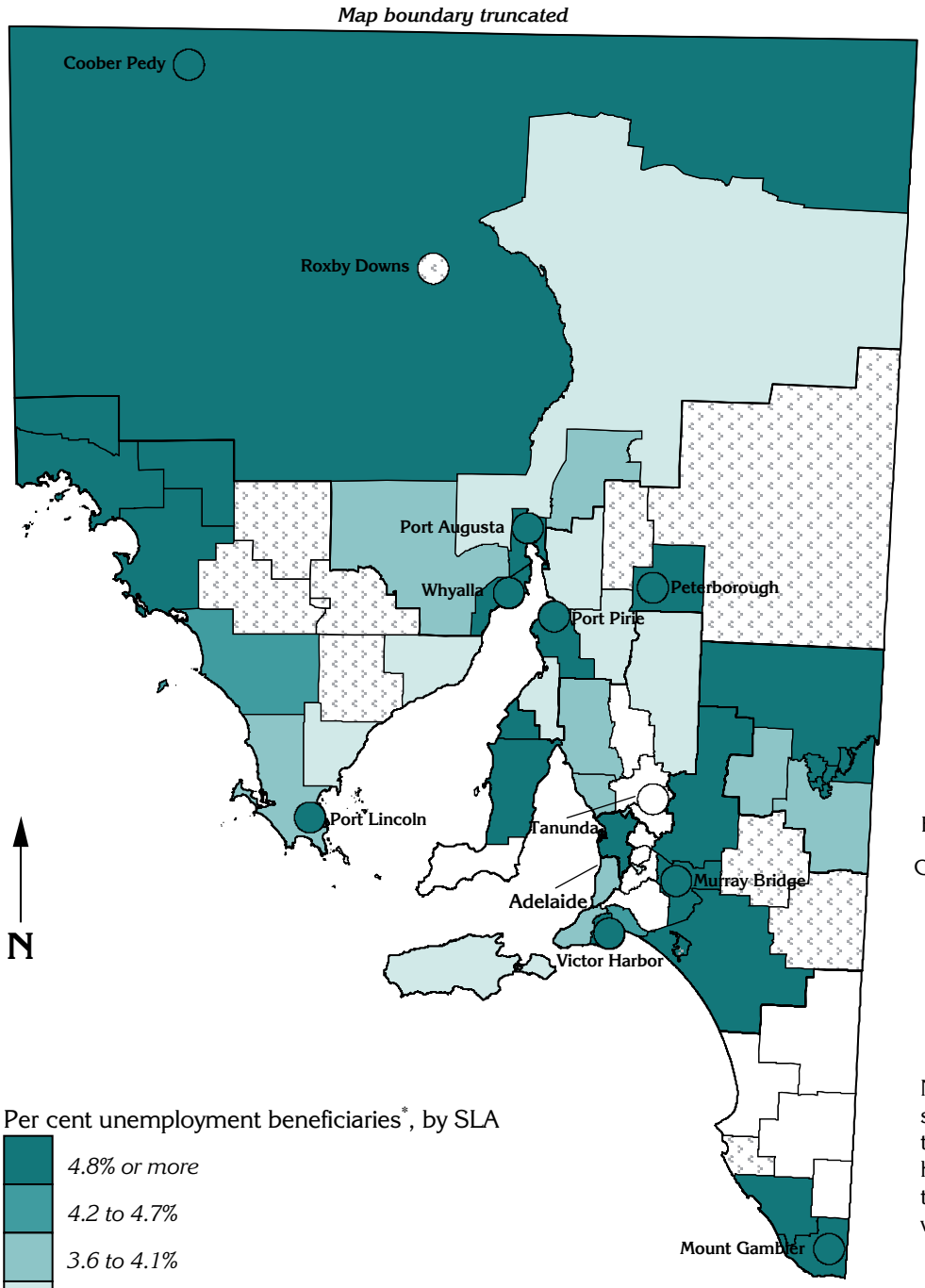
In **South East**, 4.0% of the population (1,595 people) were receiving an unemployment benefit, just under half of whom were located in Mount Gambier (736 people, 5.0%). Within the region, the highest proportion was recorded in Grant (5.4%, 289) and the lowest in Tatiara (1.4%, 63).

Wakefield had a relatively low proportion of people in receipt of an unemployment benefit (3.5%, 2,163 people); these were spread throughout the region, with proportions ranging from 7.7% in Yorke Peninsula - North (325 people) to 1.3% in Barossa - Tanunda (37).

ASGC Remoteness classification

By far the highest proportion of unemployment beneficiaries was in the Very Remote areas (19.2%), with the lowest in Inner Regional (3.8%) and Remote (4.2%) areas. The distribution of the Indigenous population and the inclusion of the CDEP figures are likely to have influenced the high proportion in the Very Remote areas.

Map 5.8
People receiving an unemployment benefit, South Australia, June 2004



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

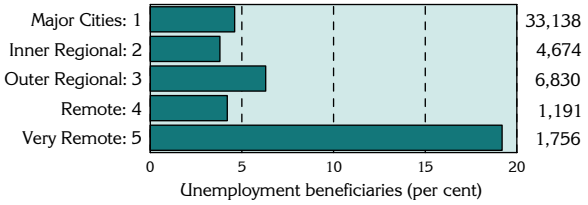
Per cent unemployment beneficiaries*, by SLA

- *4.8% or more*
- *4.2 to 4.7%*
- *3.6 to 4.1%*
- *3.0 to 3.5%*
- *fewer than 3.0%*
- *data not mapped#*

*Includes people in receipt of Newstart Allowance, the Youth Training Allowance and those covered by the Community Development Employment Project as a percentage of males aged 15 to 64 years and females aged 15 to 59 years

Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases

ASGC Remoteness classification



Source: Calculated on data from Centrelink

Details of map boundaries are in Appendix 1.2

Children in welfare-dependent and other low income families, June 2004

Dependent children living in families receiving the Family Tax Benefit (A), but with an income of less than $32,485, have been mapped as a proportion of all children under 17 years of age. Families receiving these pension and benefit types represent the majority of families reliant on government welfare payments for their main source of income, or wage earners on low incomes. The income cut-offs applicable to the data for earlier periods shown were $20,700 in 1992 and $23,000 in 1996. Further details are provided in the explanatory notes at the beginning of the chapter (see page 163).

In 1992, 37.7% of children in South Australia aged under 17 years were living in families receiving income support (Table 5.10). In 1996, the proportion had increased to 43.9%, before declining to 37.5% in 2004. The overall slight decrease in the proportion of dependent children in South Australia from 1992 to 2004 (down by 0.6%) is a result of an increase in the proportion in Metropolitan Adelaide (6.9%) and the more substantial decrease in country South Australia (-15.8%). The authors believe these time trend data represent children in families with similarly low incomes: the higher proportion reported in *Inequality in South Australia: Key determinants of wellbeing* (Hetzel 2004) was incorrect, as it included families on FTB (A) with incomes higher than the more realistic cut-off of $32,485, used here.

Table 5.10: Children in welfare-dependent and other low income families

Per cent

Section of State	1992	1996	2004	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	35.2	42.0	36.9	6.9
Country	44.1	48.1	38.8	-15.8
South Australia	37.7	43.9	37.5	-0.6

[1]**Per cent change over 12 years in the proportion of children in welfare-dependent and other low income families**

Metropolitan regions

Overall, 36.9% of children aged under 17 years of age in the metropolitan regions were living in families receiving government income support at June 2004, a total of 84,466 children.

The distribution of dependent children in families receiving income support is similar to that for other variables mapped in this chapter. The highest proportions were recorded in the northern, north-western and outer southern SLAs, with low proportions in the inner east and south of the city.

The correlation analysis showed a very strong association at the SLA level between high levels of dependent children and many of the indicators of socioeconomic disadvantage, including the variables for jobless families, unskilled and semi-skilled workers and low income families. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggests a strong association at the SLA level between children living in welfare-dependent and other low income families and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

Almost three quarters (72.4%) of the metropolitan region's welfare-dependent children were located in the Central Northern region (61,132 children, 38.4% of the population under 17 years of age).

Within this region, the SLAs of Playford - Elizabeth (75.2%, 4,831 children), Port Adelaide Enfield - Port (62.5%, 3,356), Salisbury - Central (59.9%, 4,017), Playford - West Central (57.1%, 2,248), Port Adelaide Enfield - Inner (55.3%, 2,114) and Charles Sturt - North-East (50.4%, 2,626) had more than half of their children under 17 years of age living in welfare-dependent and other low income families.

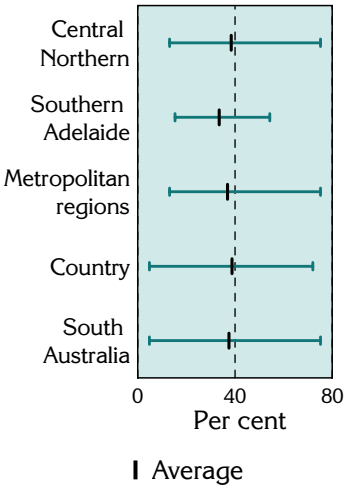
The lowest proportions were recorded in the inner eastern areas of Burnside - South-West (13.1%, 514 children), Walkerville (14.5%, 182), Burnside - North-East (15.8%, 626), Unley - East (17.1%, 581) and Norwood Payneham St Peters - West (17.5%, 492).

Southern Adelaide

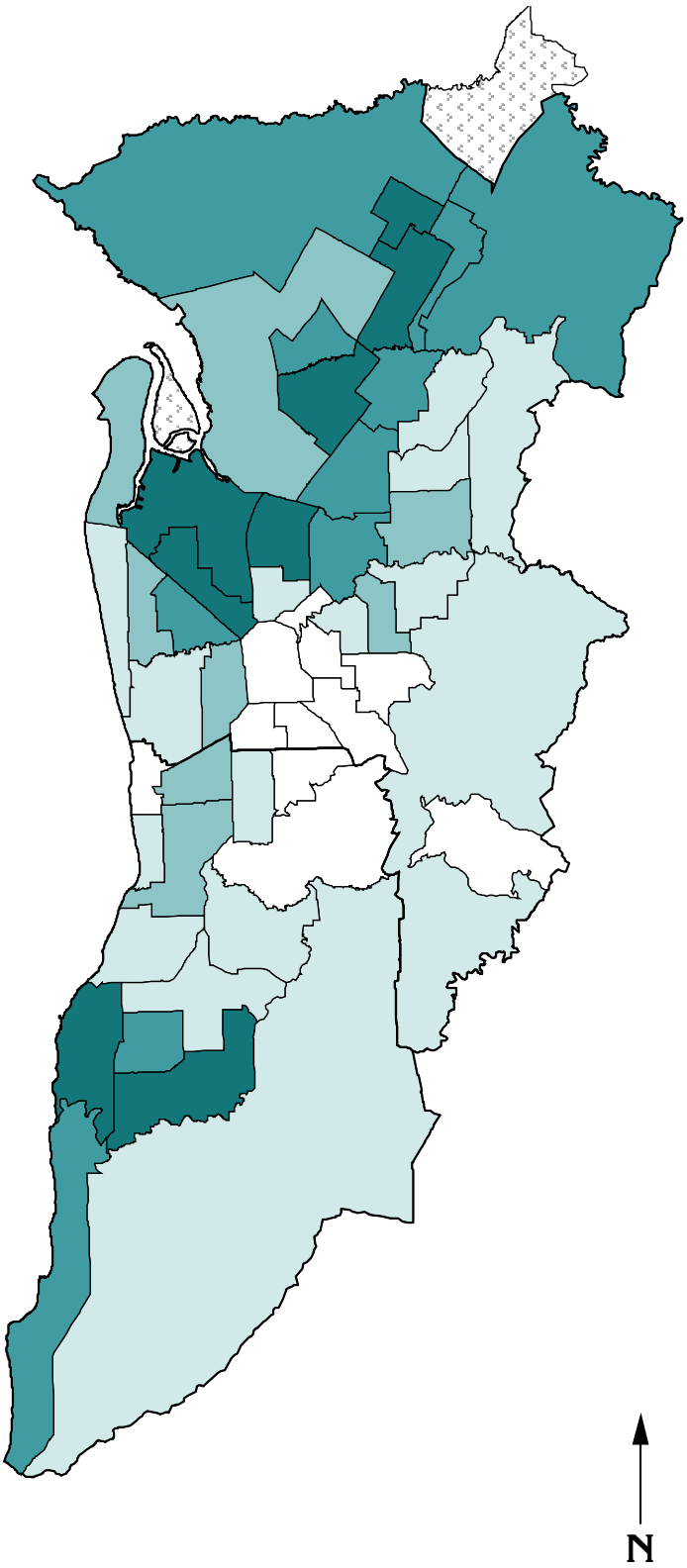
There were 23,334 children in the Southern region living in welfare-dependent and other low income families, representing 33.5% of children under 17 years of age. The highest proportions of dependent children were in the Onkaparinga SLAs of - North Coast (54.3%, 2,052 children), - Hackham (53.8%, 1,960), - Morphett (47.0%, 2,651) and - South Coast (44.8%, 2,678).

Lowest proportions were recorded for Mitcham - North-East (15.3%, 470 children), Holdfast Bay - North (21.4%, 591), Mitcham - Hills (22.5%, 1,063) and Marion - South (24.0%, 1,326). Onkaparinga - Woodcroft (2,765 children, 31.1%) had the largest number of dependent children in the region.

Map 5.9
Children in welfare-dependent and other low income families, metropolitan regions, June 2004



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent dependent children*, by SLA

- *48.0% or more*
- *40.0 to 47.9%*
- *32.0 to 39.9%*
- *24.0 to 31.9%*
- *fewer than 24.0%*
- *data not mapped#*

*Includes children living in welfare-dependent and other low income families as a percentage of children aged under 17 years

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: Calculated on data from Centrelink ***Details of map boundaries are in Appendix 1.2***

Children in welfare-dependent and other low income families, June 2004

Country South Australia

There were 39,223 dependent children of selected pensioners and beneficiaries in country South Australia at June 2004, representing 38.8% of children under the age of 17 years.

Across the regions, **Mid North** (47.6%) had the highest proportion of dependent children, followed by **Northern and Far Western** (42.7%) and **Riverland** (42.6%). The lowest proportion was recorded in **South East**, with 31.5% of children living in welfare-dependent families.

Table 5.11: Region totals, children in welfare-dependent & other low income families, June 2004

Region	No.	% in Region	% of State
Hills Mallee Southern	10,772	40.4	8.7
Wakefield[1]	8,365	36.5	6.8
South East	4,854	31.5	3.9
Northern & Far Western	5,352	42.7	4.3
Eyre	3,172	36.9	2.6
Mid North	3,392	47.6	2.7
Riverland	3,366	42.6	2.7
Country SA	**39,223**	**38.8**	**31.7**
Central Northern	61,132	38.4	49.4
Southern	23,334	33.5	18.9
Metropolitan regions	**84,466**	**36.9**	**68.3**
South Australia	**123,689**	**37.5**	**100.0**

[1]**Gawler is included in Wakefield region**

The correlation analysis showed a strong association at the SLA level between high levels of children in welfare-dependent and other low income families and the variables for single parent families, jobless families, dwellings with no motor vehicle, unemployment, low income families and dwellings rented from the State Housing Trust. These results, together with the strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between dependent children of selected pensioners and beneficiaries and socioeconomic disadvantage (Table 8.2).

The Regions

Just under half (47.6%) of children aged under 17 years in **Mid North** were living in families receiving income support (3,392 children). The largest proportion across all country regions was recorded in Peterborough, with almost three quarters of children in welfare-dependent families (72.0%, 299 children). The largest numbers of dependent children were in the SLAs of Port Pirie - City (1,728, 52.2%) and Northern Areas (443, 39.2%).

Only 4.8% of children in Roxby Downs were living in welfare-dependent and other low income families (57 children), in a region with an overall rate of 42.7%. The highest proportions at the SLA level in **Northern and Far North Western** were recorded in Coober Pedy (64.4%, 277), Whyalla (48.1%, 2,572) and Port Augusta (47.5%, 1,612).

There were 3,366 children in the **Riverland** living in welfare-dependent and other low income families, comprising 42.6% of children aged under 17 years. Within the region, there were high proportions of dependent children living in Unincorporated Riverland (52.4%, with a small number of 19 children), Renmark Paringa - Renmark (46.0%, 886) and Berri and Barmera - Berri (44.0%, 743).

More than one quarter of country South Australia's children who were in welfare-dependent families were in **Hills Mallee Southern** (10,722 children, 40.4%). Proportions within this region ranged from 25.9% in Karoonda East Murray (71 children) to 53.0% in Murray Bridge (2,264).

The number of children in **Eyre** living in families receiving income support payments was 3,172, over one third (36.9%) of children under 17 years. The highest proportion was in the SLA of Unincorporated West Coast (67.4%, 116); and the largest numbers were in Port Lincoln (1,458 children, 40.4%), Ceduna (524, 51.4%) and Lower Eyre Peninsula (339, 30.7%).

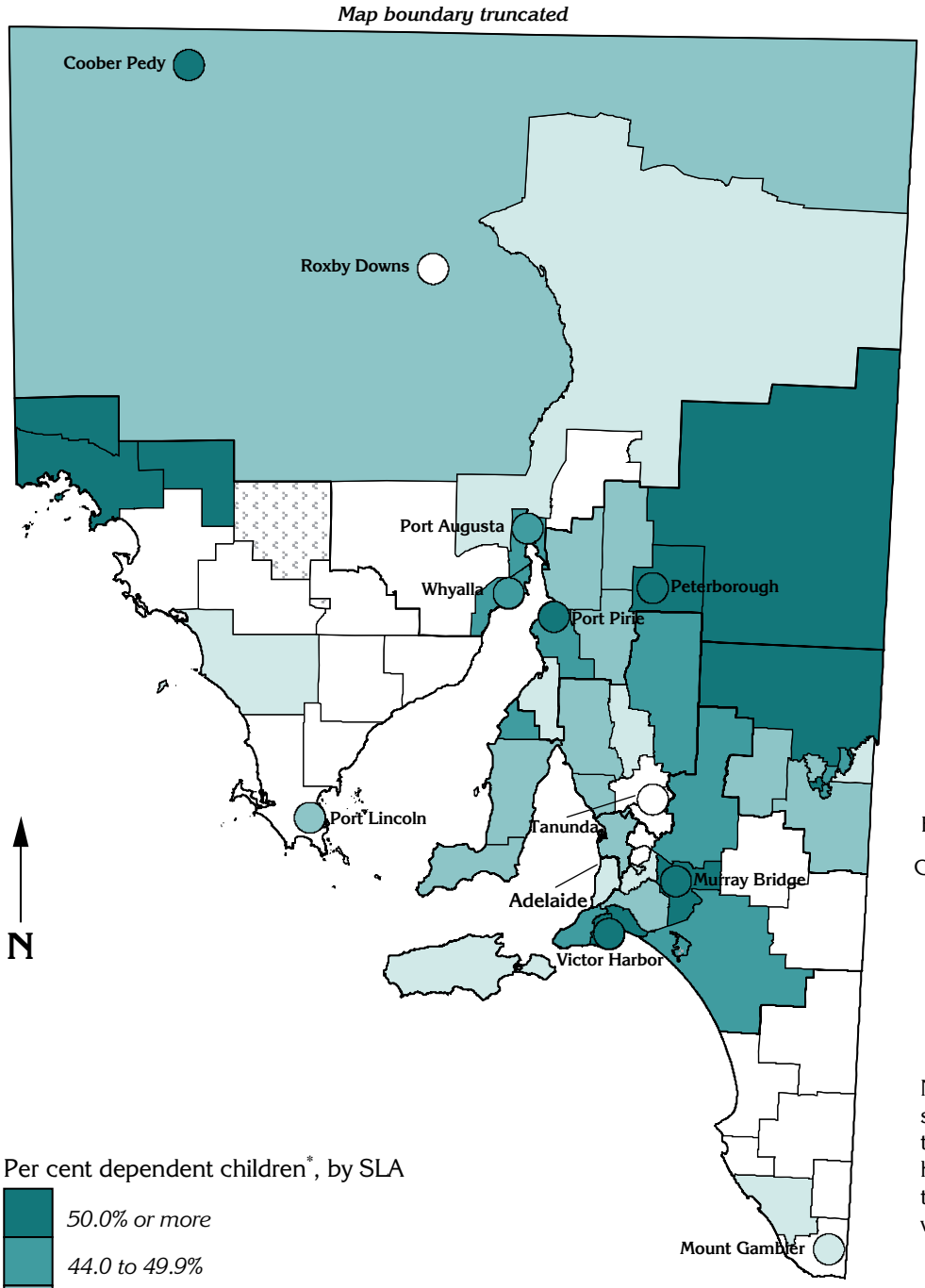
Wakefield region had the second highest regional number of welfare-dependent children (8,365), representing 36.5% of children under 17 years. Within this region, there were high proportions in the SLAs of Goyder (49.7%, 460 children), Copper Coast (47.3%, 1,124) and Wakefield (42.3%, 650). There was a relatively large number of dependent children in Gawler (1,696 children, 39.3%).

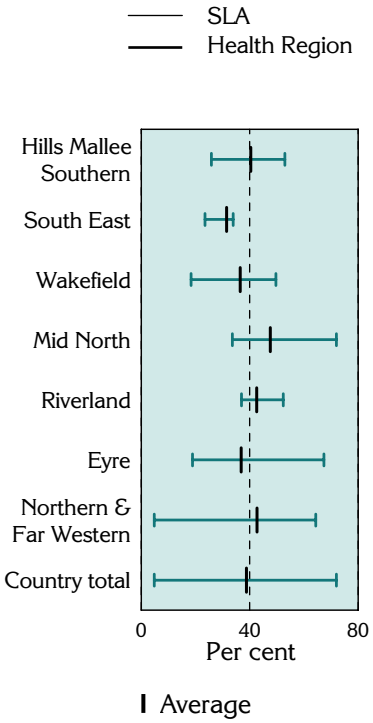
The **South East** region had the lowest proportion of dependent children in low income families (31.5% and 4,854 children), with the largest number located in Mount Gambier (1,967 children, 33.4%); the highest and lowest proportions were in Wattle Range - West (33.9%, 752) and Robe (23.5%, 74), respectively.

ASGC Remoteness classification

The proportion of the population aged under 17 years living in families receiving income support payments was highest in the Very Remote (45.5%) and Outer Regional areas (41.7%), and the lowest was recorded in the Remote areas (32.2%).

Map 5.10
Children in welfare-dependent and other low income families, South Australia, June 2004





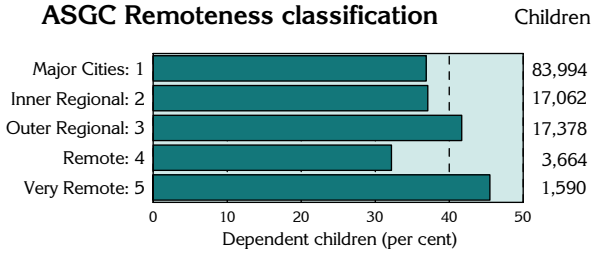
Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent dependent children*, by SLA

- *50.0% or more*
- *44.0 to 49.9%*
- *38.0 to 43.9%*
- *32.0 to 37.9%*
- *fewer than 32.0%*
- *data not mapped#*

*Includes children living in welfare-dependent and other low income families as a percentage of children aged under 17 years

Data were not mapped because the SLA has a population of less than 100



Source: Calculated on data from Centrelink

Details of map boundaries are in Appendix 1.2

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6 Health status and risk factors

Introduction

The chapter includes, for the first time, information on the geographic distribution of participation and outcome indicators for screening services for women – breast screening and cervical screening – and for the dental health of 12 year old children. Similarly, estimates of the prevalence of selected chronic conditions, associated risk factors and self-reported summary measures of health, as well as avoidable mortality, are new additions. Rates of smoking during pregnancy, overweight and obesity among four old year old boys, and children fully immunised at 12 months of age, previously included in the *Social Health Atlas of Young South Australians* (Tennant et al. 2003), have been updated and included in this atlas. Cancer incidence, reported in the first edition of the atlas, is also presented.

Data for termination of pregnancies and premature deaths are continuing series over the three editions, although details of causes of death are not in the atlas, but are available on the PHIDU website (at http://www.publichealth.gov.au).

The chapter has been organised under the following headings.

Perinatal:

- low birthweight babies
- pregnancy outcomes
- termination of pregnancy
- smoking during pregnancy

Immunisation status at one year of age

Overweight and obese four year old boys

Dental health of 12 year old children

Chronic disease and injury events

Self-reported health

Risk factors

Cancer incidence

Premature mortality

Avoidable mortality

Burden of disease

Notes on the data presented

In addition to the notes included with each topic, further information is provided here on the estimates of chronic disease and associated risk factors, and on avoidable mortality. Many of the indicators are presented as standardised ratios: these are described in Appendix 1.3.

Synthetic predictions

Data on the extent of morbidity (illness or disease), disability and risk factors in the community have generally not been available at the local area level, apart from proxy measures such as hospital admissions, or incidence of cancers.

If data are available for the State, or Australia, it is possible to estimate them at the small area level, using the technique of Synthetic Prediction. This technique has been used to produce estimates of a selection of chronic diseases and associated risk factors, and two summary measures of health, for SLAs across South Australia. The estimates were produced from data collected in the 2001 ABS National Health Survey (NHS). Synthetic predictions represent, in effect, a prorating of the Australian estimate (from the 2001 NHS) for a particular variable to the chosen area level (in this case, an SLA). This analysis was undertaken, under contract, by the Australian Bureau of Statistics, as they hold the NHS unit record files.

The approach used was to undertake an analysis of the NHS data for Australia to identify associations in the data between the variables that we wish to predict at the area level (eg. prevalence of chronic conditions and risk factors) and the data we have at the area level (eg. socioeconomic status, use of health services). The relationship between these variables for which area level data are available (the predictors) and the reporting of chronic conditions in the NHS is also a part of the model developed by the ABS. For example, such associations might be between the number of people reporting specified chronic conditions in the NHS and:

- the number of hospital admissions (in total, to public and to private hospitals, by age and sex),
- socioeconomic status (as indicated by Census data, or for recipients of government pensions and benefits), and
- the number of visits to a general medical practitioner.

The results of the modelling exercise are then applied to the SLA counts of the predictors. The prediction is, effectively, the likely value for a typical area with those characteristics. The raw numbers were then age-standardised, to control for the effects of differences in the age profiles of areas.

The NHS has two major limitations for producing these estimates. One is that it only covers people living in private dwellings: those excluded are residents of nursing homes or other aged care facilities, hospitals, boarding houses, hotels, motels, and so forth. The other is that the survey excludes the sparsely settled areas of Australia (these areas are equivalent to the Very Remote areas under the AGSC remoteness classification).

The implication of the absence of residents of non-private dwellings from the NHS for the estimates is that the model based on the NHS excludes these populations, whereas the local area data include them. Further, applying rates from the model to a local area with a relatively large population in non-private dwellings, incorrectly assigns chronic conditions to the area. Offsetting this is that people in non-private dwellings are likely to report higher, or much higher, rates of chronic conditions. A simple sensitivity analysis was undertaken to ascertain the impact of limiting the model to populations under 75 years, and then to populations under 65 years, as these age cut-offs are likely to exclude the majority of those in nursing homes, hostels and other non-private dwellings outside the coverage of the NHS.

The exclusion of the sparsely settled areas means that the predictions cannot be produced for these areas.

A more detailed description of the production of these estimates is in Appendix 1.5.

Details of the particular variables for which estimates have been made, and the way in which the information was gathered on each topic in the NHS are provided on page 219.

Avoidable mortality

Over the last thirty years, as health services have greatly expanded their range and scope, interest has grown in attempting to evaluate their performance and to identify areas for improvement. One approach to assessing the quality of health care in terms of clinical outcomes has been to identify deaths that should not have occurred, given available health care interventions. This method was initiated in 1976 by Rutstein, who prepared a list of 'amenable' health conditions in consultation with an expert panel. Deaths from these causes represented 'untimely and unnecessary deaths' and their occurrence was 'a warning signal, a sentinel health event, that the quality of care might need to be improved' (Rutstein et al. 1976). The intention was to use the list for the purposes of medical audit.

Further studies followed. In the United Kingdom, Charlton and colleagues chose 14 disease groups from Rutstein's original list, for which mortality in a developed country such as the United Kingdom should be wholly avoidable (Charlton et al. 1983). The list included certain conditions, such as appendicitis, where prevention of death conferred an all-of-life benefit, and others, such as hypertensive disease, where intervention might lead only to death being deferred (Jamrozik & Hobbs 2002).

The concept of studying 'avoidable' mortality as an indicator of the outcome of health care has been applied mainly in studies of time-trends and geographical and socioeconomic variations within one country, between countries or in a region of the world (Westerling & Rosén 2002; Treurniet et al. 2004). A number of atlases of preventable mortality for countries of the European Community have been published (Holland et al. 1988, 1993, 1997). The approach has also been extended from studies of avoidable mortality and morbidity to those of potentially avoidable hospitalisations (for example, Weissman et al 1992; Billings et al. 1996).

There has been much debate about the extent of the contribution of advances in health care to the decline in amenable or potentially avoidable mortality that can be demonstrated by studies of this kind. Many of the studies seeking to link amenable mortality directly with health care resources have failed to do so, especially within countries (Nolte & McKee 2003).

An atlas of avoidable mortality in Australia and New Zealand is currently being prepared by the Public Health Information Development Unit, for release in 2006. This chapter includes an analysis at the SLA level of deaths from avoidable conditions, for those deaths at ages 0 to 74 years.

Gaps and deficiencies in the data

Some major gaps and deficiencies in the data available for mapping are described below.

Data for Aboriginal people and Torres Strait Islanders

The identification of Aboriginal people and Torres Strait Islanders in most statistical collections is of poor quality. Health statistical collections are no exception, and where data are required at an area level, they are more problematic.

The text draws attention to situations where it is believed that the presence of the Indigenous population is likely to have influenced the data for an area. This is of particular importance for the more remote areas of the State, in both the maps and the data presented by the AGSC remoteness classification.

Other gaps and deficiencies

Examples of topics for which data were not available, in areas that impact on health and wellbeing, are given in Chapter 1 (Table 1.2, page 8).

At this stage, there are no small area datasets that reliably describe these factors. However, just as estimates have been made at the local area level from the 2001 National Health Survey, it is planned that local area estimates will be produced from the 2003 Survey of Disability, Ageing and Carers. No date has yet been set for the release of these estimates.

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Low birthweight babies, 2000 to 2002

Low birthweight babies are babies (both live-born and stillborn) weighing less than 2,500 grams at birth. Low birthweight increases the risk of death in infancy, and the risk of other health problems. An infant may be small when it is born for two reasons: it may be born early (preterm), or it may be small for its gestational age (intra-uterine growth restriction). Risk factors include socioeconomic disadvantage; maternal size, age and nutritional status; the number of babies previously born; illness, and alcohol, tobacco and drug use during pregnancy; and duration of the pregnancy (AIHW 2004). Babies born to Indigenous women in 2001 were more than twice as likely to be of low birthweight (12.9%) than those born to non-Indigenous women (6.0%). Indigenous women in South Australia had the highest low-birthweight proportions (16.5%) of the States and Territories (Laws & Sullivan 2004).

The number of low birthweight babies born to female residents of Metropolitan Adelaide dropped, from 943 per year over 1989 to 1992, to 875 per year over 2000 to 2002, a decline of 7.2%. However, as the total number of babies born also declined, the proportion of babies born with a low birthweight increased marginally (by 2.6%) (Table 6.1) The number of low birthweight babies born in country South Australia also declined, from 359 per year over 1989 to 1992, to 333 per year over 2000 to 2002, again down by 7.2%. There was a larger decline in the total number of births in this period, resulting in an increase (of 7.9%) in the proportion of babies that have a low birthweight from 6.3% in 1989 to 1992, to 6.8% in 2000 to 2002.

Table 6.1: Low birthweight babies

Per cent of live births

Area	1989-1992	1995-1997	2000-2002	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	6.7	6.9	6.9	2.6
Country	6.3	6.9	6.8	7.9
South Australia	6.6	6.9	6.8	3.7

[1]**Per cent change over ten years in the proportion of low birthweight babies**

Metropolitan regions

There were 2,571 low birthweight babies born in the metropolitan regions (excluding Gawler) in 2000 to 2002 (Table 6.2), with rates at the SLA level consistent with the pattern of socioeconomic disadvantage (Map 6.1).

High rates of low birthweight babies were very strongly correlated with high rates of smoking during pregnancy and strongly correlated with perinatal risk factors and the total fertility rate. There were also very strong, and strong correlations with indicators of disadvantage such as jobless families (very strong), single parent and low income families and Indigenous people (all strong correlations). Together with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, these results indicate a strong association at the SLA level between high rates of low birthweight babies and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

There were 1,890 low birthweight babies born in Central Northern, 7.0% of all births. Of all metropolitan SLAs, babies with low birthweight were most predominant in Playford - Elizabeth (11.2%, 152 babies). There were also high proportions of low birthweight babies, but much smaller numbers, in Salisbury Balance (10.4%, 23 babies), Playford - West Central (9.1%, 63), Port Adelaide Enfield - Port (8.6%, 91), Port Adelaide Enfield - Inner (8.5%, 65), Playford - East Central (8.3%, 71), Salisbury - North-East (8.0%, 62), Playford - West (7.7%, 21), Playford - Hills (7.6%, eleven) and West Torrens - East (7.6%, 66).

In addition to Playford - Elizabeth, several SLAs had large numbers of low birthweight babies: Salisbury - South-East (92 babies, 7.0%), Salisbury - Central (90, 7.4%), Salisbury - Inner North (80, 7.2%), Tea Tree Gully - North (75, 6.8%), Port Adelaide Enfield - East (71, 6.8%), Charles Sturt - North-East (66, 6.7%), Port Adelaide Enfield - Coast (65, 7.3%) and Tea Tree Gully - South (65, 5.8%).

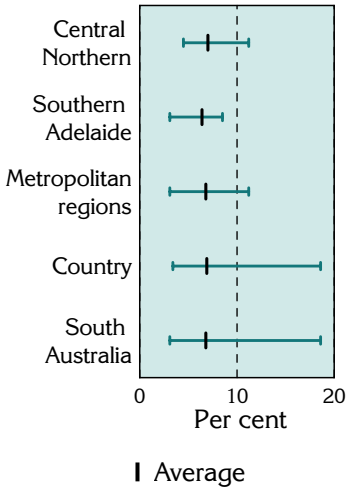
The SLAs of Adelaide Hills - Ranges (4.5%, 16 babies) and - Central (4.6%, 18), Charles Sturt - Coastal (5.1%, 40), Norwood Payneham St Peters - East (5.2%, 24), Adelaide (5.4%, 15) and Burnside - South-West (5.4%, 28) all had proportions in the lowest range mapped.

Southern Adelaide

The proportion of low birthweight babies born to residents of the Southern region (6.4%, 681 babies) was slightly lower than for Central Northern (7.0%). There were relatively high rates of low birthweight babies at the SLA level within the region, with the highest in Onkaparinga - Hackham (8.5%, 43) and - North Coast (7.7%, 50).

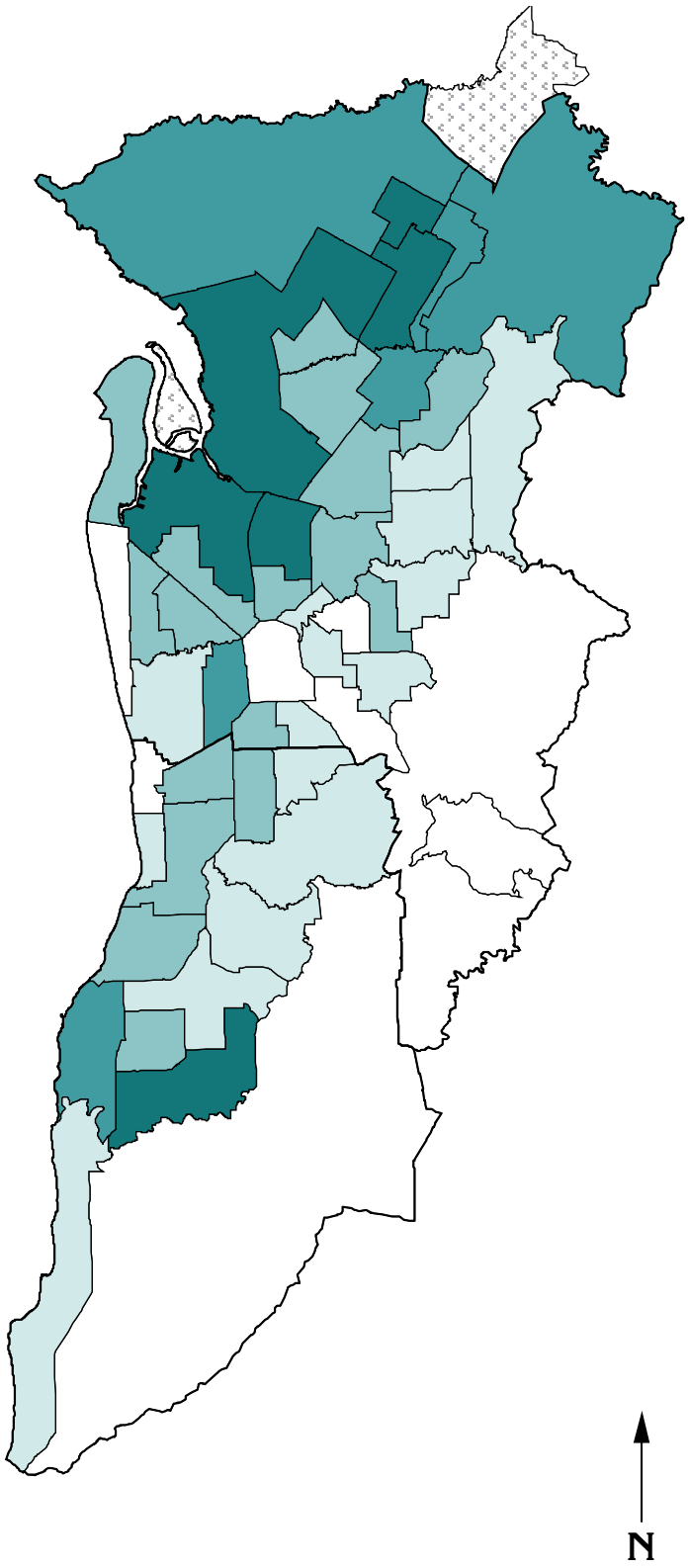
The largest numbers of low birthweight babies recorded in the south were in the SLAs of Onkaparinga - Woodcroft (80 babies, 6.1%) and - Morphett (72, 6.6%), and Marion - Central (62, 6.9%). There were few low birthweight babies in Holdfast Bay - North (3.1%, 14) and Onkaparinga - Hills (5.1%, 17).

Map 6.1
Low birthweight babies, metropolitan regions, 2000 to 2002



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Low birthweight babies* (per cent of all births), by SLA



*Low birthweight babies are babies (both live-born and stillborn) weighing less than 2,500 grams at birth

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

There were 1,053 babies born with a low birth weight to country residents in 2000 to 2002, representing 6.9% of all births.

The country regions with the highest proportions of low birthweight babies were **Northern and Far Western** (7.8%, 156 babies) and **Riverland** (7.3%, 97) (Table 6.2).

Table 6.2: Regional totals, low birthweight babies, 2000 to 2002

Region	No.	%
Hills Mallee Southern	235	6.3
Wakefield[1]	225	7.0
South East	160	6.4
Northern & Far Western	156	7.8
Eyre	99	6.8
Mid North	81	7.0
Riverland	97	7.3
Country SA	**1,053**	**6.9**
Central Northern	1,890	7.0
Southern	681	6.4
Metropolitan regions	**2,571**	**6.8**
South Australia	**3,624**	**6.8**

[1]**Gawler is included in Wakefield region**

There was a strong correlation between high proportions of low birthweight babies and poor perinatal outcomes. This variable was consistently weakly correlated with a number of the indicators of disadvantage, suggesting an association at the SLA level between low birthweight babies and socioeconomic disadvantage (Table 8.2).

The Regions

There were 156 low birthweight babies in **Northern and Far Western**, 7.8% of all babies born. There were very high rates of low birthweight babies in the SLAs of Unincorporated Flinders Ranges (18.6%, eight babies), Port Augusta (11.5%, 64) and Unincorporated Far North (8.3%, ten).

In **Riverland**, 7.3% of babies born were of low birthweight (97 babies). Berri and Barmera - Berri had a high proportion of 10.3% (30 babies).

There were 225 low birthweight babies born to residents in **Wakefield** (7.0% of babies). Within this region, there were high rates in Yorke Peninsula - North (11.3%, 24), Gawler (8.9%, 55), Mallala (8.6%, 23) and Barossa - Angaston (7.7%, 20).

The proportion of babies born with a low birth weight in **Mid North** was 7.0% (81 babies). At the SLA level, there were high rates of low birthweight babies in Peterborough (8.9%, five babies) and Port Pirie - City (8.5%, 51).

In **Eyre**, the proportion of babies born with a low birthweight was 6.8% (99 babies), with high proportions in Unincorporated West Coast (10.1%, five babies), Ceduna (9.7%, 20) and Cleve (7.7%, six).

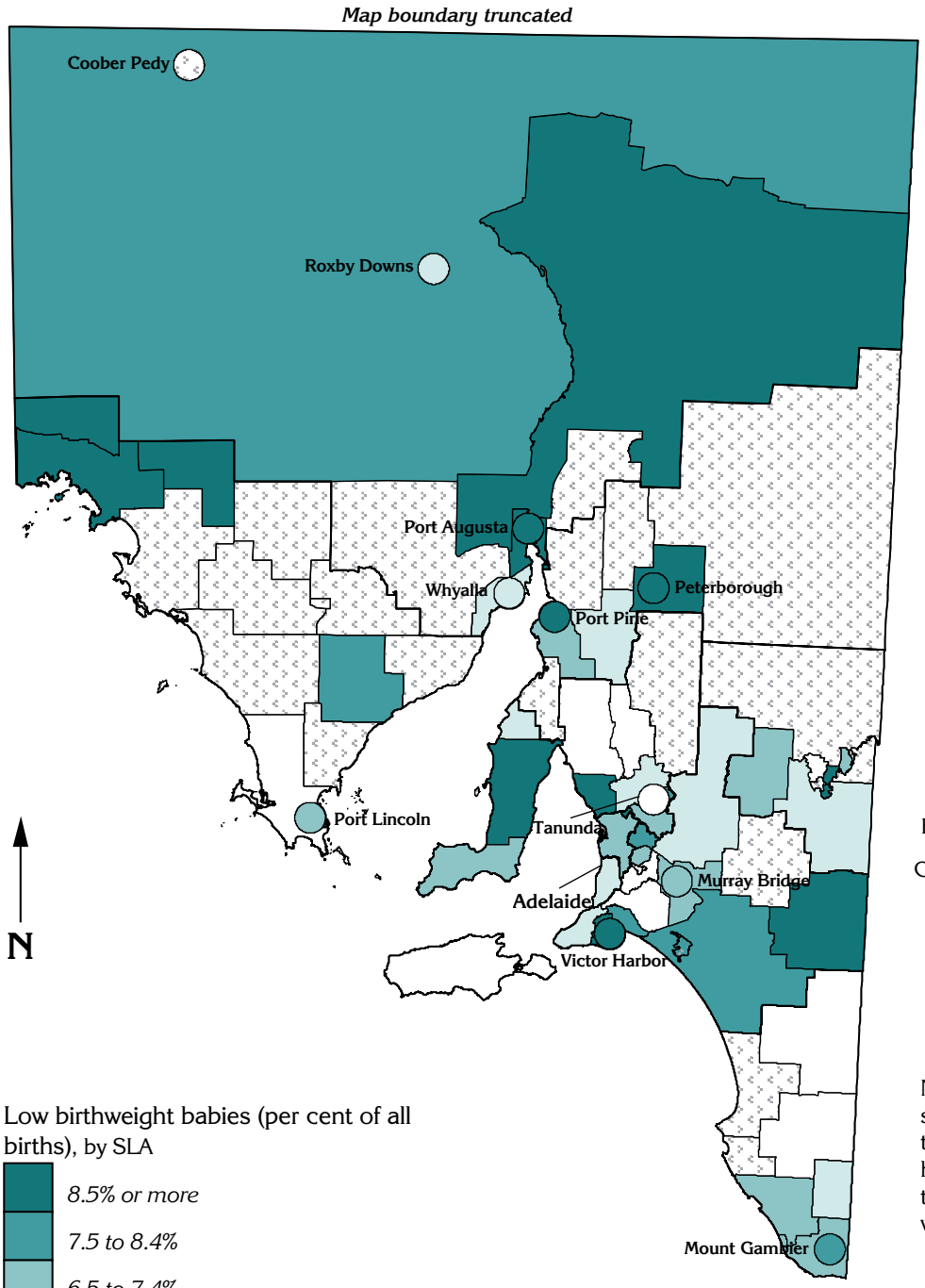
There were 160 low birthweight babies in **South East**, 6.4% of all babies. Just over half of these births were to residents of Mount Gambier (83 babies, 8.4%).

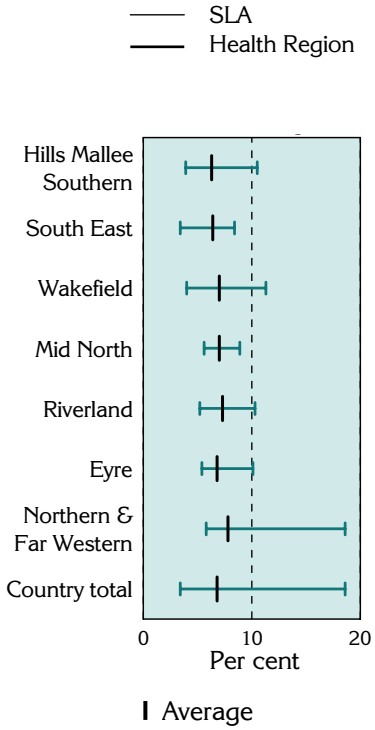
The largest number of low birthweight babies was born to residents of **Hills Mallee Southern** (235 babies, 6.3%). Within this region, there were high rates of low birthweight babies in Victor Harbor (10.5%, 24), Southern Mallee (9.1%, eight), Alexandrina - Coastal (8.3%, 21), The Coorong (7.8%, 16) and Adelaide Hills - North (7.5%, 16).

ASGC Remoteness classification

There was no consistent pattern across the remoteness areas for low birthweight babies, with fairly consistent proportions in most classes other than for Very Remote, where the proportion was 8.3%, compared to 6.9% in Major Cities.

Map 6.2
Low birthweight babies, South Australia, 2000 to 2002





Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

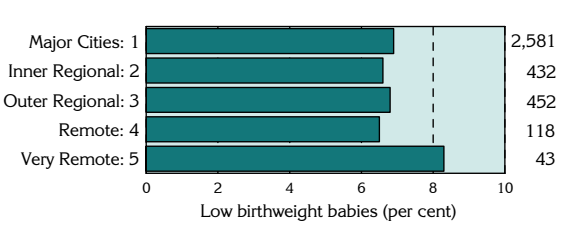
Low birthweight babies (per cent of all births), by SLA

- *8.5% or more*
- *7.5 to 8.4%*
- *6.5 to 7.4%*
- *5.5 to 6.4%*
- *fewer than 5.5%*
- *data not mapped#*

*Low birthweight babies are babies (born live-born and stillborn) weighing less than 2500 grams at birth

#Data were not mapped because the SLA has a population of less than 100 or there were fewer than five low birthweight babies

ASGC Remoteness classification



Source: See data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Pregnancy outcomes, 2000 to 2002

The Pregnancy Outcome Unit, Epidemiology Branch, South Australian Department of Health, obtains data for births of babies of at least 400 grams birthweight or 20 weeks' gestation (terminations of pregnancy of at least 20 weeks' gestation, most of which are for congenital abnormalities, are included). The data, provided by hospital and homebirth midwives through the Perinatal Statistics Collection, include maternal socio-demographic, medical and obstetric information, as well as characteristics and outcomes of the baby.

Studies undertaken by the Epidemiology Branch in 1986 on these data identified seventeen risk factors that were most predictive of adverse perinatal outcomes (see box).

Risk factors most predictive of adverse perinatal outcomes

Aboriginal maternal race; single marital status; high parity; previous stillbirths; previous neonatal death; previous pregnancy termination; few antenatal visits; young maternal age; obstetric complications; complications of labour/delivery; homebirth; low birthweight; pre-term birth; low Apgar score; prolonged time to establish regular breathing; congenital abnormality; perinatal death.

An analysis using risk factors is useful for a number of reasons. Not only does it provide a range of variables for examination, it also suggests reasons for any observed elevations in adverse perinatal outcomes. A number of these risk factors directly or indirectly reflect the socioeconomic status of women for whom these events are recorded: for example, direct association with single, teenaged and Aboriginal and Torres Strait Islander women; and indirectly, with the birth of a low birthweight baby occurring more frequently to women who are of lower socioeconomic status.

Detailed analysis of the seventeen risk factors for adverse outcomes was subsequently published in 1988 (SAHC 1988) with a follow-up study published in 1995 (Taylor et al. 1995). The analysis was repeated by the Epidemiology Branch for the years from 1995 to 1997 for the second edition of this atlas, and again for the years 2000 to 2002, for *A Social Health Atlas of Young South Australians* (Tennant et al. 2003).

For the purpose of publication, a summary perinatal risk factor score has been calculated for each SLA. The score is calculated by examining the frequency with which a poorer outcome was recorded on individual risk factors (e.g. percentage of mothers with low birthweight babies, or with previous stillbirths) in relation to the South Australian average. SLAs were considered to be 'high risk' for adverse perinatal outcomes if ten or more individual risk factors had a poor outcome, in comparison with the South Australian average.

Metropolitan regions

The majority of SLAs in the metropolitan regions were not considered to be high risk for adverse perinatal outcomes. SLAs that were high risk were located in clusters, with twelve SLAs in one cluster in Central Northern and two smaller clusters in Southern, with a total of six SLAs (Map 6.3).

SLAs identified as being at high risk for adverse perinatal outcomes were very strongly correlated with the variables for single parent families, unskilled and semi-skilled workers, female sole parent pensioners and jobless families. Strong correlations were found with smoking during pregnancy, high rates of admission to public hospitals, unemployment, low income families, clients of community health and Child and Adolescent Mental Health Services, and dwellings rented from the SA Housing Trust. These results, together with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between high risk factors for adverse perinatal outcomes and socioeconomic disadvantage (Table 8.1).

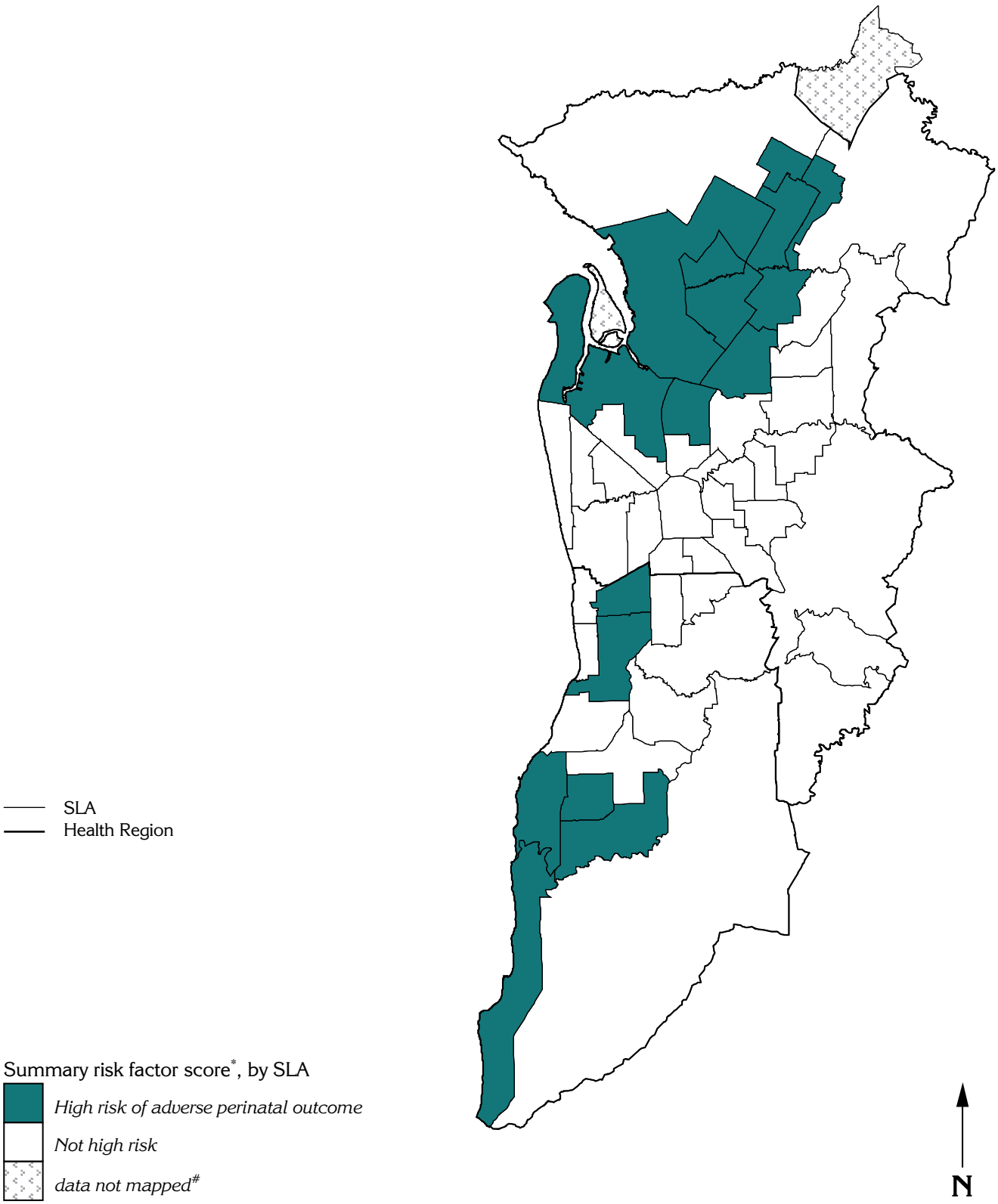
Central Northern Adelaide

At the regional level, seven SLAs had adverse rates compared with the State rates. Playford - Elizabeth had the highest possible perinatal risk factor score, with rates in 17 risk factors indicating a poor outcome in comparison with the South Australian average. In addition to having the highest risk score in the metropolitan regions, this SLA had the largest number of births over the years 2000 to 2002. The surrounding SLAs of Salisbury - Central (15 risk factors) and Salisbury - Inner North (15) also had a very high risk of poor perinatal outcomes. The other high risk SLAs in this region were Playford - West Central (13 risk factors), Port Adelaide Enfield - Port (13), Playford - East Central (12), Port Adelaide Enfield - Inner (12), Salisbury Balance (12), Port Adelaide Enfield - Coast (ten), and Salisbury - North-East (ten) and - South East (ten).

Southern Adelaide

Eight SLAs had adverse rates at the regional level, in comparison with the State rates. The SLAs that were high risk for adverse perinatal outcomes in Southern were the Onkaparinga SLAs of - Hackham (14 risk factors), - North Coast (13), - Morphett (eleven) and - South Coast (ten), and the Marion SLAs of - Central (ten) and - North (ten).

Map 6.3
Perinatal risk factor scores, metropolitan regions, 2000 to 2002



*See text for details of risk factors and calculations of risk factor scores

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

The twelve SLAs in country South Australia with high risk factor scores, indicating adverse perinatal outcomes, were spread across the State, in a number of towns, and in remote SLAs with high proportions of Aboriginal and Torres Strait Islander peoples (Map 6.4).

The rates were also calculated at a regional level, to provide a summary score for each region (Table 6.3). **Northern and Far Western** had the highest number of risk factors and **Hills Mallee Southern** had the lowest.

Table 6.3: Regional totals, perinatal risk factors, 2000 to 2002

Region	Risk factors[1]
Country SA	
Hills Mallee Southern	3
Wakefield[2]	7
South East	7
Northern & Far Western	13
Eyre	9
Mid North	7
Riverland	7
Metropolitan regions	
Central Northern	7
Southern	8

[1]**Number of risk factors in the region with rates above the State average**
[2]**Gawler is included in Wakefield region**

There was a strong correlation at the SLA level between perinatal risk factors and low birthweight babies. Perinatal risk factors were consistently weakly correlated with a number of the indicators of disadvantage. These results, together with the weak inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between socioeconomic disadvantage and perinatal risk factors (Table 8.2).

The Regions

Northern and Far Western was the only region identified as being high risk overall (with 13 risk factors indicating adverse outcomes). Within this region, three SLAs were also high risk: these were Port Augusta (14 risk factors), Unincorporated Flinders Ranges (12) and Whyalla (ten).

Although it was not recorded as high risk, **Eyre** was just below the cut-off of ten risk factors, with a score of nine. The three SLAs of Port Lincoln (13 risk factors), Ceduna (12) and Unincorporated West Coast (12) were all high risk for adverse perinatal outcomes.

Seven risk factors were calculated for **Wakefield**, with high numbers of risk factors in the SLAs of Gawler (12 risk factors) and Yorke Peninsula - North (12).

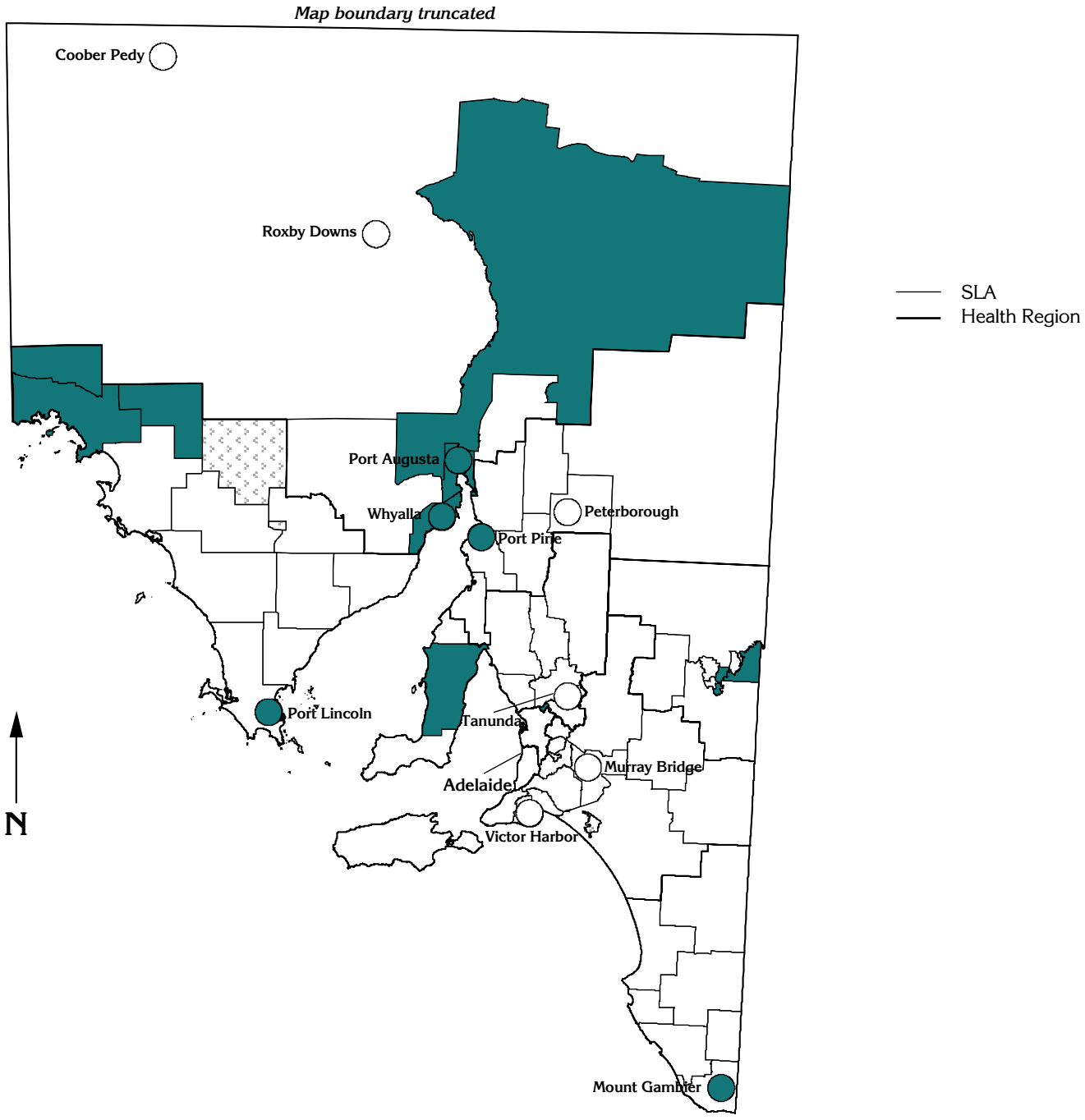
A summary score of seven risk factors was calculated for **South East**. Mount Gambier was identified as being high risk, with a score of ten.

Mid North also had a summary score of seven risk factors, indicating a poor outcome in comparison with the South Australian average. Port Pirie - City had elevated scores for 12 of the 17 risk factors.

Similarly, **Riverland** had a score of seven of the risk factors. There were two SLAs classified as being high risk in this region. They were Berri and Barmera - Berri (eleven risk factors) and Renmark Paringa - Paringa (ten).

Hills Mallee Southern recorded the lowest score, with elevated scores for just three risk factors. None of the SLAs were classified as high risk; however, the SLAs of Murray Bridge (nine risk factors), The Coorong (nine), Alexandrina - Coastal (eight) and Southern Mallee (eight) were all just below the high risk level of ten risk factors.

Map 6.4
Perinatal risk factor scores, South Australia, 2000 to 2002



Summary risk factor score*, by SLA

- *High risk of adverse perinatal outcome*
- *Not high risk*
- *data not mapped#*

*See text for details of risk factors and calculations of risk factor scores

#Data were not mapped because the SLA has a population of less than 100

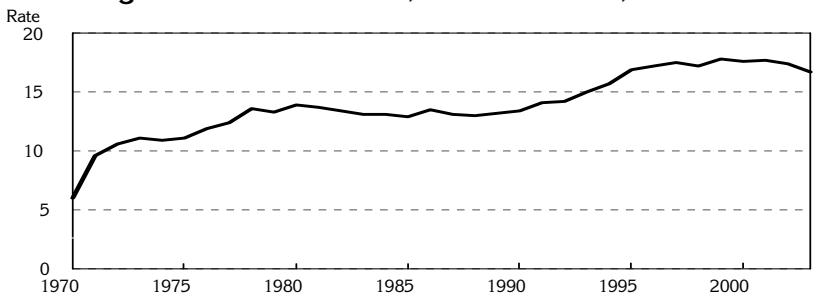
Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

A Social Health Atlas of South Australia, 2006

Termination of pregnancy, 2000 to 2002

The number of terminations per 1,000 women aged 15 to 44 years (the abortion rate) rose quickly from 1970 and was generally stable through the 1980s, before rising again to 16.6 per 1000 women at these ages in 1995. The rate has stabilised since then, and in 2003, it was 16.7 (Figure 6.1). The highest abortion rates were recorded for women in the 20 to 24 year age group (27.4% of terminations in 2002, 31.0% in 1985 to 1987), followed by those under 20 years (23.1% in 2002, 24.6% in 1985 to 1987). Since 2001, there has been a decline in the abortion rate: down to 15.9 per 1000 women aged 15 to 44 years in 2004, with falls in all age groups compared with the rates in 2003.

Figure 6.1: Abortion rate, South Australia, 1970 to 2003



Source: Pregnancy Outcome in South Australia, 2002, SA Dept of Health

Between 1985 to 1987 and 2000 to 2002, the abortion rate increased by nearly one-third (29.3%) (Table 6.4).

Table 6.4: Termination of pregnancy

Age standardised abortion rate per 1,000 females aged 15 to 44 years

Area	1985-1987	1990-1992	2000-2002	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	14.7	15.3	18.8	27.6
Country	10.1	10.0	13.2	30.6
South Australia	13.5	14.0	17.5	29.3

[1]**Per cent change over 15 years in abortion rates**

Metropolitan regions

There were 13,402 terminations of pregnancy in the metropolitan regions (excluding Gawler) in 2000 to 2002, seven per cent more than expected from the State rates (a standardised ratio (SR) of 107**, 13,402) (Table 6.5). The areas with high termination ratios (Map 6.5) follow the pattern of low socioeconomic status.

High rates of termination of pregnancy were very strongly correlated with the indicators for receiving an unemployment benefit or a Disability Support Pension, the unemployment rate, jobless families, low income families, premature male deaths, avoidable mortality, outpatient attendances, children in welfare-dependent and other low income families and community mental health clients. These results, together with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between socioeconomic disadvantage and termination of pregnancy (Table 8.1).

Central Northern Adelaide

Residents of Central Northern had 13% more terminations than expected from the State rates (an SR of 113**, 10,016 terminations), with over two thirds more terminations than expected in Port Adelaide Enfield - Port (169**, 473). Highly elevated ratios were also recorded in Playford - Elizabeth (157**, 449), Charles Sturt - North-East (149**, 442) and - Inner East (145**, 347), Salisbury - Central (140**, 468) and Balance (139**, 101), Adelaide (137**, 297), Salisbury - Inner North (131**, 426), Port Adelaide Enfield - Inner (129**, 284), Playford - West Central (126**, 200) and Port Adelaide Enfield - Coast (125**, 367).

Large numbers of terminations were recorded in Salisbury - South-East (419 terminations, an SR of 106), Port Adelaide Enfield - East (384, 116**), West Torrens - West (363, 118**), Charles Sturt - Coastal (356, 113) and Tea Tree Gully - South (351, 92).

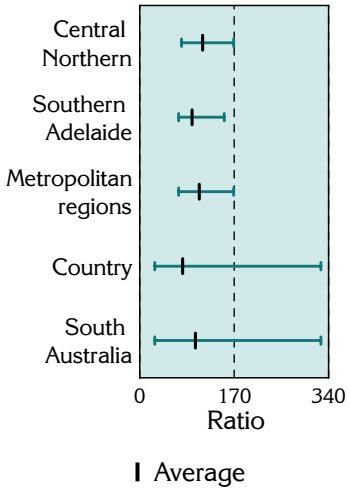
Southern Adelaide

There were 3,385 terminations of pregnancy in the Southern region, six per cent fewer than expected from the State rates (an SR of 94**). Onkaparinga - North Coast had 52% more terminations than expected (an SR of 152**, 275 terminations). Elevated ratios were also recorded for the Onkaparinga SLAs of - Hackham (120*, 200) and - South Coast (113*, 292). The Marion SLAs of - Central (331 terminations, an SR of 97) and Marion - North (304, 108) had large numbers.

The majority of SLAs with the lowest rates were located in Southern, including Onkaparinga - Reservoir (an SR of 70**, 203 terminations), Mitcham - Hills (73**, 188), Marion - South (75**, 182), Onkaparinga - Hills (76*, 77) and Mitcham - North-East (79**, 127).

* **indicates statistical significance: see page 24**

Map 6.5
Termination of pregnancy, metropolitan regions, 2000 to 2002

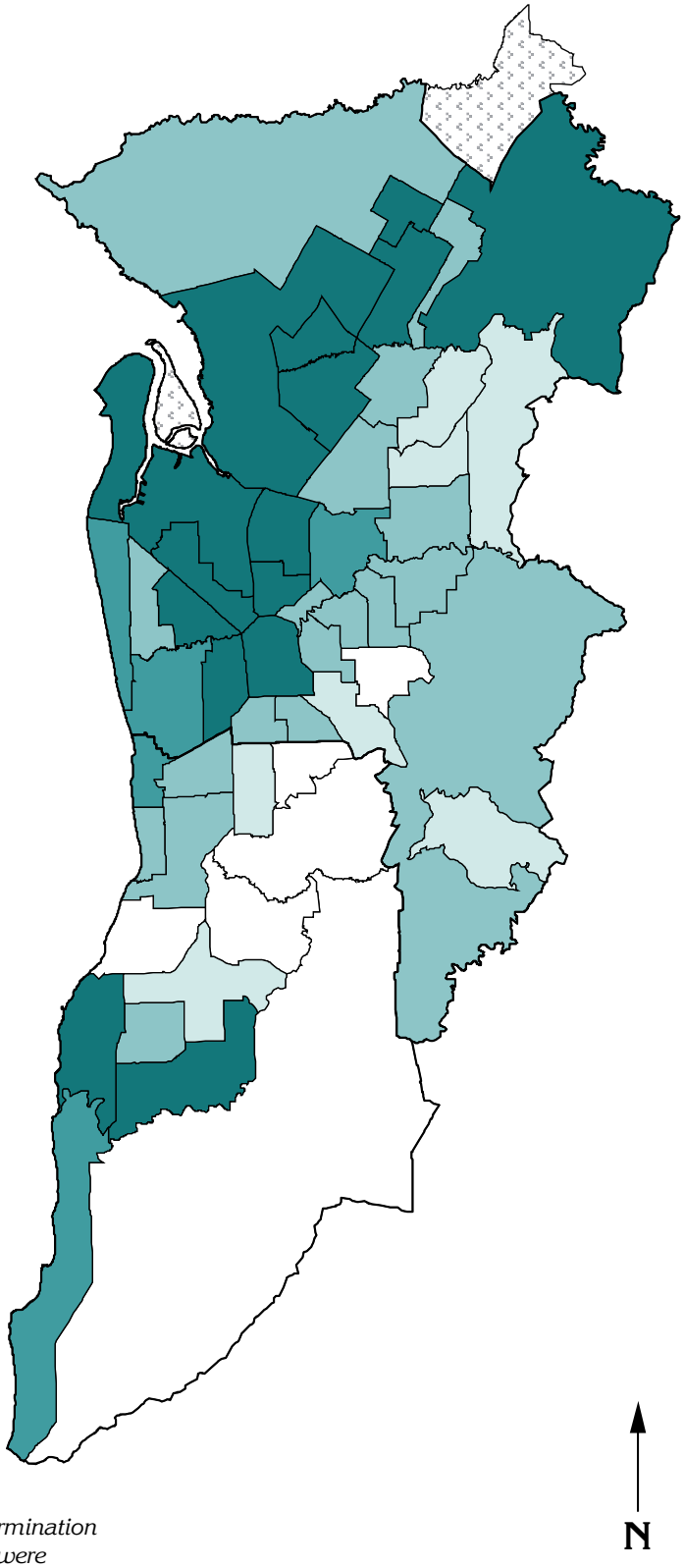


Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped*#



*Index shows the number of women in the SLA having a termination compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

There were 3,097 terminations of pregnancy in country South Australia, 33% fewer than expected from the State rates (a standardised ratio (SR) of 77**) (Table 6.5), with SLAs in the country typified by very low ratios (Map 6.6).

The reason for the low overall abortion rate is not clear. It may represent the actual situation, of fewer terminations to country residents; it is also possible that women are giving a metropolitan address to the provider, possibly to protect their privacy. Data purchased from the Health Insurance Commission for Medicare item numbers which include terminations of pregnancy showed there were few terminations for South Australian women occurring outside the State.

Table 6.5: Regional totals, termination of pregnancy, 2000 to 2002

Region	No.	Ratio
Hills Mallee Southern	861	85**
Wakefield[1]	713	81**
South East	437	68**
Northern & Far Western	433	77**
Eyre	224	69**
Mid North	172	63**
Riverland	258	78**
Country SA	**3,097**	**77****
Central Northern	10,016	113**
Southern	3,385	94**
Metropolitan regions	**13,402**	**107****
South Australia	**16,499**	**100**

[1]**Gawler is included in Wakefield region**

Termination of pregnancy was strongly correlated with receiving a Disability Support Pension, jobless families and Child and Adolescent Mental Health Service clients. These results, together with the weak inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between socioeconomic disadvantage and termination of pregnancy (Table 8.2).

The Regions

Hills Mallee Southern had the highest standardised ratio, although it was 15% below the level expected from the State rates (an SR of 85**, 861 terminations). There were low ratios in Alexandrina - Strathalbyn (59**, 42 terminations), Adelaide Hills - North (66**, 42), Kangaroo Island (69, 24), The Coorong (72*, 37), Southern Mallee (76, 14), Yankalilla (77, 23) and Mid Murray (78, 53).

Wakefield had nearly 20% fewer terminations than expected (an SR of 81**, 713 terminations). There were a number of SLAs with particularly low ratios, including Yorke Peninsula - North (48**, 23 terminations), Barossa - Tanunda (59**, 25) and Barossa - Angaston (60**, 46), Light (61**, 65), Clare and Gilbert Valleys (61**, 43), Wakefield (68*, 38), Copper Coast (72*, 61), Goyder (73, 25) and Barossa - Barossa (78, 51).

Riverland had a ratio of 78 (258 terminations). The lowest ratio in this region had nearly half the number of expected terminations, with 51** calculated for Loxton Waikerie - East (36 terminations). There were also low ratios in Loxton Waikerie - West (an SR of 73, 33 terminations) and Berri and Barmera - Barmera (78, 31).

There were 433 terminations recorded for women in **Northern and Far Western** (an SR of 77**), with considerable variation at the SLA level (see graph opposite). Unincorporated Far North had approximately one quarter of the expected number (27**, 20 terminations), followed by Flinders Ranges (57, eight) and Port Augusta (71**, 106).

The SLAs in **Eyre** had small numbers, with low ratios calculated for Cleve (an SR of 40*, six terminations), Tumby Bay (40*, seven), Lower Eyre Peninsula (43**, 15), Streaky Bay (49*, eight) and Elliston (53, five). The region had 31% fewer terminations than expected (69**, 224).

There were 437 terminations recorded for **South East** (an SR of 68**). Low ratios were recorded for women in Naracoorte and Lucindale (51**, 42 terminations), Wattle Range - West (52**, 45), Grant (56**, 41), Wattle Range - East (62*, 21), Tatiara (66**, 44) and Mount Gambier (79**, 216).

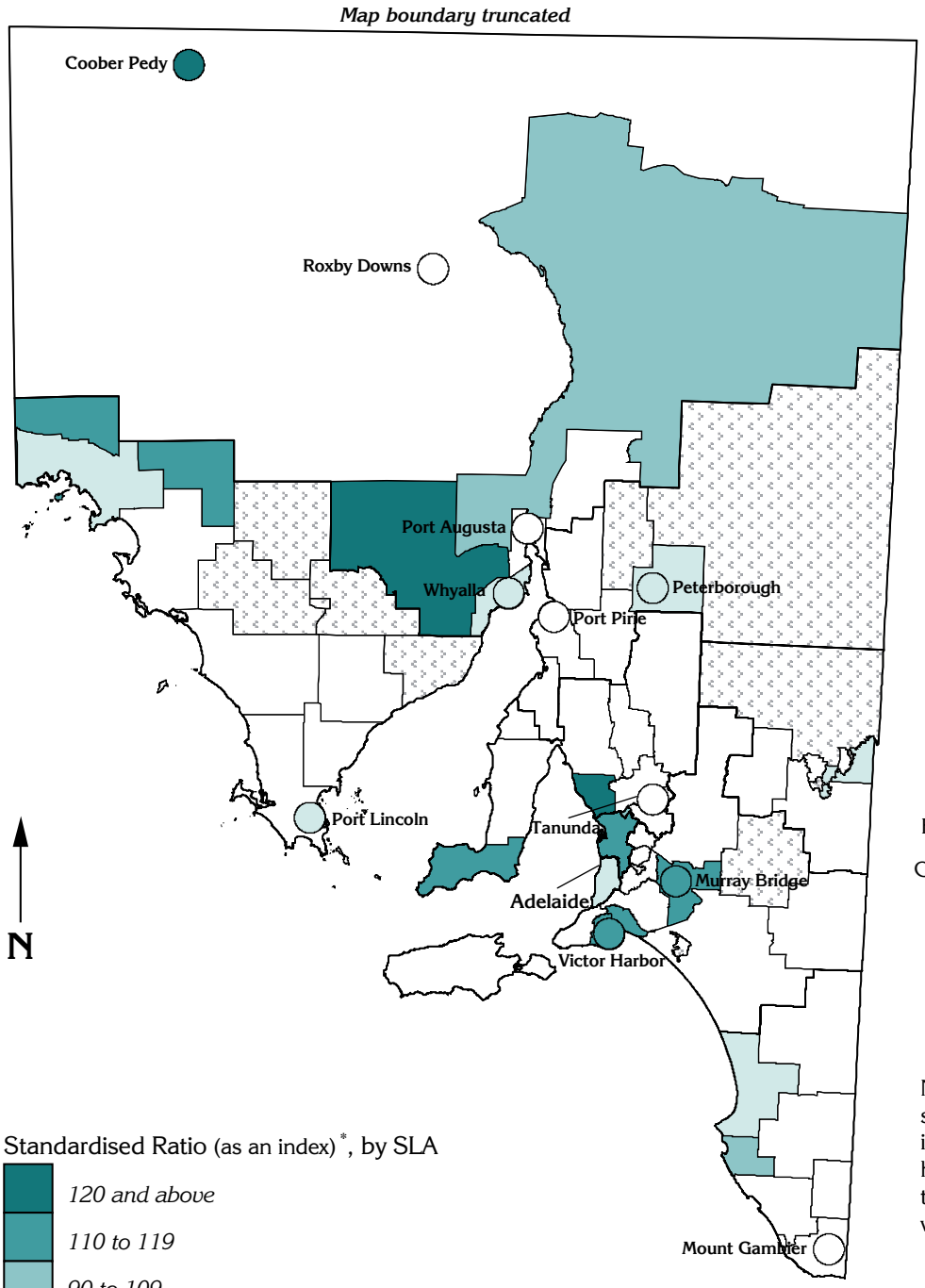
The lowest regional ratio was calculated for **Mid North**, with 27% fewer terminations than expected (an SR of 63**, 172 terminations). Within this region, there were low ratios in Barunga West (44*, eight terminations), Port Pirie Balance (44**, 13), Mount Remarkable (48*, eleven), Port Pirie City (67**, 94) and Northern Areas (70, 27 terminations).

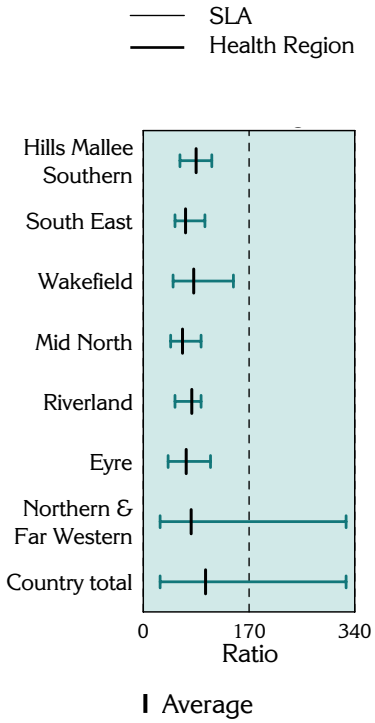
ASGC Remoteness Classification

There was a gradient across the remoteness areas, with the highest ratio calculated for the Major Cities class (an SR of 107**, 13,360 terminations) and a low ratio, of 64**, in the Very Remote areas (99 terminations).

* **indicates statistical significance: see page 24**

Map 6.6
Termination of pregnancy, South Australia, 2000 to 2002





Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

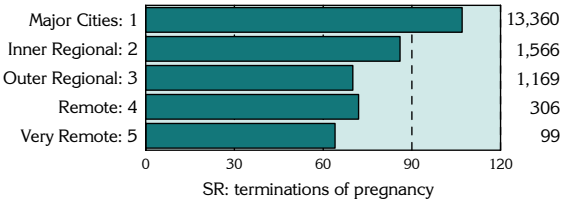
Standardised Ratio (as an index) *, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped#*

*Index shows the number of women in the SLA having a termination compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100 or there were fewer than five terminations

ASGC Remoteness classification Women



Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Smoking during pregnancy, 1998 to 2001

Maternal smoking during pregnancy has many consequences before and after delivery, such as preterm birth, miscarriage and perinatal death, low birthweight, and infants being smaller at birth than they should be. These problems may affect children through to adulthood, including a higher risk of disability and developmental delay, obesity, decreased lung function and increased respiratory illness (NHMRC 1997; Wideroe et al. 2003). The data presented here were provided by hospital and homebirth midwives through the Perinatal Statistics Collection, conducted by the Pregnancy Outcome Unit, Epidemiology Branch, South Australian Department of Health.

Over a quarter of pregnant women smoked during their pregnancy in country South Australia (26.2%), a higher percentage than in Metropolitan Adelaide (21.8%) (see Table 6.6). Over the period 1998 to 2001, the proportion of pregnancies during which women reported smoking declined from 25.0% to 21.8%; but the proportion for Indigenous women was much higher, being over half, and increased over the same period from 56.0% to 59.7% (Hetzel et al. 2004).

Table 6.6: Smoking during pregnancy, 1998 to 2001

Area	No.	Per cent
Metropolitan Adelaide (incl. Gawler)	11,005	21.8
Country	5,553	26.2
South Australia	16,558	23.2

Metropolitan regions

From 1998 to 2001, 10,794 women in the Metropolitan regions (excluding Gawler) reported smoking during a pregnancy, six per cent fewer than expected from the State rates (a standardised ratio (SR) of 94**) (Table 6.7). The highest rates of smoking during pregnancy were found in the outer northern, outer southern and north-western SLAs (Map 6.7), with considerable variation in both regions (see graph opposite).

High rates of smoking during pregnancy were very strongly correlated at the SLA level with high proportions of female sole parent pensioners; unskilled and semi-skilled workers; attendance at Accident and Emergency departments; Indigenous status; the unemployment rate; living in a jobless, low income or single parent family; and with high rates of admission to public acute hospitals and GP services, and high proportions of low birthweight babies. The very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage also indicates a strong association at the SLA level between smoking during pregnancy and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

In Central Northern, 8,097 women reported smoking during a pregnancy, two per cent fewer than expected from the State rates (an SR of 98*). The SLAs with elevated rates of smoking during pregnancy included Playford - Elizabeth (an SR of 160**, 797 pregnancies), Playford - West Central (145**, 357) and - East Central (133**, 387), Salisbury - Inner North (127**, 510), Port Adelaide Enfield - Coast (124**, 351), Port Adelaide Enfield - Port (122**, 431) and Playford - Hills (122, 55).

There were large numbers of women smoking during a pregnancy living in Port Adelaide Enfield - East (339 pregnancies, an SR of 106), Tea Tree Gully - South (313, 88*), Charles Sturt - North-East (311, SR of 104), Tea Tree Gully - Central (268, SR of 92), and Charles Sturt - Inner West (215, SR of 97) and - Inner East (213, SR of 94).

The SLAs with the lowest rates of smoking during pregnancy largely form a block across Adelaide's middle SLAs. They include Unley - East (an SR of 37**, 65 pregnancies), Burnside - South-West (38**, 49), Norwood Payneham St Peters - West (44**, 63), Walkerville (48**, 24), Unley - West (50**, 75), Burnside - North-East (50**, 68), and Adelaide Hills - Central (54**, 57) and - Ranges (56**, 53).

Southern Adelaide

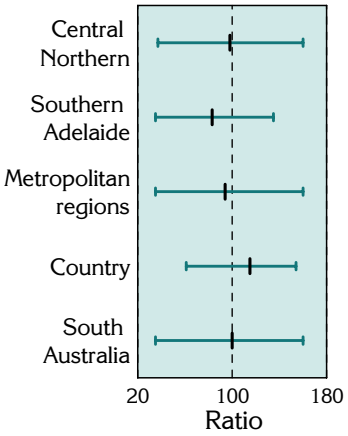
In Southern region, there were 17.0% fewer women who reported smoking during a pregnancy than expected (an SR of 83**, a total of 2,696 women). The SLAs in the south with elevated ratios were Onkaparinga - North Coast (an SR of 135**, 299 pregnancies) and Onkaparinga - Hackham (125**, 234).

Large numbers of women who reported smoking were recorded in the Onkaparinga SLAs of - Woodcroft (357 pregnancies, an SR of 85**), - Morphett (341, an SR of 95) and - South Coast (310, 108), as well as in Marion - Central (231, 86*).

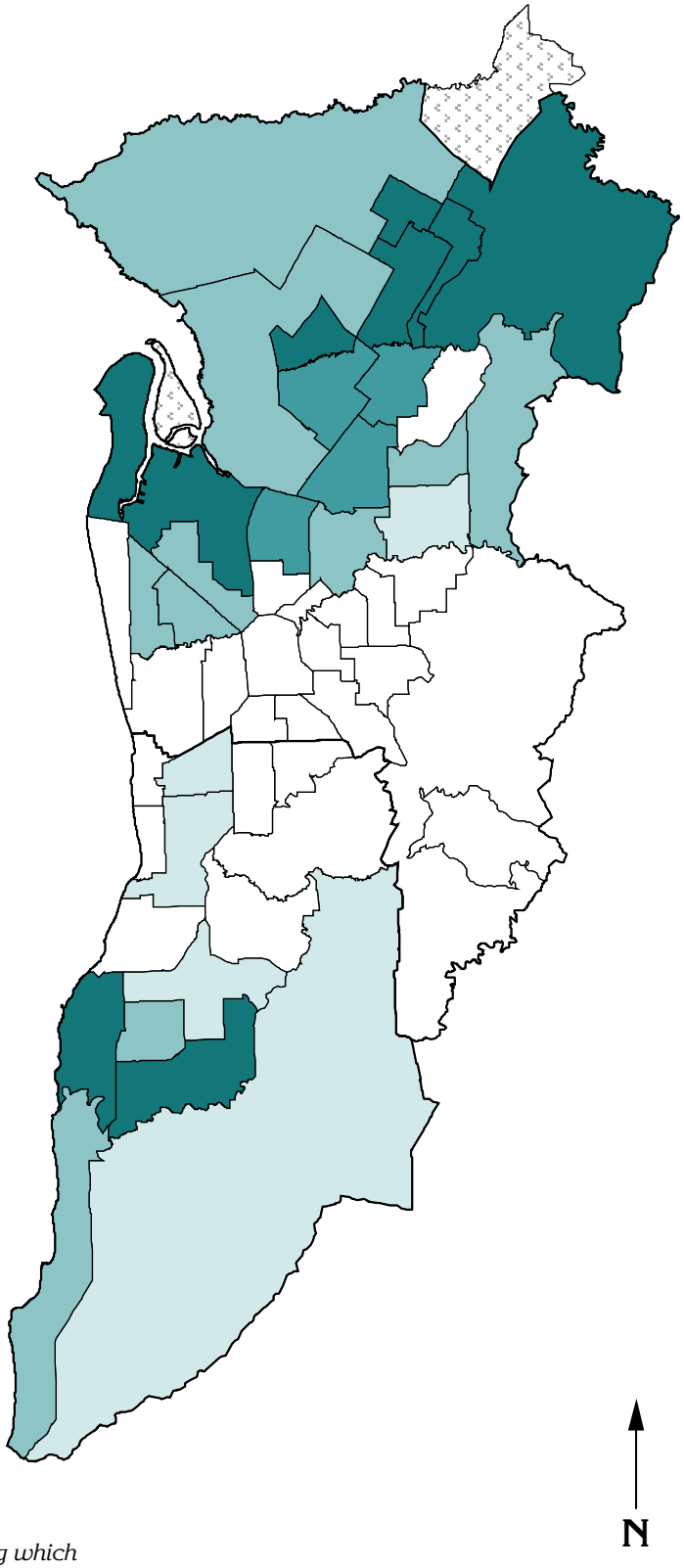
There were well below average rates of smoking during pregnancy in the SLAs of Mitcham North-East (an SR of 35**, 32 pregnancies), - Hills (38**, 68) and - West (53**, 108).

* **indicates statistical significance: see page 24**

Map 6.7
Smoking during pregnancy, metropolitan regions, 1998 to 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped#*

*Index shows the number of pregnancies, in the SLA, during which women reported smoking, compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Country South Australia

From 1998 to 2001 in country South Australia, there were 5,764 women who reported smoking, 15% more than expected from the State rates (a standardised smoking ratio (SR) of 115**).

A number of SLAs throughout the State had ratios in the highest range (Map 6.8), particularly those in the far north and west of the State, along the eastern edge of **Eyre** and in parts of **Mid North**, **Hills Mallee Southern** and **South East**. There was also considerable variation within most regions (see graph opposite).

Table 6.7: Regional totals, smoking during pregnancy, 1998 to 2001

Region	No.	Ratio
Hills Mallee Southern	1,244	105
Wakefield[1]	1,084	109**
South East	911	115**
Northern & Far Western	915	124**
Eyre	589	125**
Mid North	425	108
Riverland	597	135**
Country SA	**5,764**	**115****
Central Northern	8,097	98*
Southern	2,696	83**
Metropolitan regions	**10,794**	**94****
South Australia	**16,558**	**100**

[1]**Gawler is included in Wakefield region**

Smoking during pregnancy was strongly correlated with lung cancer. It was also consistently weakly correlated with a number of the indicators of disadvantage including the Index of Relative Socio-Economic Disadvantage, suggesting an association between smoking during pregnancy and socioeconomic disadvantage at the SLA level (Table 8.2).

The Regions

The most highly elevated ratio, with 35% more women than expected smoking during pregnancy, was recorded in **Riverland** (an SR of 135**, 597 pregnancies). Within this region, there were highly elevated ratios in Berri and Barmera - Berri (an SR of 150**, 158 pregnancies) and - Barmera (150**, 80), Loxton Waikerie - East (129**, 117), Renmark Paringa - Renmark (127**, 132) and Loxton Waikerie - West (125*, 81).

Eyre also had an elevated ratio at the regional level (an SR of 125**, 589 pregnancies). SLAs with highly elevated ratios in this region included Unincorporated West Coast (an SR of 141, 23 pregnancies), Ceduna (139**, 104), Franklin Harbor (139, 17), Kimba (136, 16), Port Lincoln (128**, 270), Cleve (125, 33), Lower Eyre Peninsula (123, 52) and Tumby Bay (121, 24). Le Hunte had 39% fewer than the expected number of pregnancies during which women smoked (an SR of 61, eleven pregnancies).

There were 915 women who smoked during pregnancy in **Northern and Far Western** (an SR of 124**), with highly elevated ratios in Coober Pedy (153**, 44 pregnancies), Port Augusta (140**, 311 pregnancies), Unincorporated Flinders Ranges (an SR of 129, 18 pregnancies) and Unincorporated Far North (120, 54 pregnancies). There were 385 pregnancies in which women smoked in Whyalla (an SR of 115**).

South East had a standardised smoking ratio of 115** (911 pregnancies). There were highly elevated rates of smoking during pregnancy in Lacepede (an SR of 154*, 35 pregnancies) and Wattle Range - West (142**, 157); and a 23% lower ratio in Robe (77, 12). Relatively large numbers of women smoking during pregnancy were recorded in Mount Gambier (341 pregnancies, an SR of 108), Tatiara (112 pregnancies, 112), Naracoorte and Lucindale (103 pregnancies, 109) and Grant (101 pregnancies, 111).

In **Wakefield,** 1,084 women reported smoking during a pregnancy (an SR of 109**). Elevated ratios were found in Mallala (131**, 109) and Wakefield (129*, 85). Gawler (211 pregnancies, 106), Light (125, 116) and Copper Coast (123, 116) had relatively large numbers of these cases.

Women in **Mid North** reported smoking during a pregnancy at a similar rate to those in **Wakefield**, with an SR of 108 (425 pregnancies); significantly elevated ratios were calculated for Barunga West (153*, 34) and Peterborough (150*, 34). There were 223 pregnancies during which women smoked in Port Pirie - City (an SR of 105).

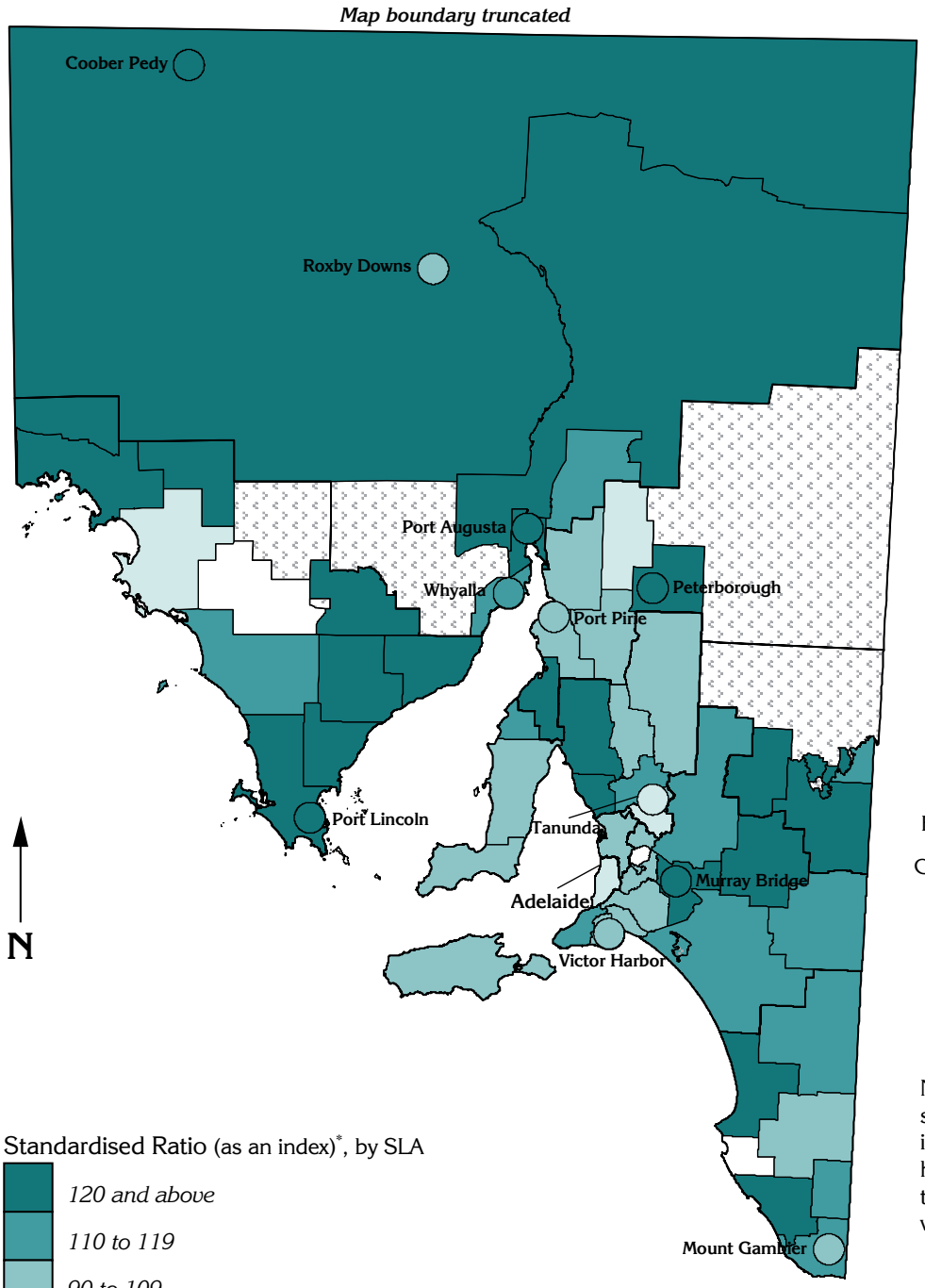
In **Hills Mallee Southern** region, 1,244 women reported smoking during pregnancy, five per cent more than expected from the State rates (105). There were elevated ratios in Karoonda East Murray (an SR of 142, 17 pregnancies) and Murray Bridge (131**, 325); and 36% fewer than expected women smoked during pregnancy in Adelaide Hills Balance (an SR of 64**, 63). Mount Barker - Central had 180 pregnancies in this category (an SR of 93).

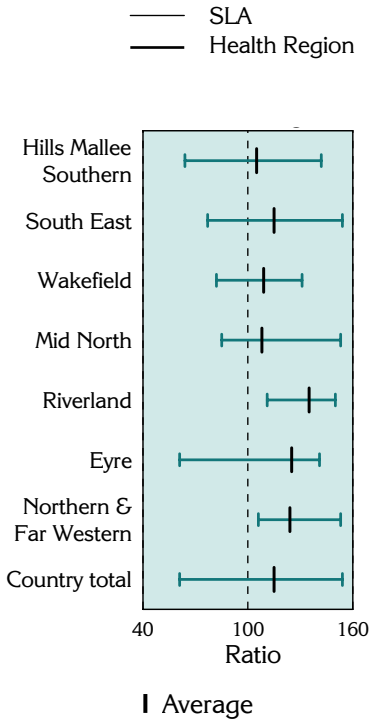
ASGC Remoteness classification

Rates of smoking during pregnancy increased with increasing remoteness in South Australia, with ratios above 100 for all the remoteness classes except Major Cities (with an SR of 94**). In the Inner Regional areas, there was a ratio of 105*, with ratios of 120** in Outer Regional, 119** in Remote and 128** in Very Remote.

* **indicates statistical significance: see page 24**

Map 6.8
Smoking during pregnancy, South Australia, 1998 to 2001





Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

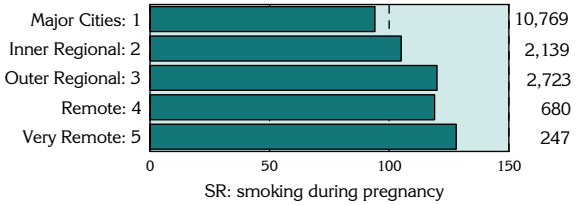
Standardised Ratio (as an index)*, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped#*

*Index shows the number of women smoking during pregnancy in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100 or there were fewer than five cases

ASGC Remoteness classification Women



Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Immunisation status of children at 12 months of age, 2002

Immunisation coverage among Australian children is an important public health issue. If a sufficiently large proportion of children have been immunised against a particular infectious disease, then the potential for that disease to spread is greatly reduced. Immunisation data are collected by the Health Insurance Commission, which has maintained the Australian Childhood Immunisation Register (ACIR) since 1996. The ACIR provides comprehensive information on the immunisation status of children less than seven years of age in Australia. These data are used to provide a measure of coverage at a national, State/Territory and local level. By mid-1998, the register had sufficient coverage to be used for small area analysis. The data presented here are of children fully immunised at age 12 months. The proportion of immunisation coverage is similar in Metropolitan Adelaide and country South Australia in both periods, as was the rate at which coverage improved (Table 6.8).

Table 6.8: Immunisation status of children at 12 months of age

Per cent

Area	1998	2002	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	84.5	94.7	12.1
Country	83.6	94.4	12.9
South Australia	84.2	94.6	12.4

[1]**Per cent change over four years in the proportion of fully immunised children**

In the process of converting the data from postcode of address to SLA, misallocation of immunisation data may result in some SLAs having higher percentages than would be the case if accurate address data were available.

Metropolitan regions

Immunisation coverage of children at 12 months of age in the metropolitan regions (excluding Gawler) in 2002 was 94.7% (11,653 children) (Table 6.9).

Hull et al. (2002) found that, among other things, demographic factors "impacted on immunisation status. Children in larger, lower income families and families with a health care card were less likely to be age-appropriately immunised." This suggests an association between disadvantage and lower immunisation rates, a contention generally supported by the results of the correlation analysis undertaken here. This analysis shows a generally weak association between good immunisation coverage and indicators of advantage. There was a strong inverse correlation with the unemployment rate, and weak correlations with other indicators of disadvantage at the SLA level (Table 8.1). These inverse correlations suggest that children in these population groups have lower immunisation rates.

Central Northern Adelaide

The majority (94.6%) of 12 month old children in Central Northern were fully immunised, with a similar rate in Southern region (95.0%). The SLAs with the highest immunisation rates were Tea Tree Gully - North (98.5%, 369 children), Charles Sturt - Inner West (97.4%, 223), Campbelltown - East (97.1%, 290), Charles Sturt - Inner East (97.0%, 238), Tea Tree Gully - Hills (96.9%, 145), West Torrens - West (96.5%, 265), Campbelltown - West (96.2%, 196) and Playford - Hills (96.2%, 45).

There were also large numbers of fully immunised children at 12 months in the SLAs of Salisbury - South-East (431 children, 94.3%), Salisbury - Central (364, 95.1%), Tea Tree Gully - South (347, 95.4%), Salisbury - Inner North (324, 94.6%) and Port Adelaide Enfield - East (323, 95.7%).

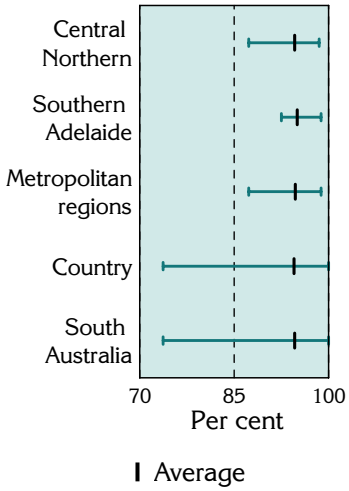
The SLAs with the lowest immunisation rates of 12 month-olds in Central Northern were Adelaide (87.3%, 76 children) and Playford - Elizabeth (88.4%, 371). Other SLAs with rates below average for the region – but not greatly so – were Playford - West Central (91.9%, 210), Port Adelaide Enfield - Inner (92.1%, 237), Adelaide Hills - Central (92.6%, 131), Adelaide Hills - Ranges (92.8%, 114), Prospect (92.9%, 219), Playford - West (93.0%, 97), Walkerville (93.8%, 65), Port Adelaide Enfield - Port (93.8%, 302) and Burnside - South-West (93.9%, 160).

Southern Adelaide

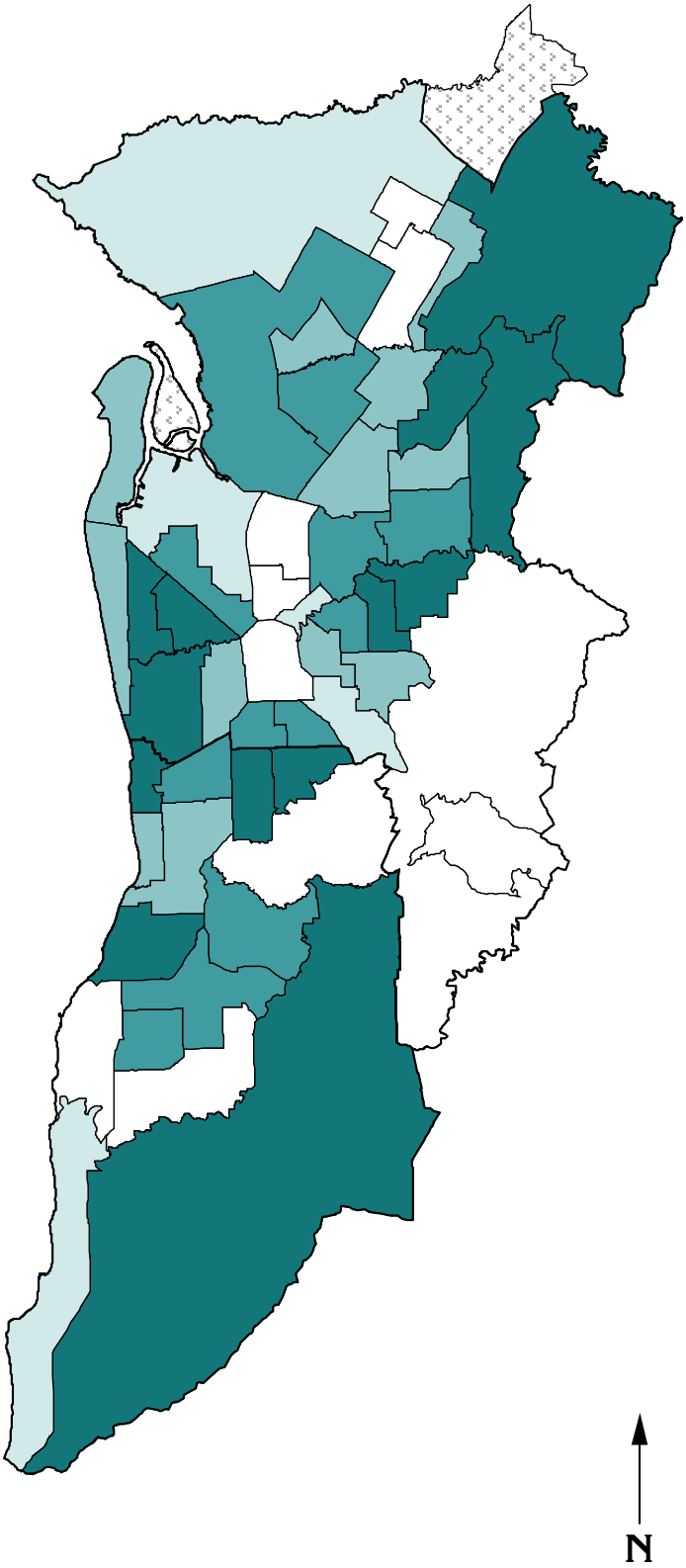
The highest proportions of fully immunised 12 month old children (with an overall rate of 95.0%) were located in Marion - South (98.8%, 232), Onkaparinga - Hills (96.1%, 105), Holdfast Bay - North (96.1%, 157), and Mitcham - North-East (96.0%, 116) and - West (96.0%, 225); and Onkaparinga - Woodcroft (412 children, 95.3%) and - Morphett (342, 95.2%) had large numbers of fully immunised children.

The lowest proportions of fully immunised children were in Onkaparinga - North Coast (92.5%, 187), Onkaparinga - Hackham (92.6%, 165), Mitcham - Hills (92.9%, 216) and Onkaparinga - South Coast (93.3%, 277).

Map 6.9
Immunisation status of children at 12 months of age, metropolitan regions, 2002



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent fully immunised children, by SLA

- *96.0% or more*
- *95.0 to 95.9%*
- *94.0 to 94.9%*
- *93.0 to 93.9%*
- *fewer than 93.0%*
- *data not mapped*[#]

[#]*Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map*

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

The level of coverage in country South Australia was 94.5%, with 5,004 children fully immunised at 12 months of age (Table 6.9). There are major variations across the State, with immunisation rates ranging from a low of 73.7% in Coober Pedy (16 children) to 100.0% in a number of SLAs (see page 23 in Chapter 2 regarding these percentages), but all with small numbers of cases (Map 6.10).

Table 6.9: Regional totals, immunisation status of children at 12 months of age, 2002

Region	No.	%
Hills Mallee Southern	1,251	94.1
Wakefield[1]	1,089	95.6
South East	819	94.7
Northern & Far Western	625	93.4
Eyre	446	94.5
Mid North	372	96.3
Riverland	402	92.8
Country SA	**5,004**	**94.5**
Central Northern	8,308	94.6
Southern	3,338	95.0
Metropolitan regions	**11,653**	**94.7**
South Australia	**16,657**	**94.6**

[1]**Gawler is included in Wakefield region**

The correlation analysis shows a weak association at the SLA level between low immunisation rates and socioeconomic disadvantage. Of particular note are the strong inverse correlations between high immunisation rates and the population born in predominantly non-English speaking countries (and resident for five years or more), and those in this group (regardless of length of residence) with poor proficiency in English, suggesting that these groups have lower immunisation rates (Table 8.2).

The Regions

Mid North had the highest proportion of children fully immunised at 12 months (96.3%, 372 children). The SLAs of Barunga West (22 children), Orroroo/Carrieton (eight children) and Peterborough (16 children) had all achieved 100% coverage (see the note on the previous text page about misallocation of data to SLA). There were also high rates in Mount Remarkable (99.2%, 28 children) and Port Pirie Balance (97.3%, 43). Port Pirie - City had 194 fully immunised children (95.0%).

In **Wakefield**, 95.6% of the 1,089 children were fully immunised, with the highest rates in Barossa - Tanunda (98.3%, 53 children), Clare and Gilbert Valleys (97.3%, 107), Gawler (97.1%, 227), Barossa - Barossa (96.6%, 91), Copper Coast (96.5%, 110) and Wakefield (96.0%, 68); and lower proportions in Mallala (90.1%, 85 children) and Yorke Peninsula - North (92.4%, 66).

In **South East,** 819 children were fully immunised at 12 months of age, 94.7% of this age group. Very high immunisation rates were recorded in Robe (99.9%, 17 children) and Lacepede (99.5%, 29); and large numbers in Mount Gambier (311, 94.9%), Wattle Range - West (118, 93.1%) and Tatiara (103, 95.0%).

There was more variation in rates within **Eyre**, with an overall rate of 94.5% (446 children). Franklin Harbor and Kimba (both with 12 children) and Streaky Bay (23 children) all had rates of 100%, compared to Unincorporated West Coast (13 children), with a lower immunisation rate (88%). There were also high rates in Cleve (99.6%, 34) and Tumby Bay (96.2%, 29); and lower rates in Ceduna (88.6%, 58) and Elliston (92.7%, 13). Port Lincoln had the largest number of children (198, 94.4%).

There were 1,251 children fully immunised at 12 months in **Hills Mallee Southern** (94.1%). Southern Mallee had a 100% immunisation rate (28 children), followed by Karoonda East Murray (99.6%, 13), Yankalilla (96.7%, 35) and Adelaide Hills Balance (96.5%, 105). There were large numbers of fully immunised children in Murray Bridge (94.2%, 217), Mount Barker - Central (93.8%, 215) and Adelaide Hills Balance (96.5%, 105). The lowest immunisation rates in this region were in Alexandrina - Strathalbyn (90.9%, 94), Mid Murray (92.7%, 75) and Victor Harbor (92.8%, 92).

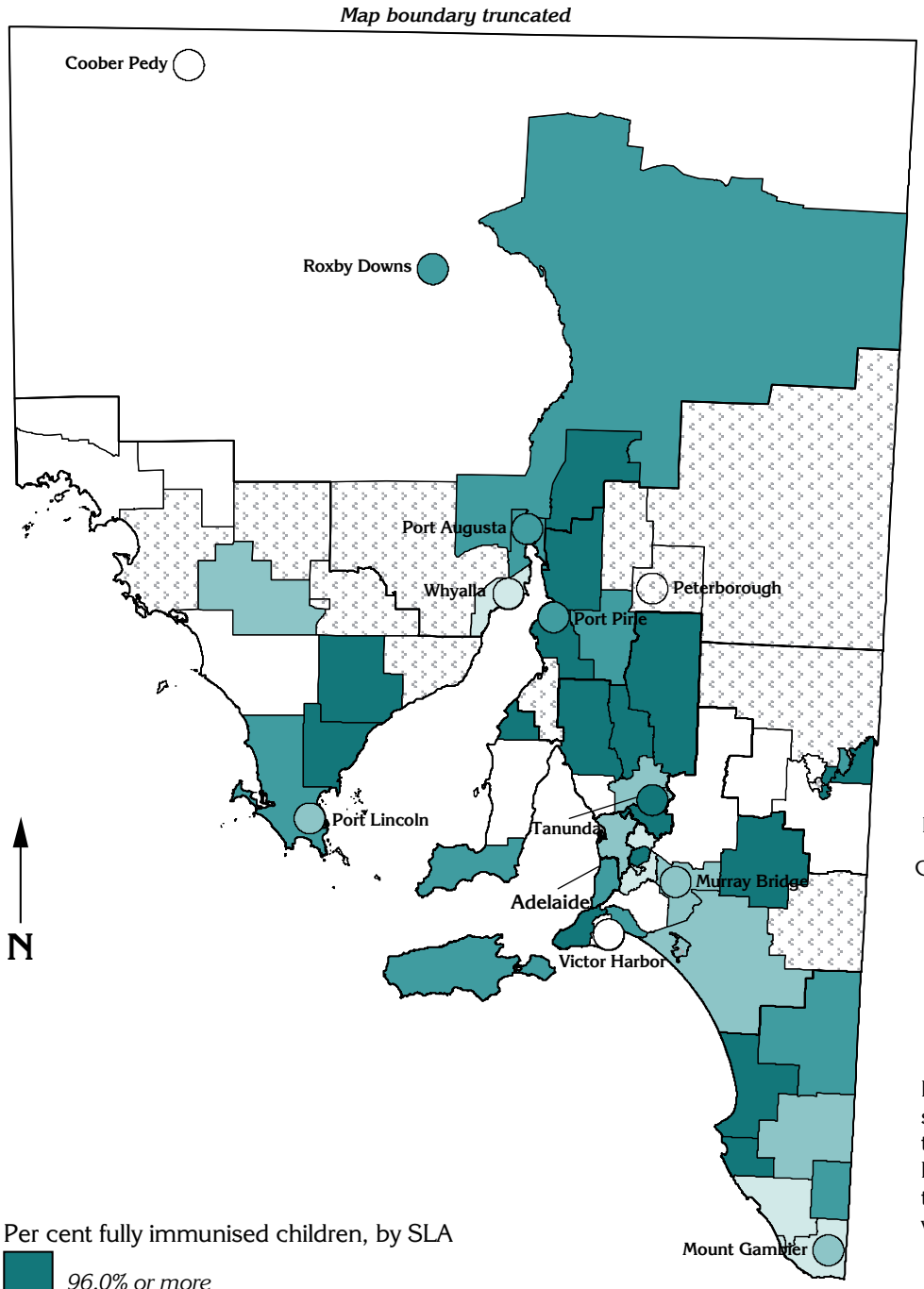
The overall level of immunisation in **Northern and Far Western** at 12 months of age was 93.4% (625 children), although the rate varied substantially (see graph opposite) with the highest level in Flinders Ranges (99.9%, 17), and lows of 73.7% (16 children) in Coober Pedy and 88.7% (52 children) in Unincorporated Far North (88.7%, 52). Whyalla (263 children, 93.2%) and Port Augusta (163, 95.9%) had large numbers of fully immunised children.

In **Riverland**, 92.8% of children were fully immunised at 12 months of age (402 children). SLAs with the highest rates were Renmark Paringa - Paringa (98.7%, 18 children) and Berri and Barmera - Berri (96.0%, 92). There were 100 fully immunised children in Renmark Paringa - Renmark (95.3%). The lowest rates were in the SLAs of Berri and Barmera - Barmera (87.6%, 58) and Loxton Waikerie - East (89.7%, 82) and - West (92.2%, 50).

ASGC Remoteness classification

The rate of immunisation was fairly consistent across the remoteness areas, ranging from 94.2% in Inner Regional (2,150 children) to 95.7% in Remote (623 children). The exception was Very Remote, with a relatively low proportion, of 88.6% (166 children).

Map 6.10
Immunisation status of children at 12 months of age, South Australia, 2002

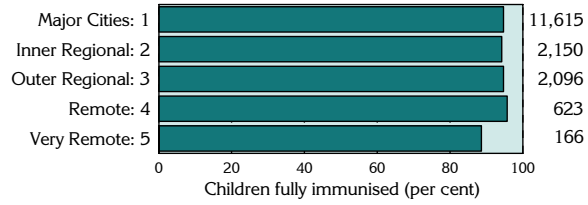


Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent fully immunised children, by SLA

- *96.0% or more*
- *95.0 to 95.9%*
- *94.0 to 94.9%*
- *93.0 to 93.9%*
- *below 93.0%*
- *data not mapped*[#]

[#]*Data were not mapped because the SLA has a population of less than 100 or there were fewer than five children*



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Overweight (not obese) four year old boys, 2000 to 2003

Overweight and obesity in childhood and adolescence can cause a wide range of physical and emotional health problems, and an increased risk of premature illness and death in adulthood. With almost one in six four year old children in South Australia being overweight or obese, Australian prevalence rates are high by international standards and represent a serious public health concern. Current rates in South Australia represent a dramatic increase since 1995, of around 70% for boys and girls at this age (Hetzel et al. 2004).

These data were provided by Child and Youth Health (CYH) who have, for a number of years, collected height and weight information for children aged from four years three months to five years (collectively referred to as four year old children in the text). The measurements are taken at child care and pre-school centres by staff of CYH, with an average coverage at these ages of 78.8%. As the numbers of children in the overweight and (in particular) the obese categories in any one year do not provide sufficient cases for mapping, several years have been grouped. The data for girls have not been shown because of concerns with data quality.

More than one in ten four year old boys, whose measurements were recorded, were assessed as being overweight (but not obese, referred to as 'pre-obese'), with a higher proportion in country South Australia (13.6%) than in Metropolitan Adelaide (11.3%) (Table 6.10)).

Table 6.10: Overweight (not obese) four year old boys, 2000 to 2003

Per cent

Area	No.	%
Metropolitan Adelaide (incl. Gawler)	1,902	11.3
Country	1,164	13.6
South Australia	3,066	12.1

Metropolitan regions

In the metropolitan regions (excluding Gawler), 11.3% of four year old boys were assessed as overweight (1,867 boys) (Table 6.11). Their geographic distribution (Map 6.11) is similar to the pattern of socioeconomic disadvantage; this is supported by the existence of weak correlations with a number of the indicators of disadvantage at the SLA level (Table 8.1).

Central Northern Adelaide

In Central Northern, 11.4% of four year old boys were classified as overweight (1,318 boys). High proportions were found in the SLAs of Port Adelaide Enfield - Coast (16.4%. 63 boys), Adelaide (16.3%, seven), Playford - West (14.9%, 28), and Charles Sturt - Inner West (13.8%, 42) and - Coastal (13.2%, 40). Relatively large numbers were also recorded in Salisbury - South-East (76 boys, 12.2%), Tea Tree Gully - North (73, 12.0%), Salisbury - Central (66, 11.0%), and Playford - Elizabeth (67, 11.5%) and - Inner North (61, 11.0%).

Low proportions of overweight four year old boys were recorded in Burnside - South-West (7.3%, 13 boys), Campbelltown - East (7.6%, 29), Adelaide Hills - Ranges (7.6%, 13), Unley - East and - West (both 8.5%, 19), Adelaide Hills - Central (8.5%, 19), Salisbury Balance (8.7%, ten) and Campbelltown - West (9.9%, 22).

Southern Adelaide

The proportion of overweight four year old boys in Southern (11.1%, 549 boys) was similar to that in Central Northern. The highest proportions in this region were mapped in the SLAs of Holdfast Bay - South (15.1%, 23 boys), Mitcham - Hills (14.1%, 46), Marion - South (13.0%, 45) and Holdfast Bay - North (12.3%, 23). Onkaparinga - Woodcroft had 75 boys classified as overweight (11.4%).

The Onkaparinga SLAs of - Hackham (5.4%, 16) and - North-Coast (8.3%, 23), both had relatively low proportions of overweight four year old boys.

The Regions

In country South Australia, there were 1,199 four year old boys classified as overweight, 13.5% of those measured. The highest proportions were in **Eyre** (15.7%, 96 boys), **South East** (14.6%, 239 boys) and **Mid North** (14.2%, 121), and the lowest in **Hills Mallee Southern** (11.2%, 234 boys).

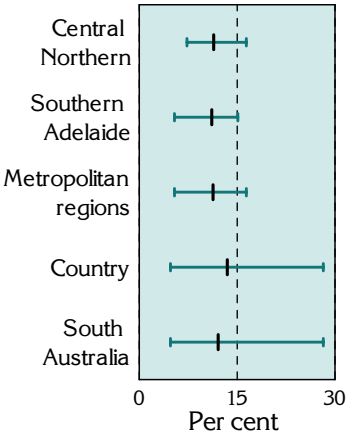
No consistent relationship was evident between overweight four year old boys and socioeconomic status in the correlation analysis at the SLA level (Table 8.2).

Table 6.11: Regional totals, overweight four year old boys, 2000 to 2003

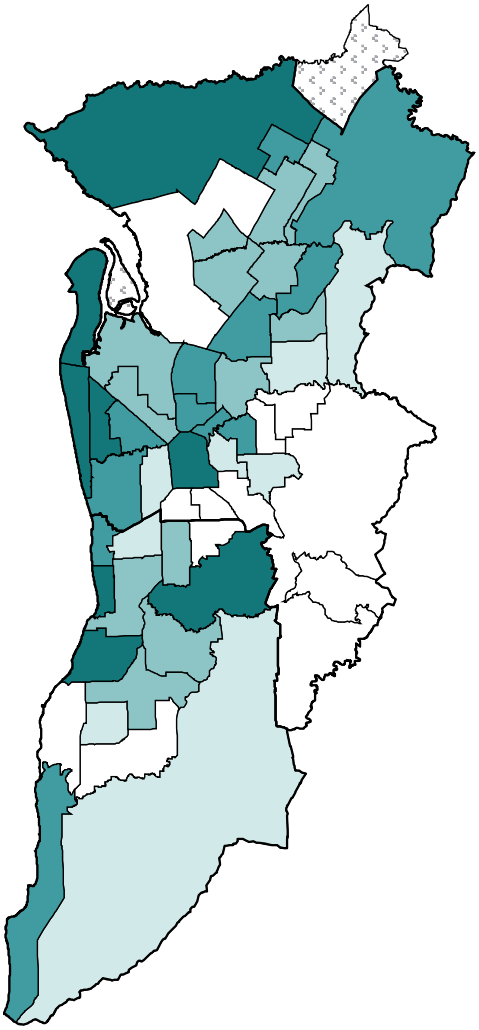
Region	No.	%
Hills Mallee Southern	234	11.2
Wakefield[1]	266	14.1
South East	239	14.6
Northern & Far Western	131	13.0
Eyre	96	15.7
Mid North	121	14.2
Riverland	114	14.1
Country SA	**1,199**	**13.5**
Central Northern	1,318	11.4
Southern	549	11.1
Metropolitan regions	**1,867**	**11.3**
South Australia	**3,066**	**12.1**

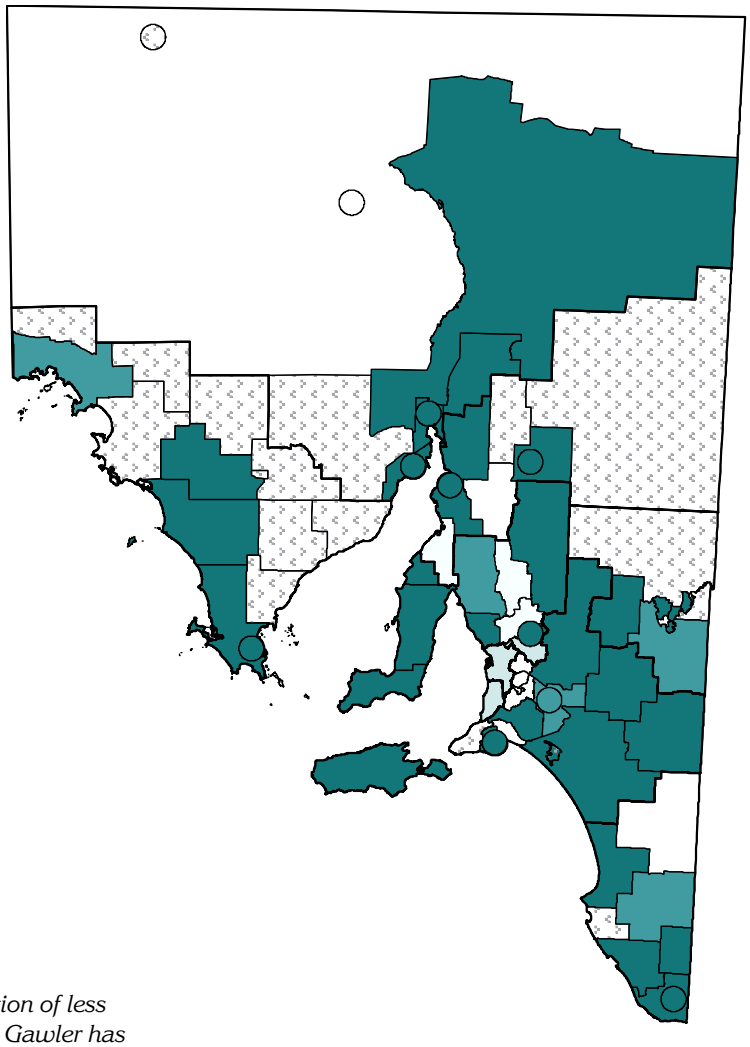
[1] **Gawler is included in Wakefield region**

Map 6.11
Overweight (not obese) four year old boys, 2000 to 2003



Note: The black vertical lines show the average ratio for this indicator in each area; the horizontal lines show the range of the indicator at the SLA level within the region.





SLA
Health Region

Per cent overweight 4 year old boys, by SLA

- *13.0% or more*
- *12.0 to 12.9%*
- *11.0 to 11.9%*
- *10.0 to 10.9%*
- *fewer than 10.0%*
- *data not mapped#*

#Data were not mapped because the SLA has a population of less than 100 or there were fewer than 5 overweight boys: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Obese four year old boys, 2000 to 2003

Some 4.5% of four year old boys in South Australia were assessed by Child and Youth Health (see p. 210) as being obese: the same proportion was recorded for both Metropolitan Adelaide and country South Australia (Table 6.12).

Table 6.12: Obese four year old boys, 2000 to 2003

Per cent

Area	No.	%
Metropolitan Adelaide (incl. Gawler)	763	4.5
Country	385	4.5
South Australia	1,148	4.5

Metropolitan regions

In the metropolitan regions (excluding Gawler), 4.5% of four year old boys were assessed as obese (739 boys). A cluster of SLAs with above-average proportions lies across the north-west, inner- and outer-northern suburbs (Map 6.12).

This variable was strongly correlated with low income families, unemployment, female sole parent pensioners, children in welfare-dependent and other low income families, people receiving a Disability Support Pension, smoking during pregnancy, admissions to public acute hospitals, Child and Adolescent Mental Health Service and community health services clients, jobless families, unskilled and semi-skilled workers and unemployment beneficiaries. These results together with a strong inverse correlation with the Index of Relative Socio-Economic Disadvantage suggest an association at the SLA level between obese four year old boys and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

Central Northern had a higher proportion of obese boys than Southern (4.7% compared to 4.1%), representing 548 boys (Table 6.13). SLAs with the largest proportions of these boys in their populations were the adjoining SLAs of Port Adelaide Enfield - East (8.0%, 30 boys), Charles Sturt - Inner West (6.7%, 21), Salisbury Balance (6.6%, seven boys), Port Adelaide Enfield - Port (6.6%, 24) and - Inner (6.5%, 18), and Salisbury - South-East (6.3%, 39).

Relatively large numbers of obese four year old boys were found in Playford - Elizabeth (35 boys, 6.0%), Salisbury - Central (26, 4.3%), Tea Tree Gully - South (24, 4.7%), Port Adelaide Enfield - Coast (22, 5.7%) and Campbelltown - East (22, 5.6%).

Low proportions (and relatively low numbers) were recorded for boys in Unley - East (2.0%, five boys), Tea Tree Gully - Hills (2.1%, four boys), Adelaide Hills - Central (2.6%, six), Salisbury - North-East (2.9%, 13), and Tea Tree Gully - North (3.4%, 21).

Southern Adelaide

In Southern, 4.1% of four year old boys (202 boys) were obese. None of the SLAs had proportions mapping in the highest range (Map 6.12). The highest proportions in this region were located in Onkaparinga - South Coast (5.7%, 24 boys) and - Hackham (5.3%, 16), and Marion - North (5.4%, 16).

The Onkaparinga SLAs of - Woodcroft (27 boys, 4.1%), and - Morphett (22, 4.8%) both had relatively large numbers of obese four year old boys.

Mitcham - Hills (2.2%, seven boys), Onkaparinga - Reservoir (2.9%, 14), Mitcham - West (3.0%, eleven) and Holdfast Bay - North (3.8%, seven) all had low proportions of obese four year old boys.

The Regions

In country South Australia, 397 four year old boys were assessed as being obese, 4.5% of those measured. **Eyre** had the highest proportion of 6.4% (39 boys), with 5.2% (42 boys) in **Riverland**. The lowest proportion was recorded for **Hills Mallee Southern** (3.4%, 72).

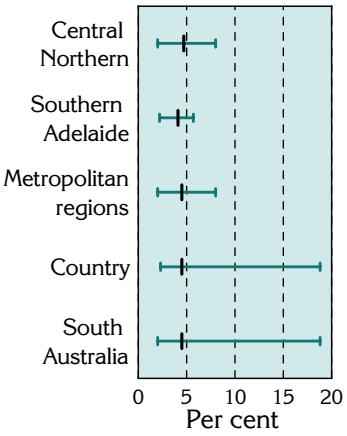
No consistent relationship was evident between obese four year old boys and socioeconomic status in the correlation analysis at the SLA level (Table 8.2).

Table 6.13: Regional totals, obese four year old boys, 2000 to 2003

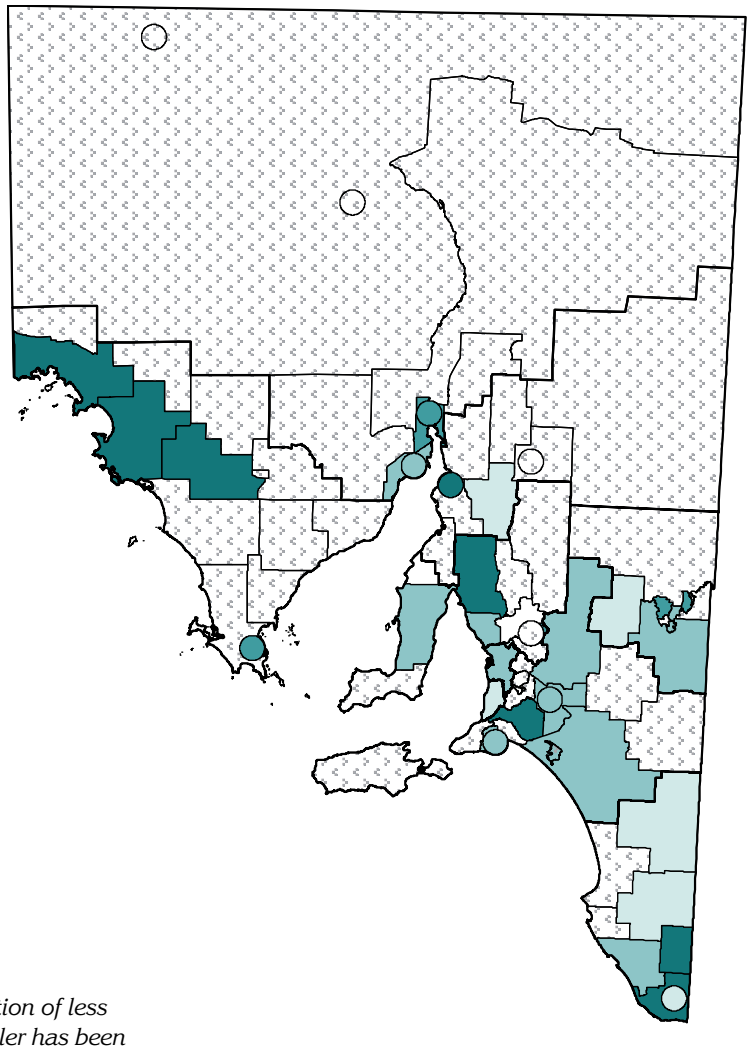
Region	No.	%
Hills Mallee Southern	72	3.4
Wakefield[1]	77	4.1
South East	74	4.5
Northern & Far Western	51	5.1
Eyre	39	6.4
Mid North	43	5.0
Riverland	42	5.2
Country SA	**397**	**4.5**
Central Northern	548	4.7
Southern	202	4.1
Metropolitan regions	**751**	**4.5**
South Australia	**1,148**	**4.5**

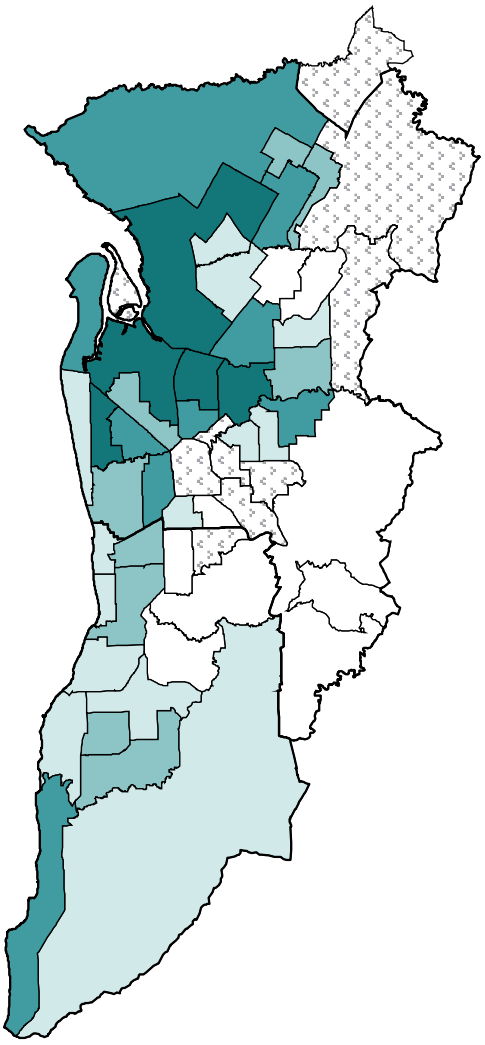
[1] **Gawler is included in Wakefield region**

Map 6.12
Obese four year old boys, 2000 to 2003



Note: The black vertical lines show the average ratio for this indicator in each area; the horizontal lines show the range of the indicator at the SLA level within the region.





SLA
Health Region

Per cent obese 4 year old boys, by SLA

- *6.5% or more*
- *5.5 to 6.4%*
- *4.5 to 5.4%*
- *3.5 to 4.4%*
- *fewer than 3.5%*
- *data not mapped#*

#Data were not mapped because the SLA has a population of less than 100 or there were fewer than 5 obese boys: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Dental health of 12 year old children, 2002 to 2004

Dental decay and gum disease are costly health burdens, and yet, are also some of the most preventable health conditions. Overall, Australian children experience comparatively low levels of dental decay. However, a minority of children experience extensive decay and carry most of the burden of this disease (Armfield et al. 2004). Fluoride plays a crucial role in the prevention of dental caries. While some water supplies outside the metropolitan regions have optimal levels of fluoride to protect against dental caries, many do not (DSRU 2000).

In South Australia, fewer than two thirds (61.2%) of twelve year old children attending the School Dental Service (SDS) had healthy teeth (where healthy is defined as having no decayed, missing or filled teeth) (Table 6.1Table 6.4). The proportion was higher in Metropolitan Adelaide than in country South Australia.

Table 6.14: Children with no decayed, missing or filled teeth, 2002 to 2004

Area	Children attending	No.	Per cent
Metropolitan Adelaide (incl. Gawler)	13,736	8,636	62.9
Country	6,260	3,594	57.4
South Australia	20,025	12,254	61.2

Metropolitan regions

The SLAs with the highest proportions of 12 year old children with healthy teeth were located in the inner and middle suburbs to the east, south and west of the city, and throughout much of the south-east and outer south. SLAs with the highest proportion of children with decayed, missing or filled teeth were located in a band, starting in Adelaide and covering SLAs to the north-west and north, and extending to the outer-north (Map 6.13). The pattern of distribution of children with poor dental outcomes under this measure is consistent with the pattern of socioeconomic disadvantage seen throughout this atlas, but is much more evident in the Central Northern Adelaide region.

This variable was consistently weakly correlated with a number of the indicators of advantage, and inversely correlated with a number of the indicators of disadvantage. These results, together with a weak correlation with the Index of Relative Socio-Economic Disadvantage suggest an association at the SLA level between 12 year old children with no decayed, missing or filled teeth and socioeconomic advantage (Table 8.1).

Central Northern Adelaide

In Central Northern, 60.9% of children aged 12 years were assessed by the SDS as being without decayed, missing or filled teeth, a total of 5,432 children. This rate was lower than that in the Southern region (Table 6.15).

Around three quarters of children from West Torrens - West (77.6%, 225) and West Torrens - East (74.6%, 185) who attended an SDS clinic had no decayed, missing or filled teeth. There were also high proportions in Burnside - South-West (69.5%, 91), Tea Tree Gully - South (69.0%, 267), Charles Sturt - Coastal (68.5%, 241) and Salisbury - North-East (68.3%, 185).

Large numbers of 12 year old children without any decayed, missing or filled teeth were recorded by the SDS in Salisbury - South-East (293, 60.4%), Tea Tree Gully - North (257, 65.7%) and Charles Sturt - Inner West (210, 66.5%). Of the 26 children aged 12 in the SLA of Adelaide and assessed by the SDS, none was free of decayed, missing or filled teeth.

Children in Charles Sturt - North-East had a poor outcome on this measure, with just 37.8% of 12 year olds attending an SDS clinic being free of decayed, missing or filled teeth (126 children aged 12 years), followed by Port Adelaide Enfield - Port (48.1%, 185), Salisbury - Inner North (51.7%, 185) and - Central (54.8%, 251), Port Adelaide Enfield - Coast (57.0%, 254) and Playford - Elizabeth (57.9%, 256).

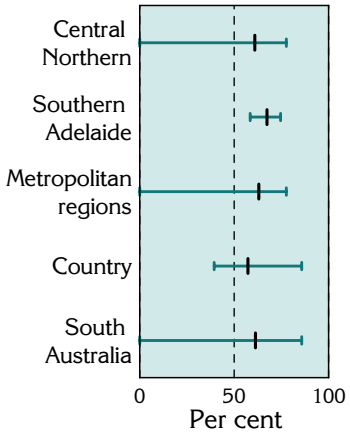
Southern Adelaide

In Southern, over two-thirds (67.3%) of 12 year old children who attended an SDS clinic had no decayed, missing or filled teeth (3,051 children), a better outcome than in Central Northern (with 60.9%).

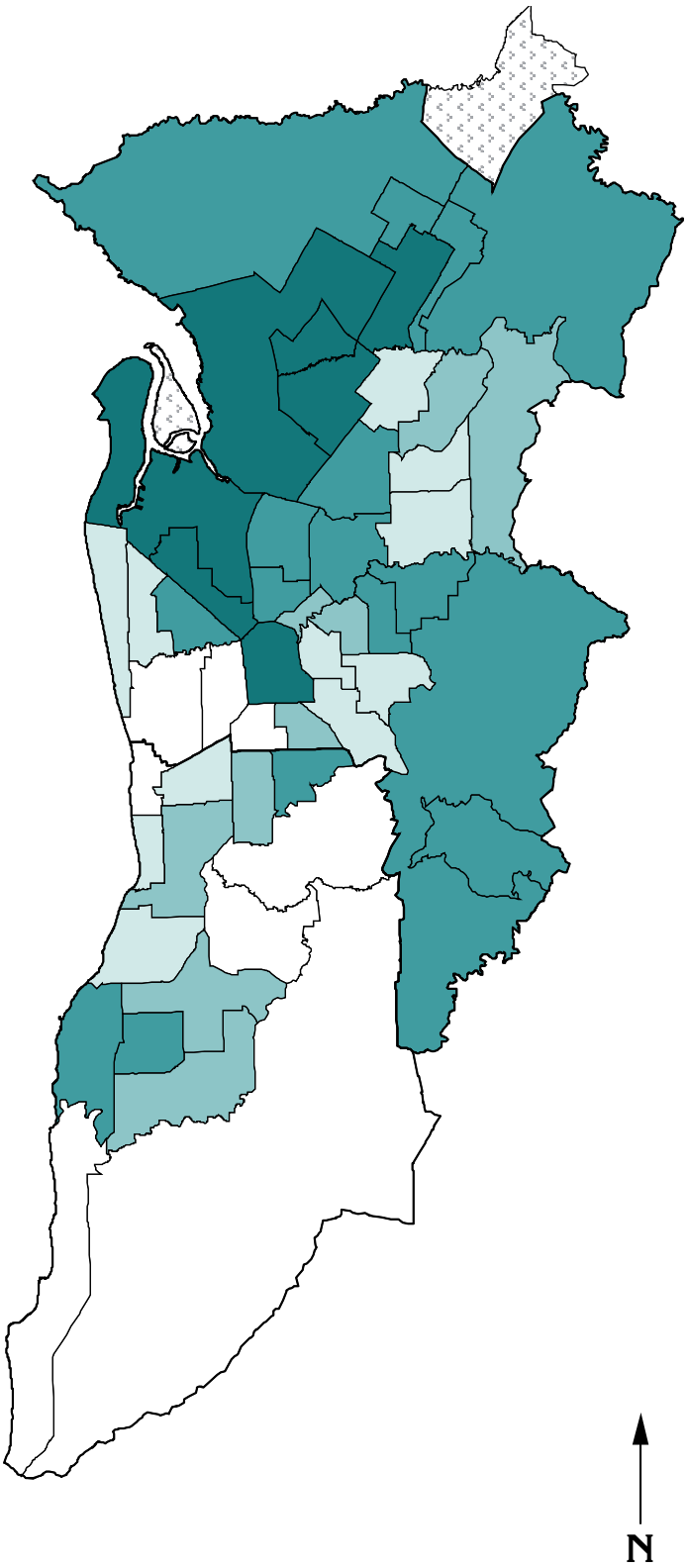
A number of SLAs in the Southern region had relatively high proportions of 12 year old children in this group. These included Mitcham - Hills (74.5%, 260), Onkaparinga - South Coast (73.4%, 326) and - Reservoir (72.5%, 338), Holdfast Bay - North (72.2%, 52), Onkaparinga - Hills (71.6%, 184), Unley - West (71.4%, 75), and Marion - North (69.6%, 119) and - South (69.1%, 259). Onkaparinga - Woodcroft had a large number of children without any decayed, missing or filled teeth (404 children, 65.5%).

The SLAs with the lowest proportions in this region were Mitcham - North-East (58.4%, 111 children), Onkaparinga - North Coast (60.1%, 166) and - Morphett (61.0%, 280), and Unley - East (62.7%, 74).

Map 6.13
Dental health of 12 year old children: no decayed, missing or filled teeth, metropolitan regions, 2002 to 2004



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent children with no decayed, missing or filled teeth, by SLA

- *fewer than 58.0%*
- *58.0 to 61.9%*
- *62.0 to 65.9%*
- *66.0 to 69.9%*
- *70.0% or more*
- *data not mapped*[#]

[#] *Data were not mapped for Torrens Island (mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

A Social Health Atlas of South Australia, 2006

Country South Australia

A relatively low proportion, of just over half, of 12 year old children in country South Australia attending a School Dental Service (SDS) clinic were assessed as being without decayed, missing or filled teeth (57.3%, 3,747 children).

There is no clear pattern in the geographic distribution of SLAs with children with high rates of healthy teeth, although towns and other SLAs with better dental health outcomes are generally those closest to Metropolitan Adelaide (Map 6.14). At the regional level, proportions vary from 64.8% in **Mid North** to 52.7% in **Eyre** (Table 6.15).

Table 6.15: Regional totals, children with no decayed, missing or filled teeth, 2002 to 2004

Per cent

Region	No.	%
Hills Mallee Southern	813	59.0
Wakefield[1]	941	58.1
South East	750	54.7
Northern & Far Western	372	56.3
Eyre	168	52.7
Mid North	338	64.8
Riverland	365	54.8
Country SA	**3,747**	**57.3**
Central Northern	5,432	60.9
Southern	3,051	67.3
Metropolitan regions	**8,483**	**63.0**
South Australia	**12,254**	**61.2**

[1] **Gawler is included in Wakefield region**

This variable was consistently weakly correlated with indicators of advantage, and inversely correlated with indicators of disadvantage. These results, together with a weak correlation with the Index of Relative Socio-Economic Disadvantage suggest an association at the SLA level between good dental health and socioeconomic advantage (Table 8.2).

The Regions

Mid North had the highest proportion of children without decayed, missing or filled teeth, with nearly two thirds of those 12 year old children attending an SDS clinic, having good dental health (64.8%, 338 children). There were high proportions of children without these dental problems in Port Pirie Balance (74.5%, 38), Orroroo/Carrieton (72.2%, 13) and Port Pirie City (68.4%, 158); Mount Remarkable had the lowest proportion (54.4%, 31).

In **Hills Mallee Southern**, 59.0% of 12 year old children attending a clinic were free of decayed, missing and filled teeth. However, Kangaroo Island (46.3%, 37 children) and Adelaide Hills Balance (52.7%, 58) had below average proportions for the region. There were high proportions of children without these dental problems in Yankalilla (78.6%, 22), Victor Harbor (70.1%, 68), and Adelaide Hills - North (66.0%, 66). Large numbers were also found in Murray Bridge (138, 56.3%) and Mount Barker - Central (112, 56.9%).

The largest number of children aged 12 years without any decayed, missing or filled teeth was in **Wakefield** region (941 children, 58.1%). There were low proportions in Yorke Peninsula - North (44.3%, 58 children) and - South (46.2%, six), and Mallala (50.9%, 58). Barossa - Tanunda (70.4%, 57) and Wakefield (67.2%, 45) both had relatively high proportions; and Gawler (153 children, 54.6%), Copper Coast (137, 59.8) and Light (116, 63.0%) had relatively large numbers.

Perhaps surprisingly, **Northern and Far Western**, region was on a par with the other country regions, with 56.3% of 12 year old children assessed by the SDS as having no decayed, missing or filled teeth (see comments below under ASGC Remoteness). The lowest proportions (i.e. the poorest outcomes) were in Unincorporated Far North (52.9%, nine children) and Port Augusta (53.7%, 138). Over two-thirds of assessed 12 year old children in Unincorporated Flinders Ranges were without these dental problems (68.4%, 13 children); with a proportion of over half in Whyalla (57.8%, 185).

Over half (54.8%) of 12 year old children in **Riverland** who attended an SDS clinic were without these dental problems (365 children). Lower proportions were found in Renmark Paringa - Renmark (51.1%, 89) and Berri and Barmera - Berri (51.9%, 68). Loxton Waikerie - East had 91 children aged 12 years with good dental health (56.9%).

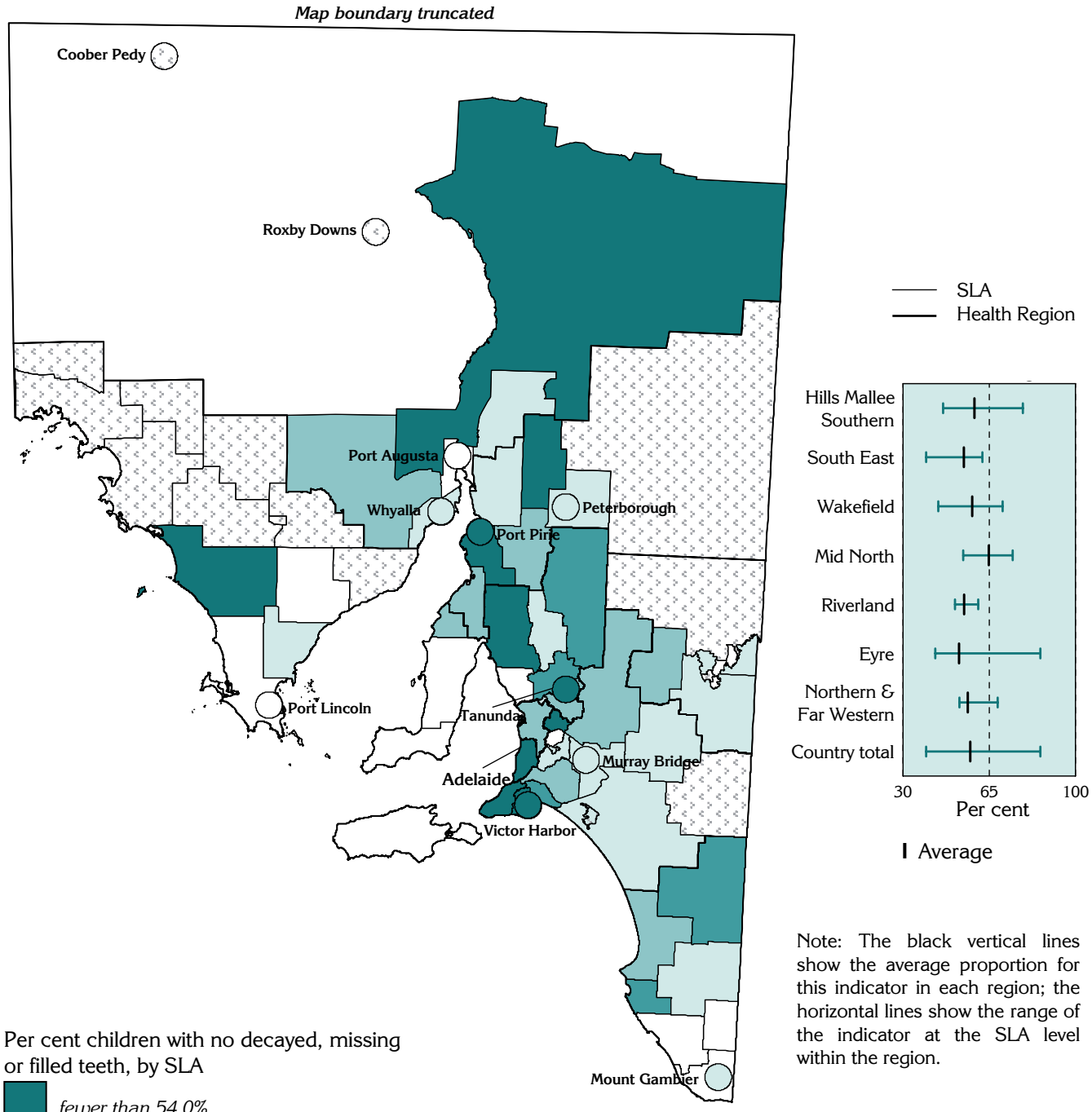
In **South East**, 54.7% of 12 year old children also had no decayed, missing or filled teeth (750 children), with similar proportions in the SLAs of Wattle Range - West (52.4%, 132), Grant (53.0%, 80) and Mount Gambier (54.0%, 269). There were 96 children aged 12 years without these dental problems in Naracoorte and Lucindale (57.5%).

Eyre had the lowest proportion of children without decayed, missing or filled teeth, just 52.7% of all 12 year old children assessed by the SDS in the region. Lower Eyre Peninsula had a particularly low proportion, of 43.1% (22 children), followed by Cleve (50.0%, six children) and Port Lincoln (52.3%, 113). There were a high proportion of these children without these dental problems in Elliston (85.7%, but only a small number, six children).

ASGC Remoteness classification

The dental health of children attending an SDS clinic declines with increasing remoteness, other than in the Very Remote areas, which had the highest proportion of 12 year old children assessed as having no decayed, missing or filled teeth: the high rate is likely to reflect the exclusion from the data of the most remote and disadvantaged areas.

Map 6.14
Dental health of 12 year old children: no decayed, missing or filled teeth, South Australia, 2002 to 2004



Source: See data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

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Prevalence estimates for self-assessed health, chronic disease and associated risk factors

The term "chronic disease" describes health problems that persist over time and require some degree of health care management (WHO 2002). Chronic diseases have complex causes, are often long lasting and seldom cured, and can produce a range of complications (Thacker et al. 1995). They are responsible for a significant proportion of the burden of disease and illness in Australia and other westernised countries. Given the ageing of the population, this trend is likely to continue.

At different life stages, risk factors for chronic diseases and their determinants include genetic predisposition; poor diet and lack of exercise; alcohol misuse and tobacco smoking; poor intra-uterine conditions; stress, violence and traumatic experiences; and inadequate living environments that fail to promote healthy lifestyles (NPHP 2001).

Risk factors are also more prevalent in areas of low socioeconomic status, and in communities characterised by low levels of educational attainment; high levels of unemployment; substantial levels of discrimination, interpersonal violence and exclusion; and poverty. There is a higher prevalence of risk factors among Indigenous communities, and other socioeconomically disadvantaged Australians (NPHP 2001).

As noted on page 187, the data for selected chronic conditions and risk factors at the SLA level have been estimated (by synthetic prediction) from the 2001 National Health Survey (NHS), conducted by the ABS. The data are self-reported data, conveyed to interviewers in the 2001 NHS, and are not based on clinical records or physical measures (Table 6.16 includes notes relevant to this data).

Table 6.16: Notes on estimates of chronic diseases and associated risk factors from the 2001 NHS

Indicator	Notes on the data
Estimates of chronic disease and injury events	
Long term conditions	- Respondents were asked whether they had been diagnosed with any long term health condition (a condition which has lasted or is expected to last for six months or more), and were also asked whether they had been told by a doctor or nurse that they had asthma, cancer, heart and circulatory conditions, and/or diabetes
Injury event	- Injuries which occurred in the four weeks prior to interview
Estimates of measures of self-reported health	
Very high psychological distress levels (K-10)	- Derived from the Kessler Psychological Distress Scale 10 items (K-10)*, which is a scale of non-specific psychological distress based on ten questions about negative emotional states in the four weeks prior to interview. 'Very high' distress is the highest level of distress category (of a total of four categories)
Fair or poor self-assessed health status	- Respondent's general assessment of their own health, against a five point scale from 'excellent' through to 'poor' – 'fair' or 'poor' being the two lowest in the scale
Estimates of selected risk factors	
Overweight & obese	- Based on self-reported height and weight; BMI calculated and grouped into categories (to allow reporting against both WHO and NHMRC guidelines) as follows – overweight: 25.0 kg/m^2 to less than 30.0 kg/m^2; obese: 30.0 kg/m^2 and greater
Smokers	- Respondent's undertaking regular (or daily) smoking at the time of interview
Physical inactivity	- Did not exercise in the two weeks prior to interview through sport, recreation or fitness (including walking) – excludes incidental exercise undertaken for other reasons, such as for work or while engaged in domestic duties
High health risk due to alcohol consumed	- Respondent's estimated average daily alcohol consumption in the seven days prior to interview (based on number of days and quantity consumed). Alcohol risk levels were grouped according to NHMRC risk levels for harm in the long term, with 'high risk' defined as a daily consumption of more than 75 ml for males and 50 ml for females

*Reference for K-10: see Kessler & Mroczek 1994

Note: For a full description, refer to ABS 2001 National Health Survey, Cat. No. 4364.0 and ABS 2001 Health Risk Factors, Cat. No. 4812.0

As the estimates were produced using a range of indicators of socioeconomic status, the correlation analysis has not been undertaken for these variables.

The NHS sample includes the majority of people in the State living in private households, but excludes the most remote areas of the State. Rather than map the few areas outside Metropolitan Adelaide for which the estimates are available, the estimates for the towns for which the estimates can be made are shown in Table 6.17.

As with the data presented in the following pages for these estimates, the standardised ratio is shown to indicate whether the estimated number of cases is above or below the level expected from the State rates, given the size and age composition of the town's population.

Table 6.17: Estimates of chronic diseases and associated risk factors for towns, 2001

Variable	Mount Gambier	Murray Bridge	Peter-borough	Port Augusta	Port Pirie	Tanunda	Victor Harbor	Whyalla
Chronic disease and injury events								
Respiratory system diseases								
Number	6,638	4,997	594	4,013	4,036	1,320	3,226	6,331
Ratio	85**	88	90	86	87	88	91	85*
Asthma								
Number	2,162	1614	187	1,359	1,318	405	982	2,120
Ratio	73**	76**	77*	77**	76**	74**	81**	75**
Circulatory system diseases								
Number	3,969	3,274	467	2,521	2,840	877	3,027	3,701
Ratio	103**	107**	109*	108**	108**	99	104**	99
Diabetes type 2								
Number	493	410	64	327	394	88	384	531
Ratio	102	101	102	106	111	77**	93*	107
Mental and behavioural problems								
Number	2,367	1,918	209	1,373	1,347	412	1,173	2,055
Ratio	101**	112**	104*	97**	97*	92	115**	91
Musculoskeletal system diseases								
Number	7,652	6,056	785	4,743	5,007	1,652	4,600	7,113
Ratio	101**	106**	107**	103**	104**	103**	105**	97**
Arthritis								
Number	3,242	2,691	394	2,081	2,356	711	2,407	3,034
Ratio	105*	109**	112*	119**	111**	98	103	100
Osteoarthritis								
Number	1,927	1,567	192	975	1,132	414	1,477	1,514
Ratio	114**	114**	96	95	95	101	105*	93**
Osteoporosis in females								
Number	283	228	34	177	212	71	247	270
Ratio	83**	85*	89	92	88	82	84**	87*
Injury events								
Number	2,879	2,106	223	1,709	1,662	549	1,179	2,765
Ratio	100**	103**	101	101*	101*	107*	110**	102**
Self-reported health								
Fair/poor health status								
Number	3,422	2,859	417	2,478	2,639	632	2,134	3,818
Ratio	96*	105*	117**	115**	114**	81**	94**	112**
Very high psychological stress (K-10)								
Number	598	553	77	473	495	94	317	733
Ratio	91*	116**	137**	120**	125**	73**	102	117**
Risk factors								
Overweight males								
Number	3,340	2,269	273	1,867	1,791	698	1,690	2,850
Ratio	105**	94**	89	94**	91**	107	103	90**
Overweight females								
Number	2,086	1,498	194	1,241	1,304	442	1,245	1,921
Ratio	108**	108**	112	111**	110**	111*	115**	108**
Obese males								
Number	1,225	1,139	145	844	976	216	582	1,499
Ratio	108**	130**	129**	116**	136**	94	102	129**
Obese females								
Number	1,791	1,371	167	1,133	1,151	311	952	1,698
Ratio	128**	136**	132**	137**	134**	111	129**	129**
Smoking								
Number	4,477	3,484	411	2,871	2,839	817	1,797	4,482
Ratio	104**	115**	121**	113**	114**	100*	102	110**
Physical inactivity								
Number	6,095	4,757	565	3,540	3,706	1,185	2,925	5,380
Ratio	106**	113**	107**	105**	105**	98	92	100**
Alcohol consumption								
Number	715	532	87	566	568	139	308	945
Ratio	100	102	140**	131**	131**	101	91	137**

Chronic disease estimates: respiratory system diseases, 2001

Chronic respiratory system diseases are those that affect the respiratory tract and include asthma, lung diseases, and breathing disorders. They often persist over many years and, if severe, may require a wide range of treatments and medications from specialised health practitioners. Some diseases may be caused by environmental pollutants such as tobacco smoke or toxic emissions from industry or transport. Others are the result of genetic conditions which affect people from a young age, such as cystic fibrosis.

The estimated rate of people with respiratory system diseases was slightly higher in the Southern region (370.7 per 1,000 population) than in Central Northern (362.9). Central Northern had one per cent fewer people reporting these diseases than expected from the rates for the metropolitan regions overall (a standardised ratio (SR of 99**) and Southern had one per cent more (an SR of 101**) (Table 6.18).

Table 6.11: Estimates of respiratory system diseases, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	267,533	362.9	99**
Southern	115,356	370.7	101**
Metropolitan regions	382,890	365.2	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

It was estimated that there were 382,890 people with respiratory system diseases in 2001. There is little variation in ratios across the metropolitan regions, with slightly elevated ratios mapped in a small number of south-western and outer northern and southern SLAs, and in the north-western SLA of Port Adelaide Enfield - Coast (Map 6.15).

Central Northern Adelaide

Central Northern had one per cent fewer people with respiratory diseases than expected from the rates for the combined metropolitan regions (an SR of 99**, 267,533 people). There was very little variation at the SLA level in Central Northern, with SRs no more than six per cent above or below the average.

Playford SLAs all had elevated ratios, with Playford - Elizabeth recording the highest (an SR of 106**, 9,513 people), followed by - West Central (103*, 4,623) and - East Central (103*, 6,846). There were also elevated ratios in Port Adelaide Enfield - Coast (104**, 10,297) and Salisbury - Inner North (101, 8,868), West Torrens - West (101, 9,852) and Walkerville (101, 2,440).

A number of SLAs in the Central Northern region were estimated to have large numbers of people with respiratory system diseases: these included Salisbury - South-East (11,928 people, an SR of 99), Charles Sturt - Coastal (11,085, 100), Port Adelaide Enfield - East (9,942, 100), Salisbury - Central (9,674, 99), and Tea Tree Gully - South (11,684 people, 99), - Central (9,469, 99) and - North (9,180, 99).

SLAs with fewer people estimated as having respiratory system diseases than expected included Campbelltown - East (an SR of 95**, 9,204 people), Adelaide (96**, 6,038), Salisbury Balance (96, 2,033), Charles Sturt - Inner West (96**, 8,301), West Torrens - East (97**, 8,258), Adelaide Hills - Ranges (98, 3,543), Campbelltown - West (98, 6,506), Charles Sturt - North-East (98*, 8,789) and - Inner East (98, 7,455), Tea Tree Gully - Hills (98, 4,416), Burnside - North-East (98, 7,200), Playford - West (98, 2,896) and Port Adelaide Enfield - Port (98, 8,778).

Southern Adelaide

Residents of Southern had a slightly elevated SR, of 101** (115,356 people with respiratory system diseases). Marginally elevated SRs were estimated for the SLAs of Marion - North (104**, 9,170 people), Holdfast Bay - South (104**, 5,138), Holdfast Bay - North (103**, 6,900), Marion - Central (103**, 11,816), Onkaparinga - North Coast (104**, 6,472), - South Coast (103*, 8,352) and - Hills (102, 3,935), and Mitcham - North-East (102, 5,469).

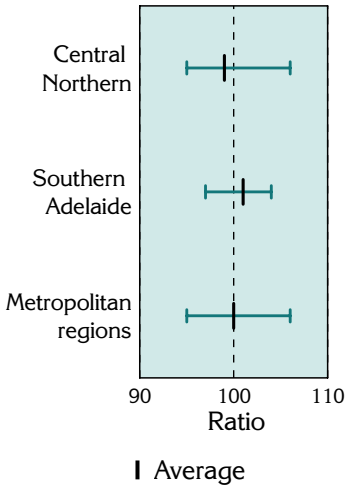
Large numbers of people with respiratory system diseases were estimated for Onkaparinga - Woodcroft (12,309 people, an SR of 100), Onkaparinga - Morphett (8,718, 101) and Mitcham - Hills (8,454, 100).

The lowest SR in the region, just three per cent below the metropolitan average, was recorded for Marion - South (an SR of 97, 7,010 people), followed by Onkaparinga - Reservoir (98, 8,627).

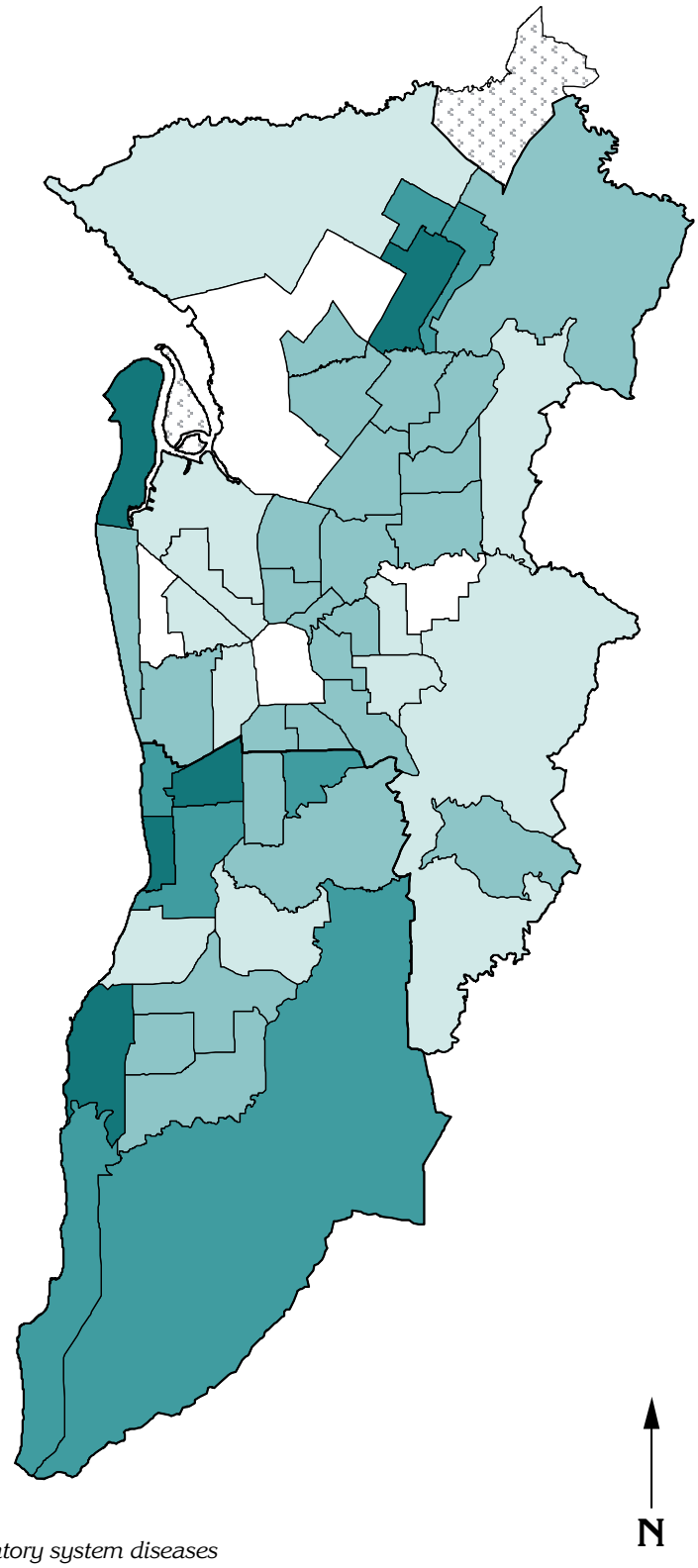
* **indicates statistical significance: see page 24**

Map 6.15

Chronic disease estimates: respiratory system diseases, metropolitan regions, 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *104 and above*
- *102 to 103*
- *99 to 101*
- *97 to 98*
- *below 97*
- *data not mapped#*

**Index shows the estimated number of people with respiratory system diseases in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions*

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Chronic disease estimates: asthma, 2001

Asthma is a disorder affecting the small airways of the lungs. People with asthma have sensitive airways that narrow in response to certain "triggers", leading to difficulty in breathing. The airway narrowing is caused by inflammation and swelling of the airway lining, the tightening of the airway muscles, and the production of excess mucus. This results in a reduced airflow in and out of the lungs. At present, the cause of asthma is not known and there is no cure. However, with appropriate management, most people with asthma can lead normal, active lives.

In 2001, an estimated 147,109 people in the metropolitan regions had asthma (Table 6.19). The rate was slightly higher in Southern (two per cent more people estimated as having asthma than expected) than in Central Northern (one per cent fewer than expected).

Table 6.19: Estimates of asthma, 2001

Region	No.	Rate[1]	Ratio[1]
Central Northern	102,274	139.0	99**
Southern	44,835	143.5	102**
Metropolitan Adelaide	147,109	140.3	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

As seen for respiratory system diseases, there is little variation in ratios across the metropolitan regions (see graph opposite), with slightly elevated ratios mapped in a number of south-western and outer northern and southern SLAs, and in the north-western SLA of Port Adelaide Enfield - Coast (Map 6.16).

Central Northern Adelaide

In Central Northern, 102,274 people were estimated to have asthma in 2001, one per cent fewer than expected from the metropolitan regions rate (a standardised ratio (SR) of 99**).

The most highly elevated ratio in the metropolitan regions was mapped in Playford - Elizabeth, where eight per cent more people than expected were estimated to have asthma (an SR of 108**, 3,804 people). Other SLAs with elevated ratios were Port Adelaide Enfield - Coast (105**, 3,980 people), Playford - West Central (104, 1,911) and - East Central (102, 2,807), Charles Sturt - Coastal (102, 4,182), Walkerville (102, 919) and West Torrens - West (102, 3660).

Salisbury - South-East (4,607 people, an SR of 99); Tea Tree Gully - South (4,524, 100), - Central (3,762, 100) and - North (3,744, 99); Port Adelaide Enfield - East (3,695, 99) and - Inner (2,550, 99); Salisbury - Inner North (3,583, 99) and - North-East (3,159, 99); Burnside - South-West (2,770, 101); Unley - East (2,553, 101); and Prospect (2,518, 99) all had high estimated numbers of people with asthma.

Ratios mapped in the lowest range were all in this region, in the SLAs of Campbelltown - East (an SR of 93**, 3,469 people), Salisbury Balance (93*, 805), Port Adelaide Enfield - Port (94**, 3,170), Adelaide (94**, 2,126), Charles Sturt - North East (94**, 3,219) and - Inner West (94**, 3,070), Playford - West (96, 1,133), West Torrens - East (96*, 2,996), Salisbury - Central (96*, 3,765), Charles Sturt - Inner East (97, 2,746), Adelaide Hills - Ranges (97, 1,387), Campbelltown - West (97, 2,408) and Burnside - North-East (98, 2,713).

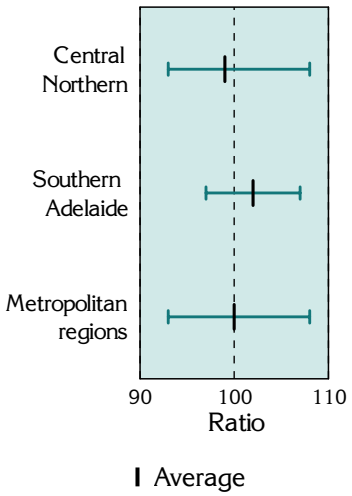
Southern Adelaide

Southern had a standardised ratio of 102** (44,835 people), with the majority of SLAs having elevated SRs. These included Holdfast Bay - South (an SR of 107**, 1,926 people), Holdfast Bay - North (106**, 2,566), Marion - North (106**, 3,420), Onkaparinga - North Coast (105**, 2,521), Marion - Central (104*, 4,442) Onkaparinga - South Coast (103, 3,317), Onkaparinga - Morphett (102, 3,461), Onkaparinga - Hills (102, 1,540) and Mitcham - Hills (102, 3,292).

Two SLAs had fewer people estimated with asthma than expected, namely Marion - South (an SR of 97, 2,825) and Onkaparinga - Reservoir (99, 3,471).

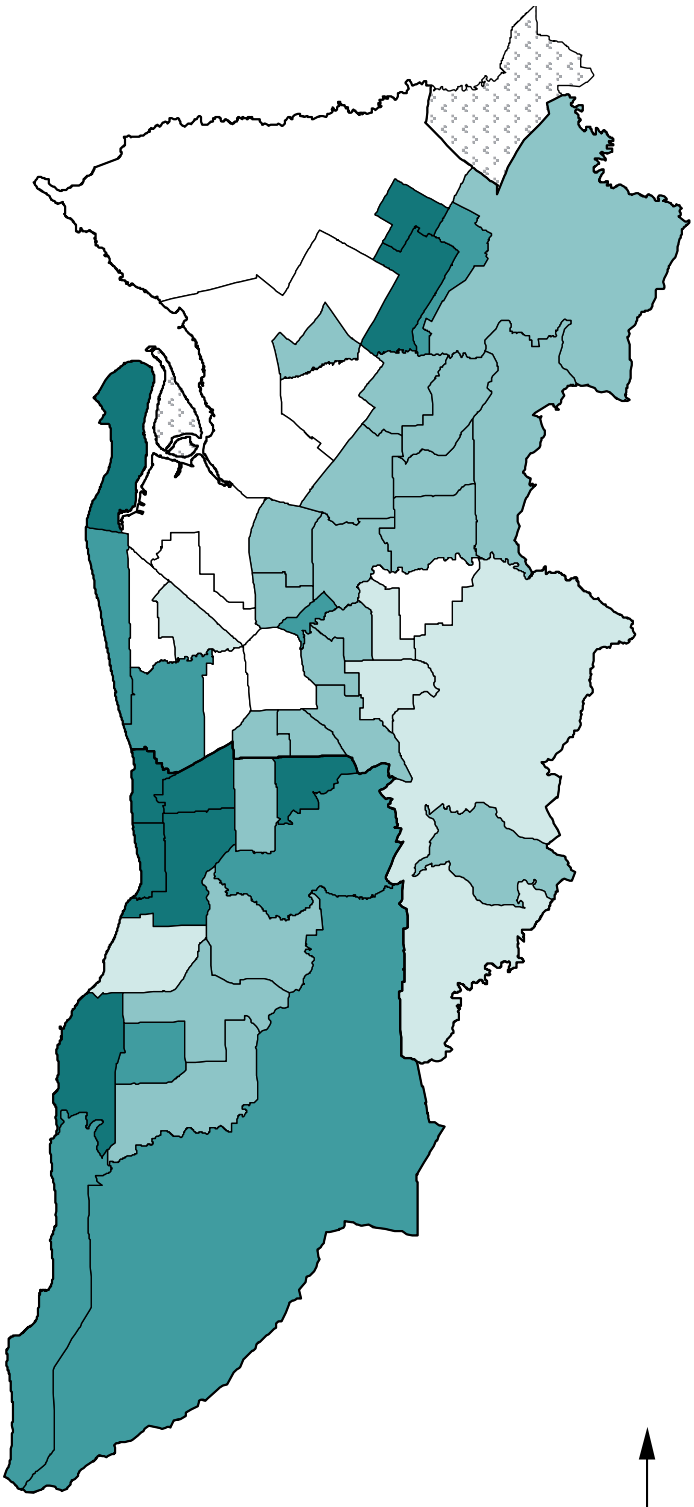
* **indicates statistical significance: see page 24**

Map 6.16
Chronic disease estimates: asthma, metropolitan regions, 2001



Average

Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *104 and above*
- *102 to 103*
- *99 to 101*
- *97 to 98*
- *below 97*
- *data not mapped#*

N

*Index shows the estimated number of people with asthma in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Chronic disease estimates: circulatory system diseases, 2001

Circulatory system diseases include ischaemic or coronary heart disease, cerebrovascular accident or stroke, hypertension (high blood pressure), peripheral vascular disease and rheumatic heart disease. These diseases are mainly caused by a damaged blood supply to the heart, brain and/or limbs, and share a number of risk factors. In 1995, it was estimated that over 80% of the adult Australian population had at least one of the following risk factors: tobacco smoking, physical inactivity, high blood pressure, and overweight or obesity (AIHW 2001).

Within the Australian population, certain population groups are at increased risk for developing and dying from these conditions. These groups include Indigenous Australians, people of lower socioeconomic status, males over the age of 45 years, and males living in rural and remote areas.

In 2001, there were an estimated 193,052 people with circulatory system diseases in the metropolitan regions. There was only marginal variation across the regions, with Central Northern having the expected rate based on population size and structure (a standardised ratio (SR) of 100), and Southern having one per cent more than expected (an SR of 101) (Table 6.20).

Table 6.20: Estimates of circulatory system diseases, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	134,751	183.7	100
Southern	58,301	185.3	101
Metropolitan regions	193,052	184.1	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

None of the SLAs in the metropolitan regions had highly elevated ratios; those with the highest ratios were located in the outer north and south, and in the north-western SLA of Port Adelaide Enfield - Coast, with low ratios in the east (Map 6.17), generally following the pattern of socioeconomic disadvantage shown previously (Map 4.47, page 157).

Central Northern Adelaide

An estimated 134,751 people in Central Northern had circulatory system diseases, an SR of 100. The most highly elevated ratio in the metropolitan regions was in Salisbury - Inner North, with eleven per cent more people estimated to have circulatory system diseases than expected (an SR of 111**, 3,221 people). There were also elevated ratios in Playford - West Central (109**, 1,887), - Elizabeth (104*, 4,960) and - East Central (109**, 2,527), Port Adelaide Enfield - Coast (108**, 5,620) and - East (104**, 5,481), West Torrens - West (104**, 6,297), and - East (103, 4,463), and Charles Sturt - North-East (104*, 4,733).

There were large numbers of people with circulatory system diseases in Charles Sturt - Inner West (5,086 people, an SR of 101), Port Adelaide Enfield - Port (4,875, 101), Salisbury - Central (4,272, 101) and Campbelltown - West (4,003, 99). The majority of the SLAs mapped in the lowest range were in the Central Northern region, including Adelaide (an SR of 91**, 2,801 people), Burnside - North-East (93**, 3,973), Adelaide Hills - Ranges (93**, 1,528), Tea Tree Gully - Hills (93**, 1,983), Campbelltown - East (94**, 4,594), Adelaide Hills - Central (95*, 1,969), Walkerville (95**, 1,444), Playford - West (95, 1,201), Burnside - South-West (95**, 4,124), Norwood Payneham St Peters - West (95**, 2,978), Tea Tree Gully - North (96*, 3,149), - Central (97, 3,910) and - South (96**, 5,757), and Charles Sturt - Coastal (96**, 6,240).

Southern Adelaide

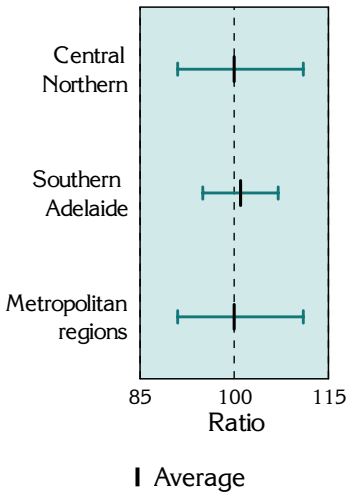
In Southern, 58,301 people were estimated to have circulatory system diseases (an SR of 101). Half of the Onkaparinga SLAs had marginally elevated ratios and half were marginally low. Those that were elevated were the Onkaparinga SLAs of - Hackham (an SR of 107**, 2,156 people), - North Coast (106**, 3,602), - South Coast (104**, 3,894) and - Morphett (104*, 4,009). There were also slightly elevated ratios in Marion - North (104**, 5,671) and - Central (103**, 7,252).

Onkaparinga - Woodcroft (4,816 people, an SR of 99) had a relatively large number of people with these diseases, as did Mitcham - West (4,336, 99) and Holdfast Bay - North (4,235, 100).

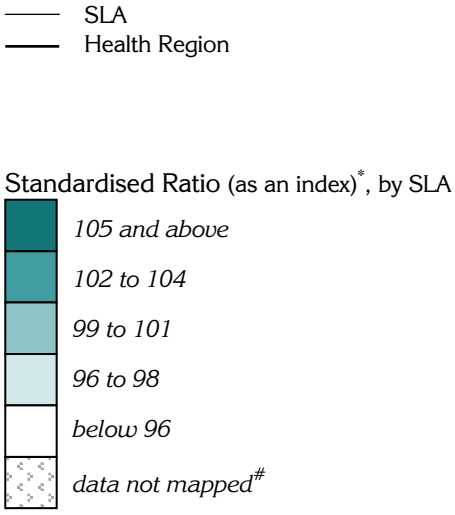
There were fewer people with circulatory system diseases than expected in the SLAs of Mitcham - Hills (an SR of 95**, 4,272 people), Marion - South (96**, 2,498), Onkaparinga - Hills (96, 1,877), Onkaparinga - Reservoir (96*, 3,404) and Mitcham - North-East (97, 3,057).

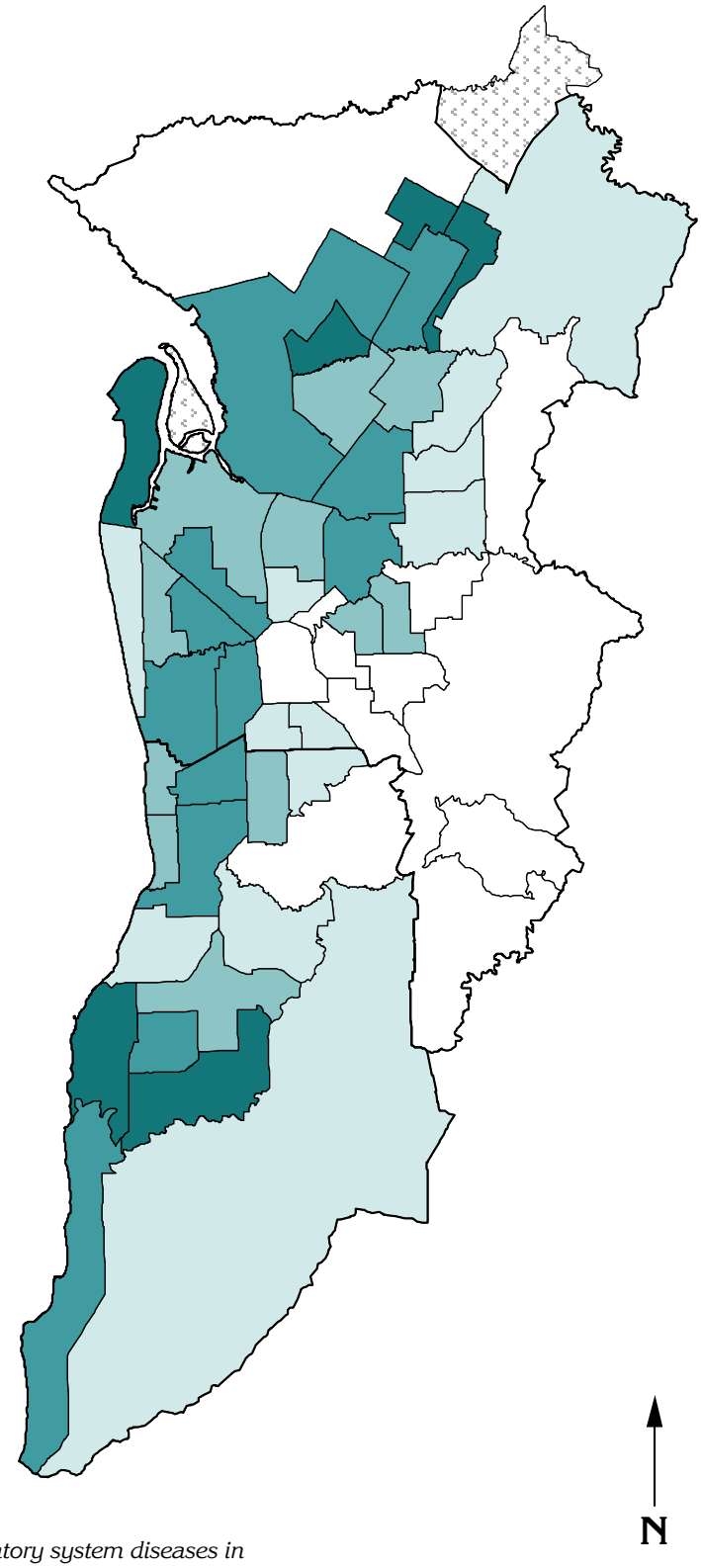
* indicates statistical significance: see page 24

Map 6.17
Chronic disease estimates: circulatory system diseases, metropolitan regions, 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.





*Index shows the estimated number of people with circulatory system diseases in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Chronic disease estimates: diabetes type 2, 2001

Diabetes type 2 is the commonest form of diabetes. It affects 85 to 90 per cent of all those diagnosed with diabetes. While it usually affects mature adults, younger people are also now being diagnosed in greater numbers, as rates of overweight and obesity increase. It is strongly associated with high blood pressure, high cholesterol and excessive weight. The prevalence of diabetes type 2 among Indigenous Australians is one of the highest in the world (AIHW 2002).

It is estimated that 26,848 people reported having been told by a doctor or nurse that they had diabetes type 2, a rate of 25.6 per 1,000 population (Table 6.21). The estimated rate of people with diabetes type 2 in Central Northern (26.1 per 1,000 population) was slightly higher than expected from the metropolitan regions' rate (a standardised ratio (SR) of 102**)). The rate in Southern (24.5 per 1,000 population) was below the expected level (a standardised ratio (SR) of 96**).

Table 6.21: Estimates of diabetes type 2, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	19,165	26.1	102**
Southern	7,683	24.5	96**
Metropolitan regions	26,848	25.6	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

SLAs with elevated ratios covered much of the north, north-west, west and parts of the south of the region (Map 6.18), generally following the pattern of socioeconomic status shown in Chapters 4 and 5.

Central Northern Adelaide

Central Northern had an estimated 19,165 people with diabetes type 2 in 2001, an SR of 102**, with several SLAs mapping in the highest range. The majority of SLAs with elevated ratios were concentrated in groups, with all or most SLAs having elevated SRs in Salisbury, Port Adelaide Enfield, Charles Sturt and Playford.

The Salisbury SLAs were - Inner North (an SR of 128**, 480 people), - Balance (an SR of 117, 102), - Central (112**, 656), - South-East (109**, 887) and - North-East (109, 534). In Port Adelaide Enfield, elevated SRs were recorded for - Port (127**, 835 people), - Inner (117**, 618), - Coast (112**, 809) and - East (112**, 822). Elevated SRs in Charles Sturt were recorded for - North-East (126**, 779 people), - Inner West (117**, 841) and - Inner East (117**, 704). The Playford SLAs of - East Central (with an SR of 121**, 369 people), - West Central (120**, 284) and - Elizabeth (116**, 765) all had more people with diabetes type 2 than expected from the metropolitan rates. There were also elevated ratios in West Torrens - East (an SR of 125**, 733 people) and Campbelltown - West (114**, 643).

Relatively large numbers of people with diabetes type 2 were estimated for West Torrens - West (805 people, an SR of 95) and Campbelltown - East (660, 92).

The SLAs in this region with low ratios included Adelaide Hills - Ranges (an SR of 71**, 167 people) and - Central (76**, 225), Adelaide (75**, 329), Tea Tree Gully - Hills (77**, 247) and - North (79**, 341), Playford - Hills (an SR of 80, 48), Burnside - South-West (83**, 509), Walkerville (83*, 183), Tea Tree Gully - Central (86**, 483), Unley - West (86**, 346), Burnside - North-East (87**, 527), Unley - East (87**, 427), Tea Tree Gully - South (88**, 760), Charles Sturt - Coastal (89**, 822) and Norwood Payneham St Peters - West (89*, 382).

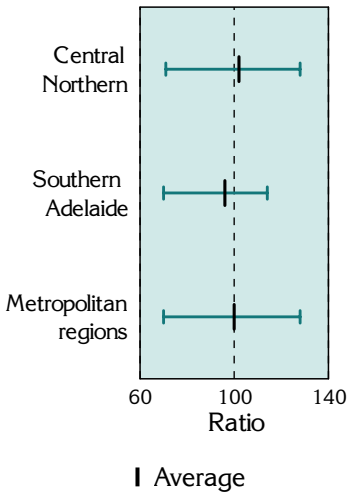
Southern Adelaide

Southern had four per cent fewer cases of diabetes type 2 than expected from the State rates (an SR of 96**, 7,683 people). Marion - North (with an SR of 114**, 839 people) and - Central (113**, 1,109) both had elevated ratios, as did a number of the Onkaparinga SLAs, including - Hackham (an SR of 111, 306), - North Coast (109*, 529), - South Coast (107, 548) and - Morphett (105, 563).

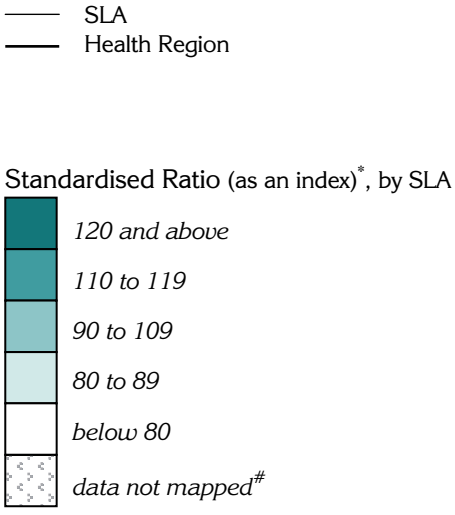
The lowest estimated ratio in the metropolitan regions was calculated for Onkaparinga - Hills, with 30% fewer people with diabetes type 2 than expected (an SR of 70**, 195 people). There were also relatively low ratios in Marion - South (81**, 274), Mitcham - North-East (87**, 377), Onkaparinga - Reservoir (81**, 388), Holdfast Bay - North (88**, 516), Onkaparinga - Woodcroft (82**, 541) and Mitcham - Hills (83**, 546).

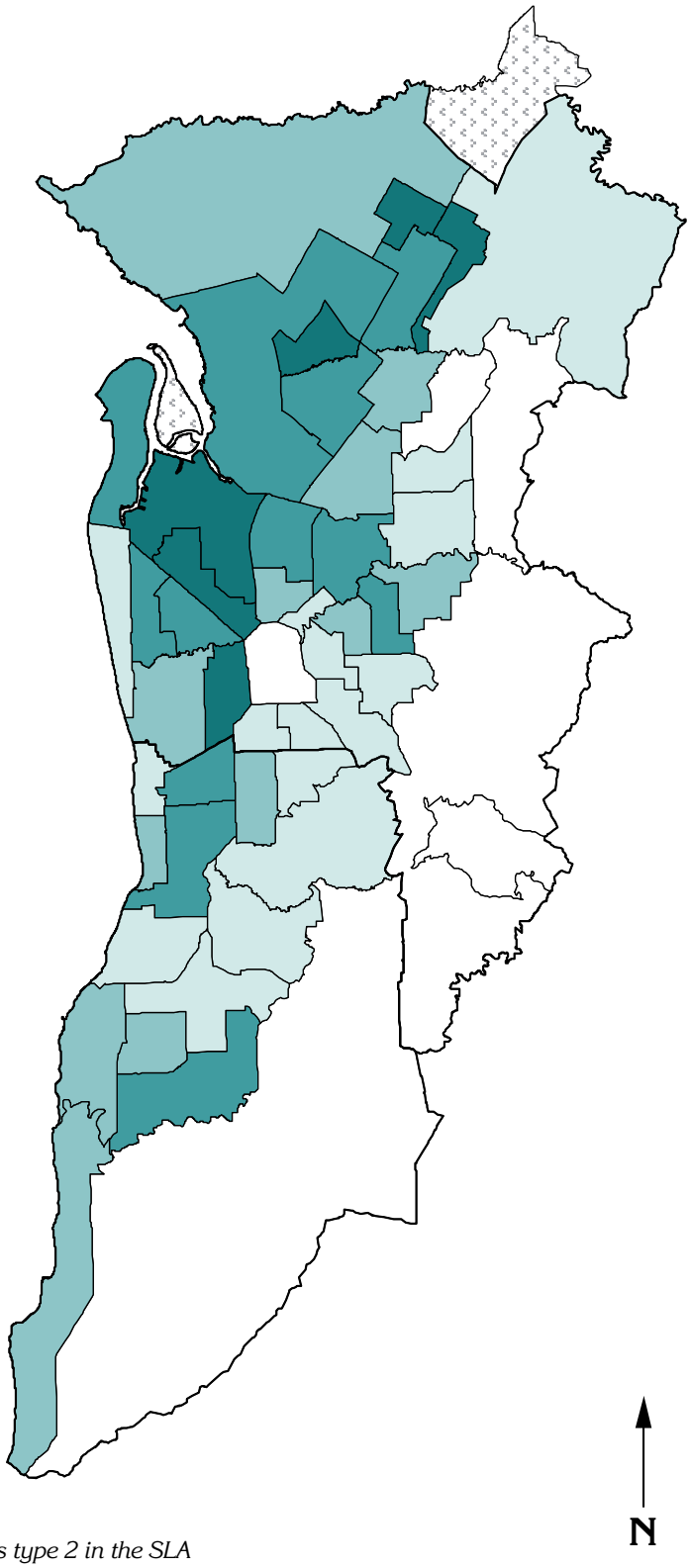
* **indicates statistical significance: see page 24**

Map 6.18
Chronic disease estimates: diabetes type 2, metropolitan regions, 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.





*Index shows the estimated number of people with diabetes type 2 in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Chronic disease estimates: mental and behavioural problems, 2001

Mental health relates to an individual's ability to negotiate the daily challenges and social interactions of life without experiencing undue emotional or behavioural incapacity (DHAC & AIHW 1999). Chronic mental health conditions may require a range of community-based or institutional interventions, depending on the severity of the episode.

In Australia, one in five people is likely to develop a mental health problem at some stage in their lives (NMHS 1992), and this number will increase over the next twenty years (Mathers et al. 1999). There are significant mental health inequalities across the population, as the risk of mental ill-health is higher among those who are poor, homeless, unemployed, persons with low education, victims of violence, migrants and refugees, Indigenous populations, children and adolescents, abused women and the neglected elderly (WHO 2003).

An estimated 111,814 people in metropolitan regions reported mental and behavioural problems as chronic conditions in the 2001 NHS, a rate of 106.7 per 1,000 people. The rate was slightly higher in Central Northern (107.6) compared to Southern (104.3) (Table 6.22). The data on high levels of psychological distress, page 242, is also of relevance.

Table 6.22: Estimates of mental and behavioural problems, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	79,229	107.6	101**
Southern	32,584	104.3	98**
Metropolitan regions	111,814	106.7	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

The most highly elevated ratios were mapped in a number of northern, southern and western SLAs, with low ratios in the east and south-east (Map 6.19), following the pattern of socioeconomic status in the metropolitan regions shown in Chapters 4 and 5.

Central Northern Adelaide

Central Northern had a standardised ratio of 101**, representing 79,229 people who reported mental and behavioural problems as chronic conditions. There were estimated to be nearly one third more than the expected number in Playford - Elizabeth (an SR of 130**, 3,339 people). Other SLAs with elevated ratios included Port Adelaide Enfield - Port (an SR of 121**, 3,112 people), - East (110**, 3,139), - Coast (109**, 3,199), and - Inner (118**, 2,291); Playford - West Central (117**, 1,553); Charles Sturt - North-East (111**, 2,911), - Inner East (108**, 2,342) and Inner West (106**, 2,635); West Torrens - East (110**, 2,645) and - West (105**, 2,910); Salisbury - Inner North (109**, 2,884) and Central (107**, 3,115); and Norwood Payneham St Peters - East (105*, 1,631).

There were estimated to be large numbers of people with mental and behavioural problems in the SLAs of Salisbury - South-East (3,653 people, an SR of 104*), Tea Tree Gully - South (3,258, 95**), Charles Sturt - Coastal (3,049, 96**), Campbelltown - East (2,609, 91**) and Tea Tree Gully - Central (2,575, 91**).

The SLAs of Adelaide Hills - Ranges (with an SR of 78**, 868 people) and - Central (81**, 1,104), Burnside - North-East (82**, 1,753) and - South-West (83**, 1,765), Tea Tree Gully - North (85**, 2,433) and - Hills (85**, 1,145), Playford - Hills (86*, 275) and Walkerville (87**, 608) all had ratios below the level expected from the metropolitan rates.

Southern Adelaide

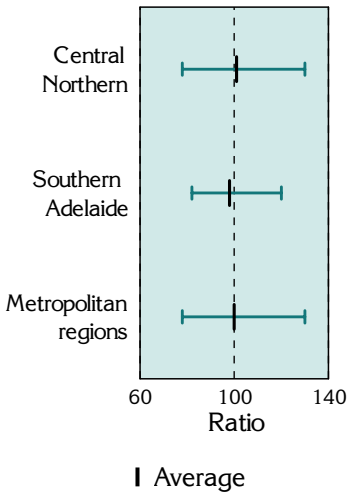
Southern had an estimated 32,584 people with mental and behavioural problems (an SR of 98**). A number of the Onkaparinga SLAs had elevated ratios, including - North Coast (an SR of 120**, 2,161 people), - Hackham (109**, 1,638), - South Coast (105*, 2,549) and - Morphett (105*, 2,638). The SLAs of Marion - North (113**, 2,801) and - Central (107**, 3,499) also had elevated ratios.

Onkaparinga - Woodcroft (3,370 people, an SR of 96**) had a large number of people with mental and behavioural problems.

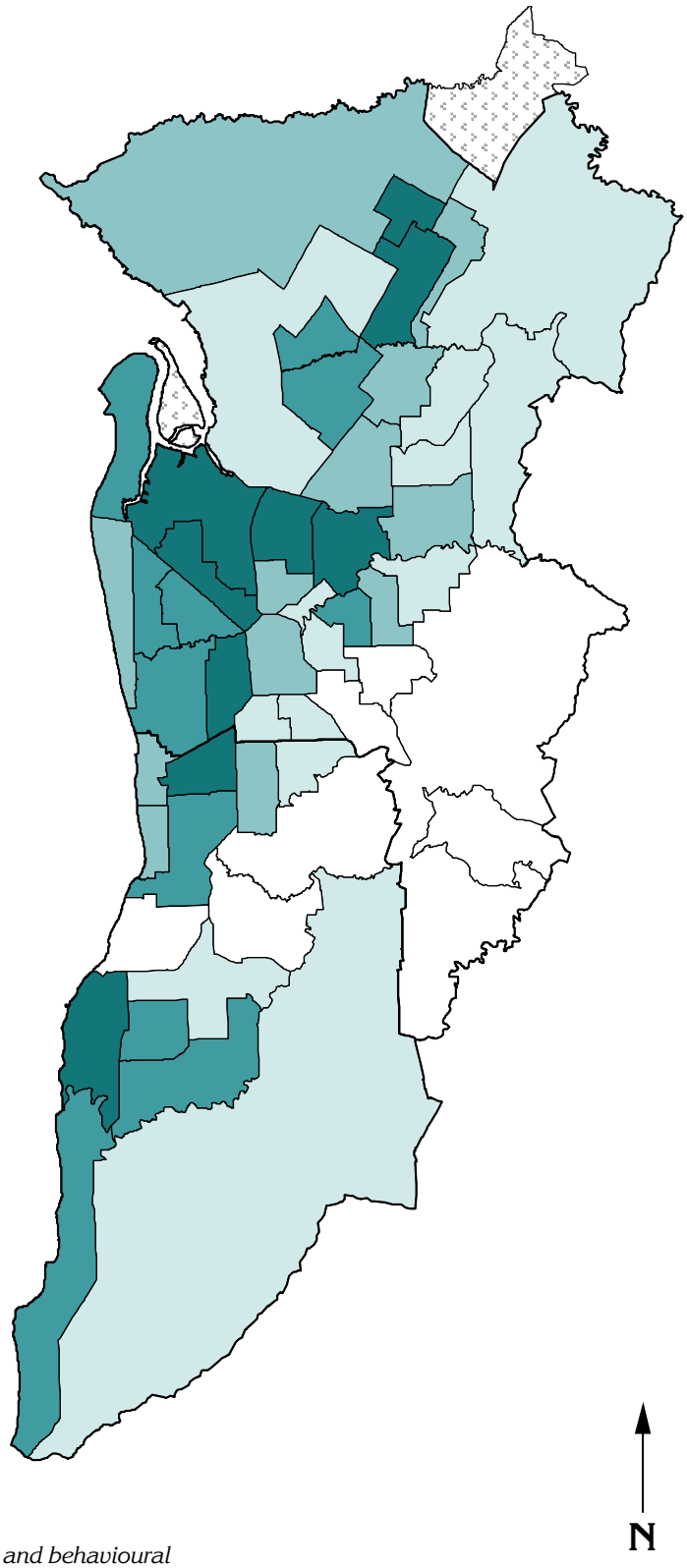
Fewer people with mental and behaviour problems than expected were estimated for the SLAs of Onkaparinga - Reservoir (an SR of 82**, 2,192 people), Marion - South (83**, 1,819), Mitcham - Hills (83**, 2,081) and - North-East (86**, 1,341), and Onkaparinga - Hills (86**, 1,007).

* **indicates statistical significance: see page 24**

Map 6.19
Chronic disease estimates: mental and behavioural problems, metropolitan regions, 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index) *, by SLA

- *110 and above*
- *105 to 109*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped*#

*Index shows the estimated number of people with mental and behavioural problems in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Chronic disease estimates: musculoskeletal system diseases, 2001

Chronic musculoskeletal system diseases are chronic disorders of the muscles and bones. Osteoarthritis, rheumatoid arthritis and osteoporosis are the most prevalent forms of musculoskeletal disease within Australia and have been found to place the highest burden on the community. The primary health burden of musculoskeletal disorders is through loss of quality of life associated with pain and disability (AIHW 2002).

It was estimated that there were 368,546 people in the metropolitan regions with diseases of the musculoskeletal system and connective tissue in 2001, a rate of 351.5 per 1,000 population. The estimated number of people with these diseases in Central Northern was at the level expected based on its population size and age structure, although Southern had a standardised ratio (SR) of one per cent more than expected (101*) (Table 6.23).

Table 6.23: Estimates of musculoskeletal system diseases, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	258,446	350.6	100
Southern	110,101	353.7	101*
Metropolitan regions	368,546	351.5	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

None of the standardised ratios in the metropolitan SLAs were highly elevated. Ratios above average were mapped in a number of outer northern and southern SLAs (and in Port Adelaide Enfield - Coast), with those below average in the city and eastern suburbs (Map 6.20), generally following the pattern of socioeconomic status in the metropolitan regions.

Central Northern Adelaide

There were estimated to be 258,446 people with musculoskeletal system diseases in Central Northern (an SR of 100). None of the SLAs in this region had highly elevated ratios, the highest being an SR of 105** (3,913 cases) in Playford - West Central. Other SLAs with marginally elevated SRs included Port Adelaide Enfield - Coast (104**, 10,163), Playford - Elizabeth (103**, 8,919) and Salisbury - Inner North (103**, 7,195).

There were also estimated to be large numbers of people with these diseases in Charles Sturt - Coastal (11,445 people, an SR of 100), Salisbury - South-East (11,311, 101), Tea Tree Gully - South (11,309, 99), West Torrens - West (10,607, 102*), Salisbury - Central (8,894, 102), Port Adelaide Enfield - East (9,939, 100) and - Port (8,922, 101**), Charles Sturt - Inner West (8,874, 100) and - North East (8,804, 101), Tea Tree Gully - Central (8,482, 99) and West Torrens - East (8,402, 100).

Fewer than expected numbers of residents were estimated as having musculoskeletal system diseases in Adelaide (an SR of 92**, 5,815 people), Adelaide Hills - Ranges (96*, 3,194), Norwood Payneham St Peters - West (96**, 5,948), Burnside - North-East (96**, 7,269), Adelaide Hills - Central (97*, 4,048), Tea Tree Gully - Hills (97*, 4,110), Campbelltown - East (97**, 9,097), Tea Tree Gully - North (97*, 7,533) and Walkerville (97, 2,529).

Southern Adelaide

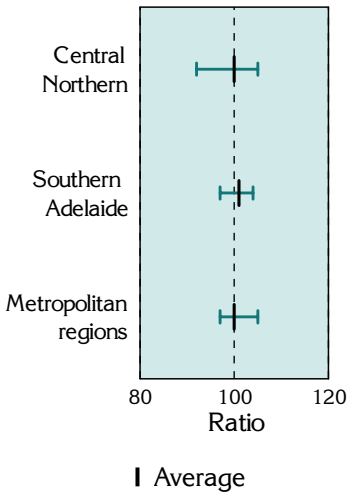
In Southern, 110,101 people were estimated to have musculoskeletal system diseases (an SR of 101*). A number of the Onkaparinga SLAs had marginally elevated ratios, including - North Coast (104**, 6,400 people), - Hackham (103*, 4,466), - South Coast (102, 7,560) and - Morphett (102, 7,961). Marion - North (103*, 9,521) also had a marginally elevated SR.

Relatively large numbers of people with musculoskeletal system diseases were estimated for the SLAs of Marion - Central (12,236 people, an SR of 101), Onkaparinga - Woodcroft (10,665, 100), Mitcham - West (7,919, 101) and Holdfast Bay - North (7,302, 101).

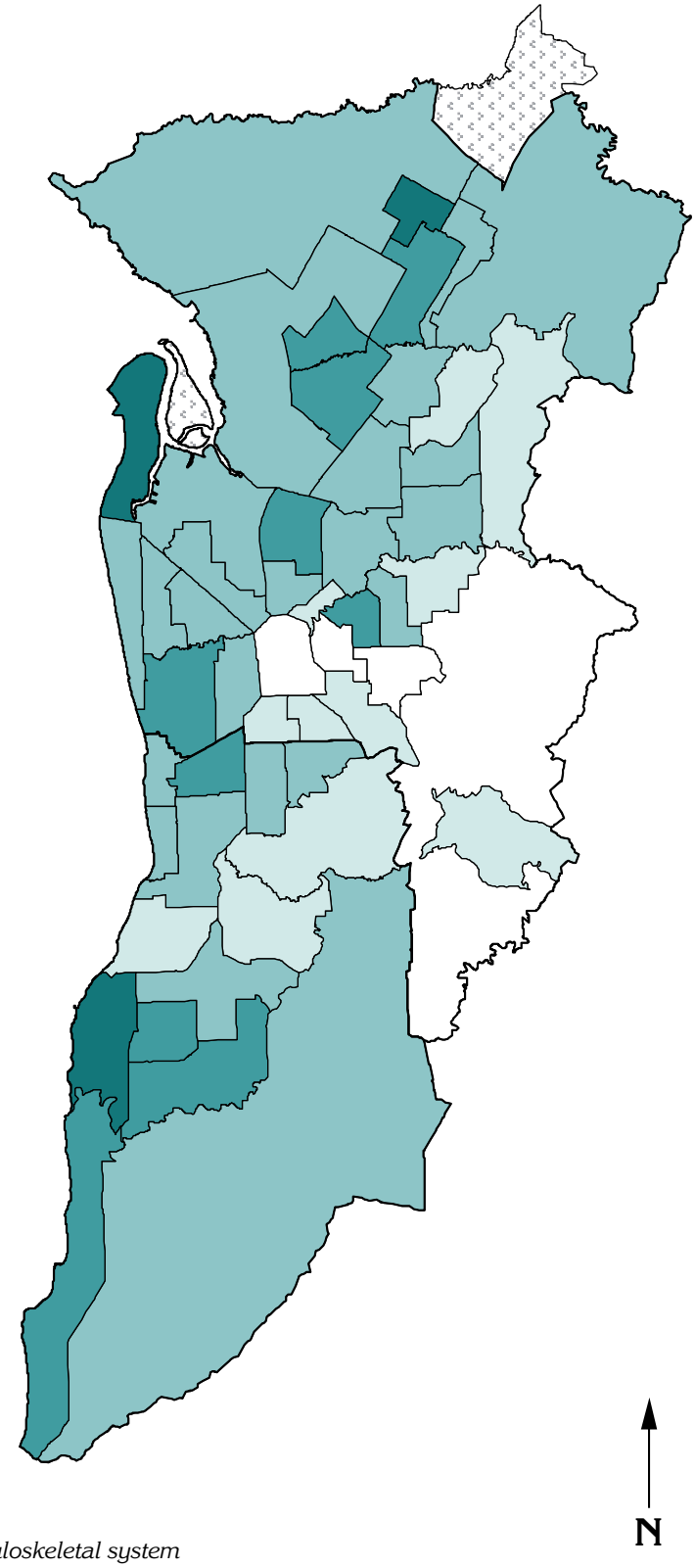
Estimated numbers were below the level expected from the metropolitan rates for Mitcham - Hills (an SR of 97**, 8,117 people), Onkaparinga - Reservoir (97*, 7,471) and Marion - South (97*, 5,878).

* **indicates statistical significance: see page 24**

Map 6.20
Chronic disease estimates: musculoskeletal system diseases, metropolitan regions, 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *104 and above*
- *102 to 103*
- *99 to 101*
- *97 to 98*
- *below 97*
- *data not mapped#*

*Index shows the estimated number of people with musculoskeletal system diseases in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Chronic disease estimates: arthritis, 2001

Arthritis is an inflammatory condition affecting one or more joints within the body. There are many causes, and the treatment varies according to the cause and may involve lifestyle change, pharmaceutical medication, physiotherapy and occasionally, surgical intervention. Females are more likely to be affected than males, and the prevalence of arthritis increases with age.

Based on responses to the 2001 NHS, it was estimated that there were 157,214 people in metropolitan regions with arthritis in 2001, a rate of 150.0 per 1,000 population. The rates were consistent between the regions, with both Central Northern and Southern recording a standardised ratio (SR) of 100 (Table 6.24).

Table 6.24: Estimates of arthritis, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	110,216	149.9	100
Southern	46,998	150.2	100
Metropolitan regions	157,214	150.0	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

There were elevated ratios in a number of outer southern and outer northern SLAs, and in the north-western SLA of Port Adelaide Enfield - Coast, with low ratios in the east (Map 6.21), generally following the pattern of socioeconomic status in the metropolitan regions. The SRs contain much greater variation than do those for the musculoskeletal system diseases (see page 232).

Central Northern Adelaide

In Central Northern, 110,216 people were estimated to have arthritis (an SR of 100). Playford - West Central (1,591 people) and Salisbury - Inner North (2,653 people) both had ratios of 113**, indicating 13% more people with arthritis than expected from the State rates. Other SLAs with elevated SRs included Port Adelaide Enfield - Coast (110**, 4,642), - Port (107**, 4,215), - Inner (107**, 3,392) and - East (106**, 4,577); Playford - Elizabeth (109**, 4,200) and - East Central (108**, 2,042); Charles Sturt - North East (107**, 3,985) and - Inner East (105**, 3,739); and Salisbury - Central (106**, 3,653) and - South-East (105**, 4,797).

Large numbers of people with arthritis were estimated in the SLAs of Charles Sturt - Coastal (5,064 people, 96**), West Torrens - West (4,921, 100), Tea Tree Gully - South (4,686, 96**), Charles Sturt - Inner West (4,256, 104*), West Torrens - East (3,753, 104*), Campbelltown - West (3,178, 96*) and Tea Tree Gully - Central (3,138, 95**).

The SLAs estimated to have fewer people with arthritis than expected included Adelaide (an SR of 86**, 2,215 people), Adelaide Hills - Ranges (88**, 1,163) and - Central (90**, 1,518), Burnside - North-East (90**, 3,138) and - South-West (92**, 3,231), Tea Tree Gully - Hills (91**, 1,590) and - North (91**, 2,427), Playford - Hills (92, 313), Campbelltown - East (92**, 3,729) and Norwood Payneham St Peters - West (92**, 2,393).

Southern Adelaide

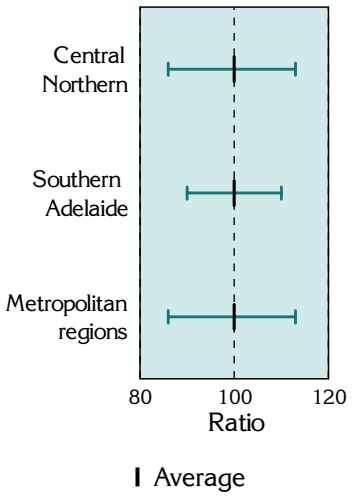
Southern had an estimated 46,998 people with arthritis (an SR of 100). Many of the Onkaparinga SLAs had elevated ratios, including Onkaparinga - North Coast (110**, 3,046), - Hackham (110**, 1,791), - South Coast (106**, 3,206) and - Morphett (106**, 3,338). Marion - North also had an elevated SR, of 107** (4,701 people).

Marion - Central (5,680 people, an SR of 101), Marion - North (4,701, 107**), Mitcham - West (3,519, 99), Holdfast Bay - North (3,451, 100), and Onkaparinga - Morphett (3,338, 106**), - South Coast (3,206, 106) and - North Coast (3,046, 110**) all had large estimated numbers of people with arthritis.

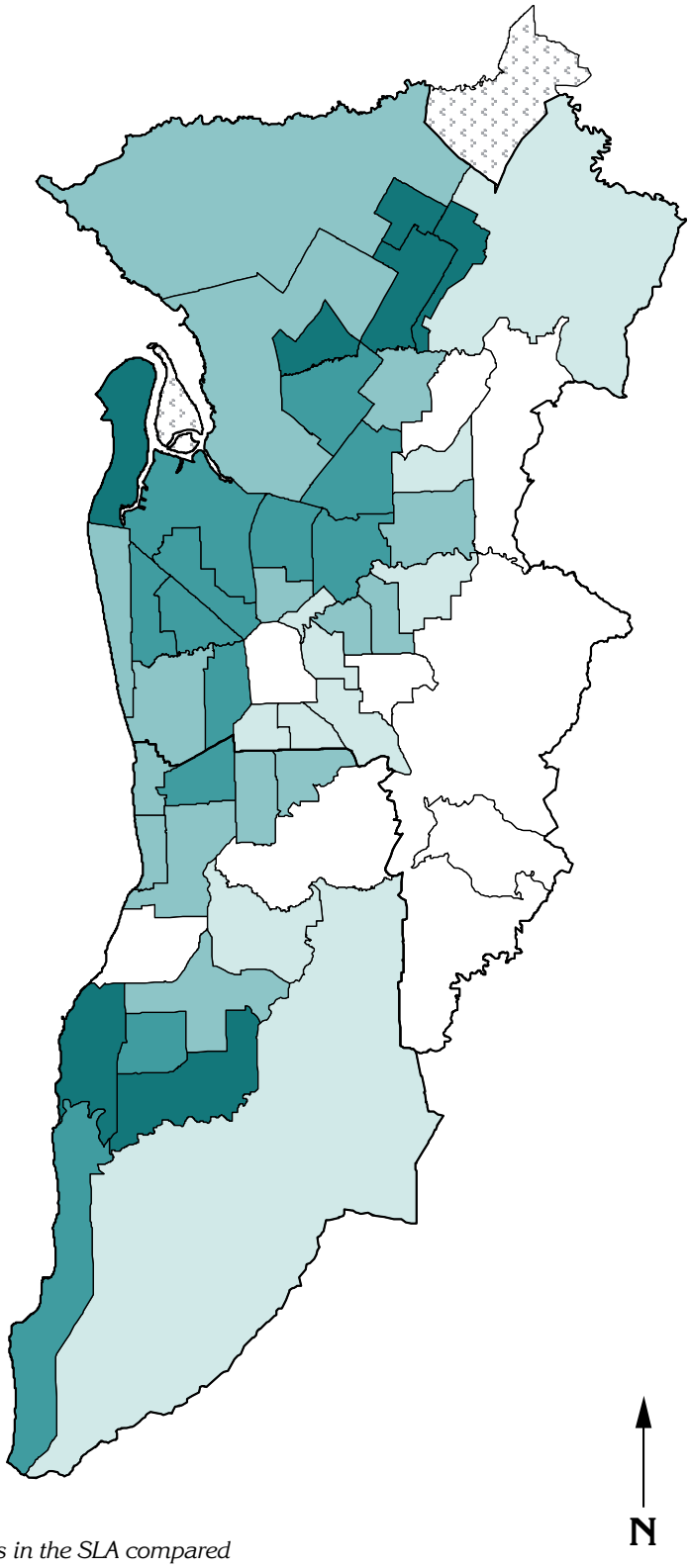
Fewer than the expected number of people with arthritis were estimated for the SLAs of Marion - South (90**, 1,912), Mitcham - Hills (91**, 3,363), Onkaparinga - Reservoir (92**, 2,616), - Hills (95*, 1,494) and - Woodcroft (97*, 3,822), and Mitcham - North-East (96*, 2,414).

* **indicates statistical significance: see page 24**

Map 6.21
Chronic disease estimates: arthritis, metropolitan regions, 2001



Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *108 and above*
- *104 to 107*
- *96 to 103*
- *92 to 95*
- *below 92*
- *data not mapped*#

* *Index shows the estimated number of people with arthritis in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions*

#*Data were not mapped for Torrens Island (mapped with Port Adelaide)*

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Chronic disease estimates: osteoarthritis, 2001

Osteoarthritis is the commonest form of arthritis. In osteoarthritis, the cartilage, which cushions the joint surfaces, degenerates often as a result of injury. Osteoarthritis is most commonly found in the knees, neck, lower back, hips and fingers. Weight loss and exercise to strengthen bones and muscles can provide relief for some osteoarthritis sufferers and delay progression of the disorder. New pharmaceutical agents and surgical joint replacement procedures have also improved the quality of life for people with osteoarthritis.

In 2001, it was estimated that 88,044 people in the metropolitan regions suffered from osteoarthritis, an age-standardised rate of 84.0 people per 1,000 population (Table 6.25). The rate was slightly higher in Southern, being one per cent more than expected (a standardised ratio (SR) of 101*); in comparison, the Central Northern rate of 83.5 per 1,000 population was one per cent fewer than expected.

Table 6.25: Estimates of osteoarthritis, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	61,253	83.5	99
Southern	26,790	85.0	101*
Metropolitan regions	88,044	84.0	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

The most highly elevated ratios were in parts of the north, north-west and outer northern and southern SLAs, with low ratios in the east (Map 6.22), generally following the pattern of socioeconomic disadvantage shown in Chapters 4 and 5.

Central Northern Adelaide

In Central Northern, 61,253 people were estimated to have osteoarthritis. Playford - West Central (an SR of 123**, 915 people), - East Central (116**, 1,137) and - Elizabeth (114**, 2,484) all had highly elevated SRs. Salisbury - Inner North (114**, 1,362 people) and - North-East (106*, 1,618) also had elevated ratios, as did Port Adelaide Enfield - Coast (109**, 2,612) and - East (106**, 2,544).

Large numbers of people with osteoarthritis were estimated for the populations of Charles Sturt - Coastal (2,903 people, an SR of 96), West Torrens - West (2,771, 97), Salisbury - South-East (2,576, 104*), Charles Sturt - Inner West (2,294, 98), Port Adelaide Enfield - Port (2,177, 97), Charles Sturt - North-East (2,089, 99), West Torrens - East (2,036, 101), Charles Sturt - Inner East (2,028, 99), Burnside - South-West (1,980, 97), Salisbury - Central (1,913, 102) and Port Adelaide Enfield - Inner (1,877, 102).

Ratios below average were estimated for the SLAs of Campbelltown - East (an SR of 89**, 1,980 people) and - West (92**, 1,754), Playford - West (91*, 500), Tea Tree Gully - Hills (93*, 876), Adelaide Hills - Ranges (93, 667), Burnside - North-East (93**, 1,877), Prospect (94*, 1,381), Adelaide Hills - Central (95, 875) and Tea Tree Gully - South (95**, 2,577).

Southern Adelaide

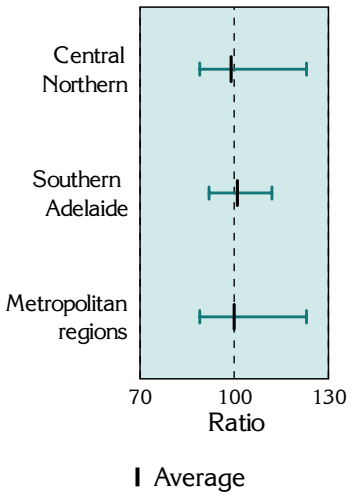
Southern had a standardised ratio of 101*, with an estimated 26,790 people with osteoarthritis. The majority of SLAs with elevated ratios were located in Onkaparinga, including - Hackham (112**, 974), - South Coast (112**, 1,854), - North Coast (111**, 1,744) and - Morphett (109**, 1,864). There was also an elevated ratio in Marion - North (107**, 2,768).

In this region, the SLAs of Marion - Central (3,230 people, an SR of 99), Holdfast Bay - North (2,065, 101) and Onkaparinga - Woodcroft (2,036, 97) all had relatively large numbers of people with osteoarthritis.

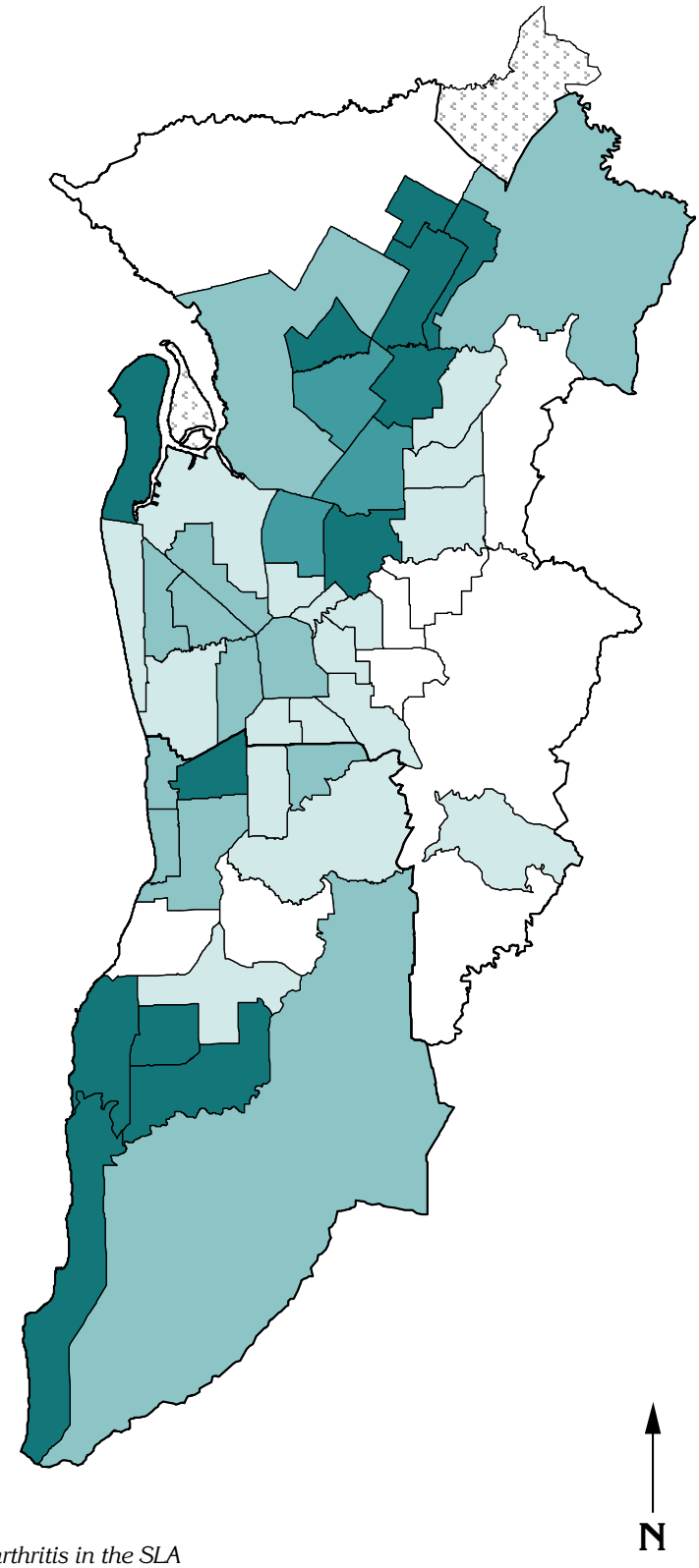
Low SRs were estimated for the SLAs of Marion - South (92, 1,014), Onkaparinga - Reservoir (93**, 1,421), and Mitcham - West (95*, 1,973) and - Hills (96*, 1,962).

* **indicates statistical significance: see page 24**

Map 6.22
Chronic disease estimates: osteoarthritis, metropolitan regions, 2001



Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *106 and above*
- *102 to 105*
- *98 to 101*
- *94 to 97*
- *below 94*
- *data not mapped#*

*Index shows the estimated number of people with osteoarthritis in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Chronic disease estimates: females with osteoporosis, 2001

Osteoporosis is a condition in which the bones become brittle and more susceptible to fractures through loss of bone density. Post-menopausal women are at greater risk of developing osteoporosis due to the hormonal changes which lead to more rapid loss of minerals required for healthy bone density. While all bones are susceptible to osteoporotic fractures, the commonest sites are the hip, spine, wrist, ribs, pelvis and upper arm.

In 2001, it was estimated that 19,019 females had osteoporosis in metropolitan regions, a rate of 35.4 females per 1,000 population (Table 6.26). The rate for Central Northern was marginally above that expected from the rates for the metropolitan regions, with a standardised ratio (SR) of 101. In contrast, Southern had one per cent fewer females with osteoporosis than expected (an SR of 99).

Table 6.26: Estimates of females with osteoporosis, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	13,271	35.5	101
Southern	5,748	35.0	99
Metropolitan regions	19,019	35.4	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

The most highly elevated ratios covered much of the outer north, with low ratios in a number of eastern and south-eastern SLAs (Map 6.23), generally following the pattern of socioeconomic disadvantage shown in Chapters 4 and 5.

Central Northern Adelaide

In Central Northern, it was estimated that 13,271 females had osteoporosis, an SR of 101. Salisbury Balance had over one third more females with osteoporosis than expected, an SR of 136* (65 females). Playford - West Central (an SR of 122**, 170 females) and Salisbury - Inner North (121**, 271) also had highly elevated ratios, all with over 20% more females than expected. All of the other Playford SLAs had elevated ratios: Playford - Elizabeth (110*, 520), - East Central (109, 202), - Hills (106, 36) and - West (105, 107).

It was estimated that there are large numbers of females with osteoporosis living in West Torrens - West (645 females, an SR of 101), Port Adelaide Enfield - East (524, 102) and - Port (517, 102), Salisbury - South-East (508, 100), Charles Sturt - Inner West (494, 96) and - Inner East (447, 100), West Torrens - East (438, 101), Port Adelaide Enfield - Inner (432, 103) and Campbelltown - West (412, 97).

SLAs with fewer females with osteoporosis than expected based on the metropolitan regions' rate included Burnside - North-East (an SR of 92, 420 females), Tea Tree Gully - Hills (93, 173), Adelaide Hills - Central (93, 182), Charles Sturt - Coastal (93, 618), Burnside - South-West (94, 446), Campbelltown - East (95, 433), Tea Tree Gully - South (95, 557) and - Central (95, 346), and Walkerville (95, 158).

Southern Adelaide

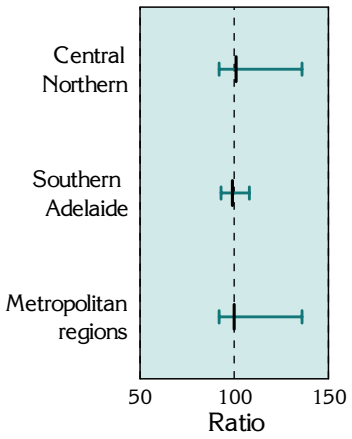
Southern had an SR of 99, representing an estimated 5,748 females with osteoporosis. Marginally elevated ratios were calculated for the Onkaparinga SLAs of - Hackham (an SR of 108, 189 females), - North Coast (103, 351), - South Coast (102, 338) and - Morphett (102, 381). Marion - South also had a marginally elevated SR (102, 221).

Large numbers of females with osteoporosis were also estimated for Marion - North (607 females, an SR of 98), Holdfast Bay - North (483, 100), Mitcham - West (464, 99) and Onkaparinga - Woodcroft (431, 101).

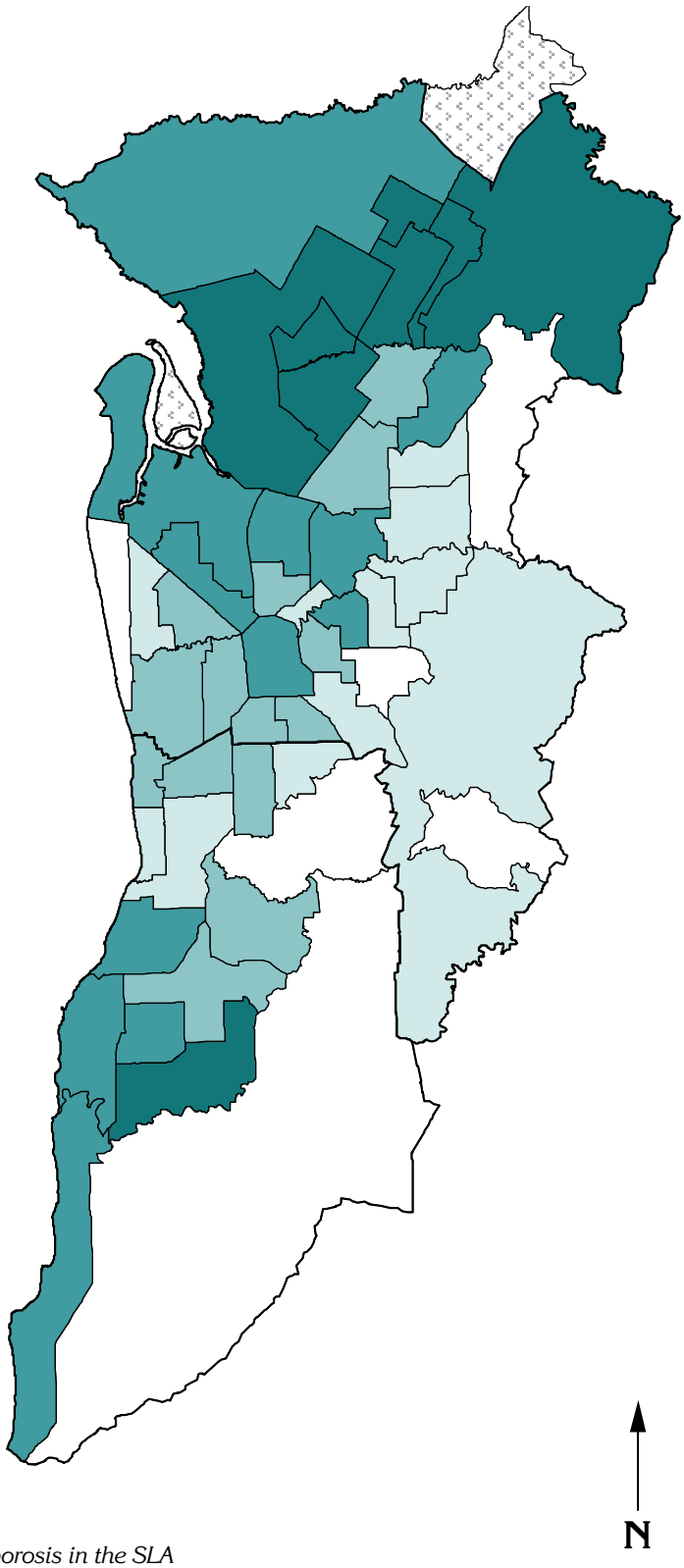
Low SRs were estimated for the SLAs of Mitcham - Hills (an SR of 93, 406 females) and - North-East (96, 336), Onkaparinga - Hills (93, 171) and Marion - Central (96, 711).

* **indicates statistical significance: see page 24**

Map 6.23
Chronic disease estimates: females with osteoporosis, metropolitan regions, 2001



Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *106 and above*
- *102 to 105*
- *98 to 101*
- *94 to 97*
- *below 94*
- *data not mapped#*

*Index shows the estimated number of females with osteoporosis in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Estimates of injury events, 2001

Injuries are the principal cause of death in almost half of the people under 45 years of age in Australia, and account for a range of physical, cognitive and psychological disabilities that seriously affect the quality of life of injured people and their families. Significant health costs are also attributable to injury, accounting for approximately eight per cent of the total direct costs of all diseases annually.

The estimates for injury events were based on whether a person had an injury, or injuries, in the four weeks prior to being interviewed for the 2001 National Health Survey; the data are expressed as injuries (rather than people with an injury), to account for a person having more than one injury during the reference period. For metropolitan regions, there were estimated to be 125,926 injuries, a rate of 120.1 injuries per 1,000 population (Table 6.27). Southern had a higher rate than Central Northern, with four per cent more injuries than expected (an SR of 104**). In contrast, Central Northern had two per cent fewer injuries than expected in the four-week reference period (an SR of 98**).

Table 6.27: Estimates of injury events, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	87,097	117.9	98**
Southern	38,830	125.3	104**
Metropolitan regions	125,926	120.1	100

[1]**Age-standardised rate per 1,000 population**

[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

The geographic distribution of injuries is rather different to that seen for other variables included in this atlas, with many of the highest ratios in SLAs in the Adelaide Hills and in, or adjacent to, the foothills, as well as in two beachside SLAs. The lowest ratios were estimated for the SLA of Adelaide and adjacent western, north-western and inner northern SLAs, as well as in the Campbelltown SLAs (Map 6.24).

Central Northern Adelaide

There were an estimated 87,097 injuries in Central Northern over a four week period (an SR of 98**). SLAs in the region had only marginally above-average ratios, the highest of which was estimated for Playford - Hills (an SR of 109*, 381 injuries). The other SLAs with above-average ratios included Adelaide Hills - Central (an SR of 109**, 1,611 injuries), Port Adelaide Enfield - Coast (107**, 3,395), Burnside - South-West (105**, 2,360), Tea Tree Gully - Hills (105, 1,526), Walkerville (105, 769), Playford - East Central (104*, 2,620), Charles Sturt - Coastal (104*, 3,486), Adelaide Hills - Ranges (104, 1,237), Tea Tree Gully - Central (104**, 3,361) and - North (103, 3,453), Burnside - North-East (103, 2,326) and Playford - Elizabeth (103, 3,158).

There were relatively large numbers of injuries in the SLAs of Salisbury - South-East (3,949 injuries, an SR of 99), - Inner North (3,223, 97) and - North-East (2,781, 100), and West Torrens - West (2,969, 98).

The SLAs with the lowest ratios in the metropolitan regions were all in Central Northern. They included Port Adelaide Enfield - Port (an SR of 87**, 2,528 injuries), Adelaide (89**, 1,724), Charles Sturt - North East (90**, 2,668), - Inner West (91**, 2,469) and - Inner East (93**, 2,244), West Torrens – East (91**, 2,496), Salisbury Balance (92*, 731), Campbelltown - East (92**, 2,912) and - West (93**, 1,952), Port Adelaide Enfield - Inner (92**, 2,066), Playford - West (94, 968), Salisbury - Central (94**, 3,240) and Port Adelaide Enfield - East (94**, 3,017).

Southern Adelaide

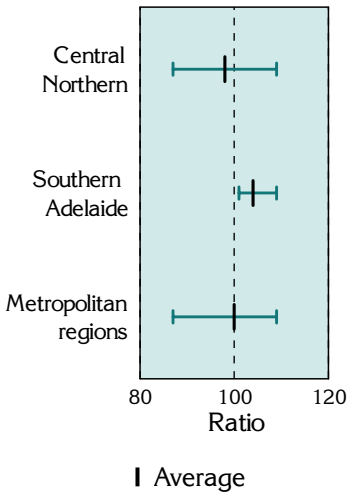
There were estimated to be four per cent more with injuries in Southern than expected from the State rates, an SR of 104** (38,830 injuries).

All of the SRs in Southern were marginally elevated, with the highest SR of 109** being recorded for the SLAs of Holdfast Bay - South (1,585 injuries), Onkaparinga - Hills (1,373) and Mitcham - North-East (1,824). These were followed by Mitcham - Hills (an SR of 107**, 2,871 injuries), Holdfast Bay - North (105*, 2,114), and Onkaparinga - Reservoir (105**, 3,174), - North Coast (105*, 2,112), - Woodcroft (104**, 4,475), - South Coast (104*, 2,907), - Morphett (103, 3,026) and - Hackham (103, 1,828). There was also a marginally elevated SR in Marion - Central (103*, 3,641 injuries).

The lowest SR, of 101, was calculated for both Marion - North (2,787 injuries) and Mitcham - West (2,530).

* **indicates statistical significance: see page 24**

Map 6.24
Estimates of injury events, metropolitan regions, 2001



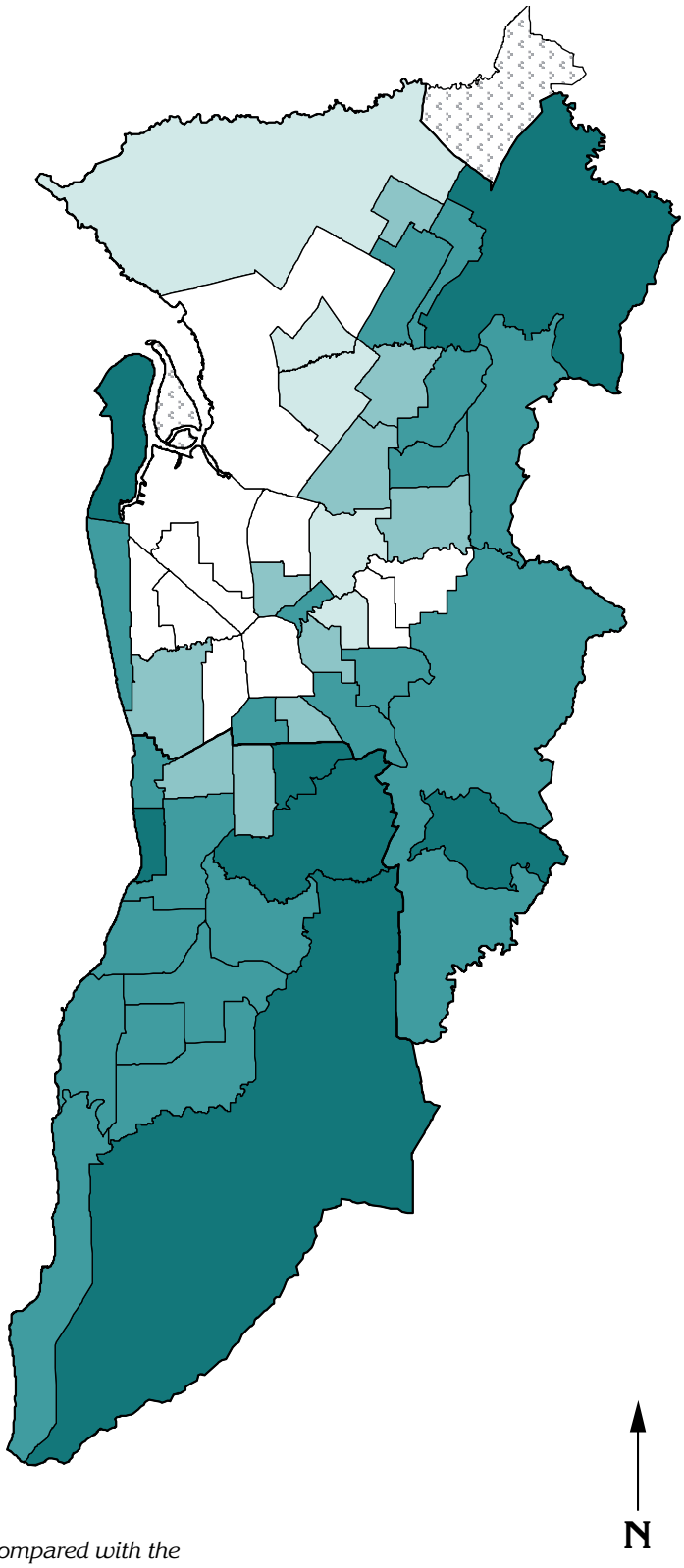
Average

Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *106 and above*
- *102 to 105*
- *98 to 101*
- *94 to 97*
- *below 94*
- *data not mapped#*



*Index shows the estimated number of injuries in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Estimates of very high levels of psychological distress, people aged 18 years and over, 2001

In addition to the responses to questions on mental and behavioural problems (see page 230), information was collected using the Kessler Psychological Distress Scale (K-10). This is a scale of non-specific psychological distress, based on ten questions about negative emotional states in the four weeks prior to interview, asked of respondents 18 years and over. Based on previous research, a very high K-10 score may indicate a need for professional assistance (ABS 2002).

An estimated 32,212 people in South Australia (39.9 people per 1,000 population) were estimated to have very high levels of psychological distress (Table 6.28). The rate was higher in Central Northern (41.4 per 1,000 population), being four per cent above the expected level, compared to Southern which was nine per cent below the expected rate (a standardised ratio (SR) of 91**).

Table 6.28: Estimates of very high levels of psychological distress (K-10), 18 years and over, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	23,453	41.4	104**
Southern	8,759	36.4	91**
Metropolitan regions	32,212	39.9	100

[1] **Age-standardised rate per 1,000 population**
[2] **Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

The SLAs with elevated ratios (Map 6.25) closely follow the pattern of socioeconomic disadvantage shown in Chapters 4 and 5.

Central Northern Adelaide

Overall, Central Northern had four per cent more people with very high levels of psychological distress than expected (an SR of 104**, 23,453 people). However, there were notable variations in ratios across the region. Highly elevated ratios were recorded for people in Port Adelaide Enfield - Port (an SR of 161**, 1,218 people), Playford - Elizabeth (158**, 1,126), - Inner (134**, 773) and - West Central (155**, 515), Salisbury - Inner North (142**, 944), Charles Sturt - North East (135**, 1,026), Salisbury - Central (134**, 1,049), Salisbury Balance (124**, 202) and West Torrens - East (121**, 873).

Relatively large numbers of people with very high levels of psychological distress were estimated for the populations of Salisbury - South-East (1,123 people, an SR of 112**), Port Adelaide Enfield - Coast (964, 111**) and - East (955, 113**), West Torrens - West (899, 106), Tea Tree Gully - South (880, 88**), and Charles Sturt - Inner West (851, 114**) and - Coastal (808, 83**).

Very low ratios were recorded for Adelaide Hills - Ranges (an SR of 55**, 173 people) and - Central (57**, 222), Burnside - South-West (61**, 390) and - North-East (63**, 402), Walkerville (64**, 135), Tea Tree Gully - Hills (68**, 264), Unley - East (75**, 428) and - West (79**, 397), and Tea Tree Gully - North (79**, 594).

Southern Adelaide

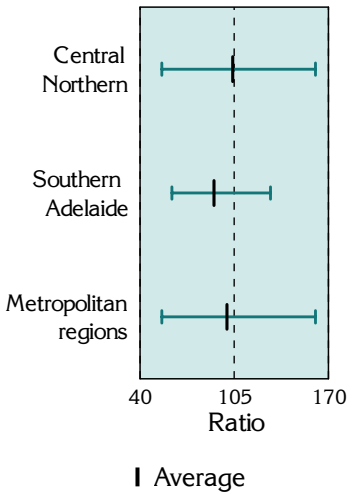
In Southern region, nine per cent fewer people than expected were assessed using the K-10 as experiencing high levels of psychological distress (an SR of 91**, 8,759 people). Highly elevated SRs were estimated for Onkaparinga - North Coast (130**, 681), - Hackham (124**, 497) and, to a lesser extent, - Morphett (110**, 773). Marion - North (111**, 842 people) also had an elevated SR.

In Marion - Central, there were 1,011 people estimated to have very high levels of psychological distress (an SR of 100).

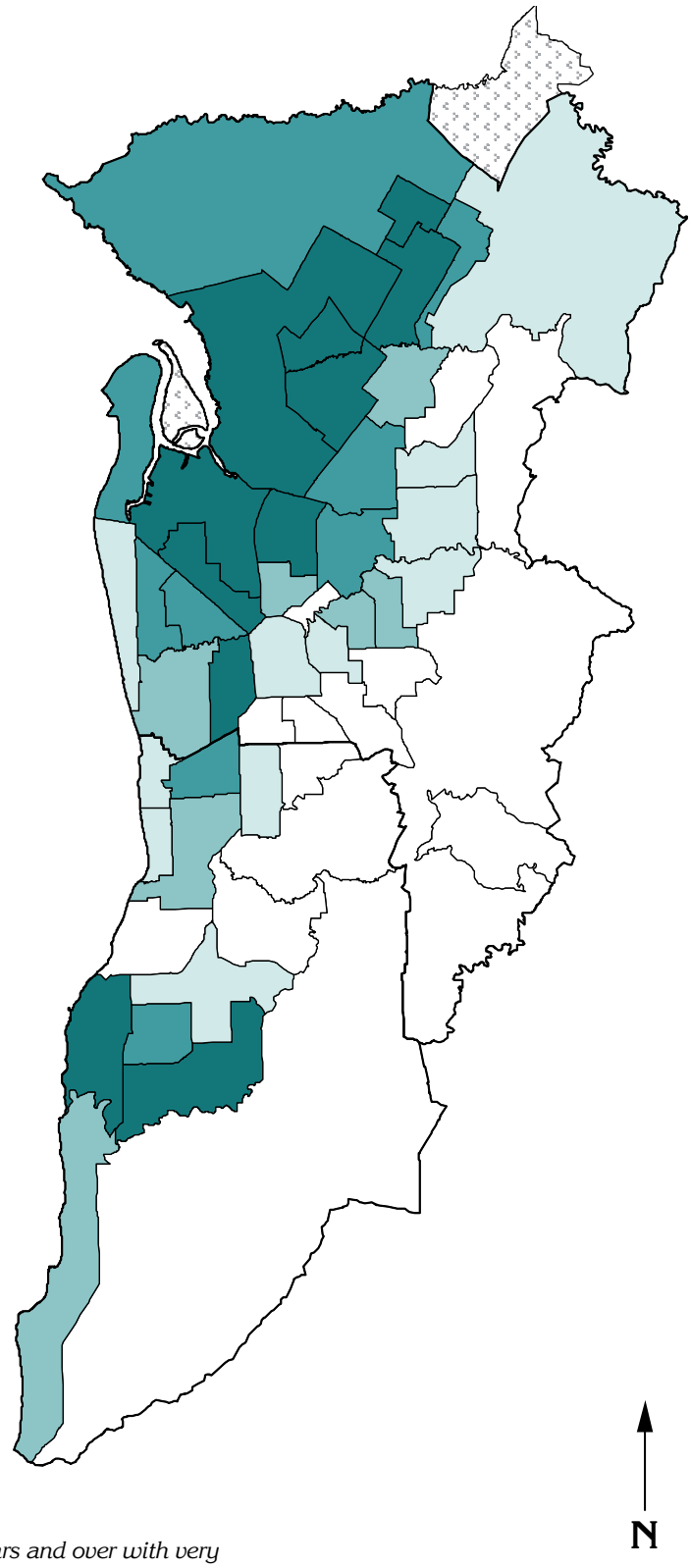
Lower than expected ratios were recorded for Mitcham - Hills (an SR of 62**, 458 people) and - North-East (64**, 296), Onkaparinga - Hills (70**, 231) and - Reservoir (70**, 513), Marion - South (78**, 456), and Holdfast Bay - North (82**, 479) and - South (82**, 365).

* **indicates statistical significance: see page 24**

Map 6.25
Estimates of very high levels of psychological distress, people aged 18 years and over, metropolitan regions, 2001



Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index) *, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped*#

*Index shows the estimated number of people aged 18 years and over with very high levels of psychological distress (as measured by the K-10) in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Estimates of fair or poor self-assessed health status, people aged 15 years and over, 2001

How people rate their health is strongly related to their experience of illness and disability (McCallum et al. 1994). This measure is therefore an important indicator of key aspects of quality of life. In the 2001 NHS, respondents aged 15 years and over were asked to rate their health on a scale from 'excellent', through 'very good', 'good' and 'fair', to 'poor' health. The data shown here relate to the 20% of the population who reported their health as 'fair' or 'poor'.

The estimated rate of people reporting their health as 'fair' or 'poor' was two per cent higher than expected in Central Northern and five per cent lower than expected in Southern (Table 6.29).

Table 6.29: Estimates of fair or poor self-assessed health status, people aged 15 years and over, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	127,996	214.6	102**
Southern	50,833	199.8	95**
Metropolitan regions	178,829	210.2	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

SLAs with highly elevated ratios were largely located in the north-west and outer northern suburbs, with low ratios in eastern, north-eastern and south-eastern SLAs (Map 6.26), generally following the pattern of socioeconomic disadvantage shown in Chapters 4 and 5.

Central Northern Adelaide

In the Central Northern region, an estimated 127,996 people rated their health as fair or poor (two per cent more than expected, a standardised ratio (SR) of 102**). A number of SLAs in this region had elevated or highly elevated ratios, including Salisbury - Inner North (an SR of 125**, 3,978 people), Port Adelaide Enfield - Port (124**, 5,368), Playford - Elizabeth (124**, 5,192), - West Central (123**, 2,114) and - West (117**, 1,444), Charles Sturt - North East (118**, 4,980), Salisbury - Central (117**, 4,821) and Balance (116**, 884), Port Adelaide Enfield - Inner (116**, 3,961), West Torrens - East (112**, 4,559), Charles Sturt - Inner East (112**, 4,275) and - Inner West (110**, 4,853), and Playford - East Central (111**, 2,729).

Large numbers of people rating their health as fair or poor were residents in Salisbury - South-East (5,754 people, an SR of 107**), West Torrens - West (5,438, 106**), Port Adelaide Enfield - East (5,243, 109**) and - Coast (5,214, 109**), Tea Tree Gully - South (5,090, 91**) and Charles Sturt - Coastal (5,082, 89**).

SLAs with fewer than expected people reporting their health as fair or poor included Adelaide Hills - Ranges (an SR of 75**, 1,214) and - Central (77**, 1,575), Burnside - South-West (80**, 3,042) and - North-East (82**, 3,060), Tea Tree Gully - Hills (82**, 1,690), Walkerville (84**, 1,091) and Playford - Hills (85**, 361).

Southern Adelaide

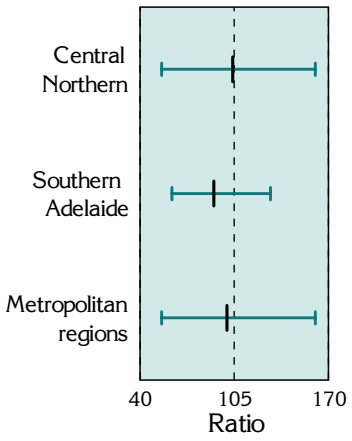
There were five per cent fewer than expected people rating their health as fair or poor in Southern (an SR of 95**, 50,833 people). Elevated SRs were calculated for Onkaparinga - Hackham (114**, 2,339), - North Coast (113**, 3,444) and - Morphett (106**, 3,989).

Relatively large numbers of people reporting their health as fair or poor were estimated for the SLAs of Marion - Central (6,136, 102), Onkaparinga - Woodcroft (4,525, 90**) and - South Coast (3,675, 103) and Mitcham - West (3,593, 93).

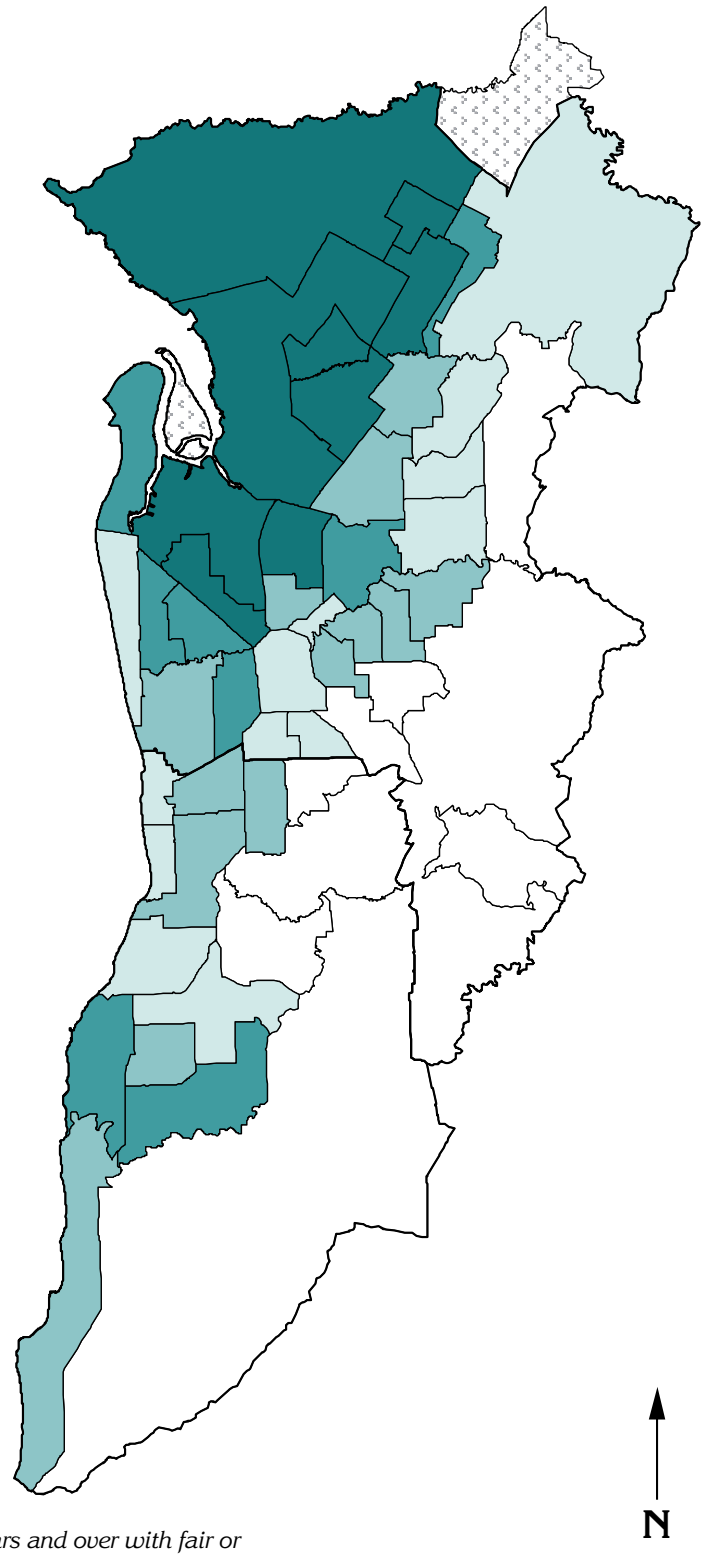
There were lower ratios than expected in Onkaparinga - Hills (80**, 1,442), Mitcham - Hills (81**, 3,334) and - North East (83**, 2,275), Onkaparinga - Reservoir (83**, 3,023) and Marion - South (85**, 2,397).

* **indicates statistical significance: see page 24**

Map 6.26
Estimates of fair or poor self-assessed health status, people aged 15 years and over, metropolitan regions, 2001



Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index) *, by SLA

- *116 and above*
- *108 to 115*
- *92 to 107*
- *84 to 91*
- *below 84*
- *data not mapped*#

*Index shows the estimated number of people aged 15 years and over with fair or poor self-assessed health status in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Estimates of overweight (not obese) males aged 15 years and over, 2001

Each increment in a person's body weight above their optimal level is associated with an increase in the risk of ill health. Overweight arises through an energy imbalance over a sustained period of time. While many factors may influence a person's weight, weight gain is essentially due to the energy intake from the diet being greater than the energy expended through physical activity. The energy imbalance need only be minor for weight gain to occur, and some people, due to genetic, biological and external factors, may be more likely to gain weight than others. Overweight is associated with higher mortality and morbidity, and those who are already overweight have a higher risk of becoming obese.

In 2001, it was estimated that 151,530 males aged 15 years and over were overweight (but not obese) (Table 6.30). There was a marginally higher standardised ratio (SR) in Southern, where the rate was one per cent above the expected level (an SR of 101*), compared to Central Northern which had the expected rate, of 368.5 per 1,000 males, for a population of its size and structure (an SR of 100).

Table 6.30: Estimates of overweight males aged 15 years and over, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	106,514	368.5	100
Southern	45,016	374.7	101*
Metropolitan regions	151,530	370.3	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

The majority of SLAs with elevated rates of overweight (not obese) males were located in the outer areas of Adelaide, from the north-east to the south-west; the lowest ratios were mainly concentrated in a band of SLAs around the city, as well as in a number of outer northern and southern SLAs (Map 6.27).

Central Northern Adelaide

Central Northern had an estimated 106,514 overweight (not obese) males (an SR of 100). SLAs with more overweight males than expected were Tea Tree Gully - North (an SR of 108**, 3,472 males), Playford - East Central (107**, 2,501) and - Hills (107, 424), Campbelltown - East (106**, 4,085), Tea Tree Gully - Central (105**, 3,861), Charles Sturt - Inner West (105**, 3,730), Adelaide Hills - Ranges (105, 1,534) and - Central (105**, 1,827), and Salisbury - North-East (105**, 3,252).

Large numbers of overweight males aged 15 years and over were usual residents in the SLAs of Tea Tree Gully - South (4,872 males, 103*), Salisbury - South-East (4,866, 103), Charles Sturt - Coastal (4,717, 101), West Torrens - West (4,222, 103*), and Port Adelaide Enfield - East (4,125, 100) and - Coast (4,087, 101).

SLAs with low ratios, having fewer overweight males than expected, included Port Adelaide Enfield - Port (an SR of 82**, 2,985 males) and - Inner (87**, 2,427), Playford - Elizabeth (84**, 2,846) and - West Central (87**, 1,400), Salisbury - Central (90**, 3,329) and - Inner North (91**, 2,795), Charles Sturt - North-East (94**, 3,402) and Adelaide (94**, 2,903).

Southern Adelaide

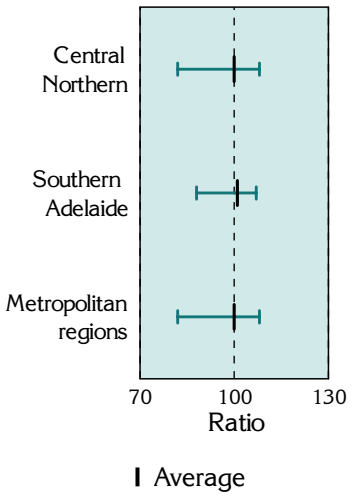
Southern had an estimated one per cent more overweight (not obese) males than expected from the metropolitan rates (an SR of 101*). The SLAs of Onkaparinga - Reservoir (an SR of 107**, 3,495 males), - Woodcroft (105**, 4,769) and - Hills (105*, 1,621) all had marginally elevated SRs.

Relatively large numbers of overweight males were usual residents in the SLAs of Marion - Central (4,766 males, an SR of 101) and - North (3,459, 98), Mitcham - Hills (3,546, 103) and Onkaparinga - Morphett (3,309, 103).

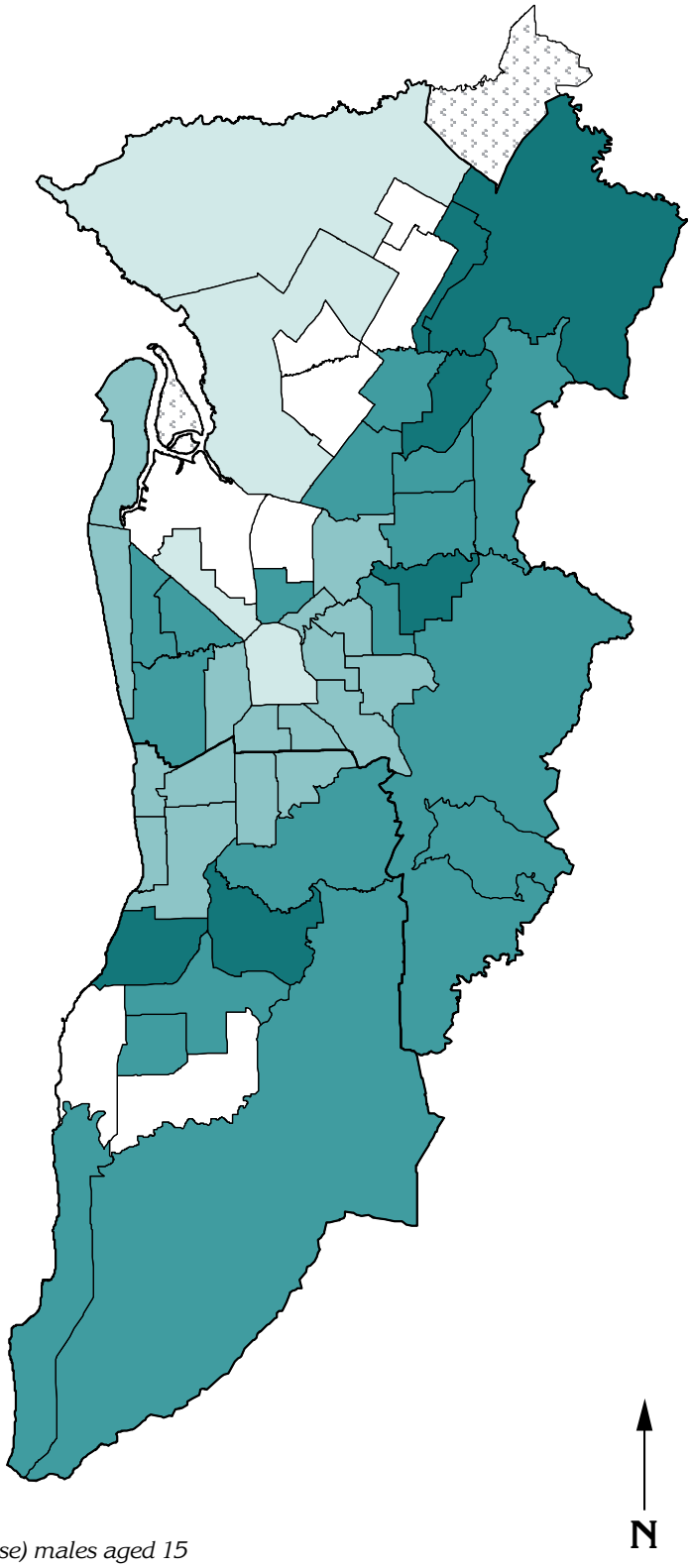
The lowest SRs in the region were calculated for the Onkaparinga SLAs of - North Coast (an SR of 88**, 2,244 males) and - Hackham (92**, 1,714).

* **indicates statistical significance: see page 24**

Map 6.27
Estimates of overweight (not obese) males aged 15 years and over, metropolitan regions, 2001



Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index) *, by SLA

- *106 and above*
- *103 to 105*
- *97 to 102*
- *94 to 96*
- *below 94*
- *data not mapped*#

*Index shows the estimated number of overweight (not obese) males aged 15 years and over in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Estimates of obese males aged 15 years and over, 2001

Over-consumption, or the consumption of more calories than are required to meet energy needs, is contributing to Australia's increase in obesity which, in turn, is a significant contributing factor in the development of many chronic diseases. Obesity can, in itself, lead to high blood pressure and high blood cholesterol. Excess body weight, high blood pressure and high blood cholesterol all contribute to the risk of heart disease and amplify each risk factor's effects if they occur together. Excess body fat also increases the risk of developing a range of other health problems, including type 2 diabetes, high blood pressure, certain cancers, sleep apnoea, osteoarthritis, psychological disorders and social problems.

It is estimated that 54,171 males aged 15 years and over in metropolitan regions at the 2001 NHS were obese, a rate of 132.4 per 1,000 males. The rate for Central Northern (133.8 per 1,000 males) was slightly higher than the rate for Southern (129.0); with a standardised ratio (SR) one per cent above the expected level in Central Northern, in contrast to three per cent below in Southern (Table 6.31).

Table 6.31: Estimates of obese males aged 15 years and over, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	38,673	133.8	101*
Southern	15,498	129.0	97**
Metropolitan regions	54,171	132.4	100

[1]**Age-standardised rate per 1,000 population**

[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

The majority of SLAs with elevated ratios were located in the north-western and outer northern and southern areas; ratios below average were mainly concentrated in the city and SLAs to the east and south-east (Map 6.28).

Central Northern Adelaide

In 2001, Central Northern had an estimated 38,673 males considered to be obese, one per cent more than expected (an SR of 101*); however, there were notable variations in ratios across the region. Playford - Elizabeth had over one third more obese males than expected (an SR of 139**, 1,642 males). The Salisbury SLAs of - Inner North (with an SR of 137**, 1,595 males), - Central (133**, 1,786) and Balance (127**, 373) all had highly elevated SRs, as well as Port Adelaide Enfield - Inner (127**, 1,237) and - Port (119**, 1,532). Playford - West (124**, 514), - West Central (123**, 720) and - East Central (111**, 971), and Charles Sturt - Inner West (111**, 1,366) also had elevated ratios.

Large numbers of obese males were estimated for the SLAs of Salisbury - South-East (1,825 males, an SR of 106*), Port Adelaide Enfield - Coast (1,566, 107**) and - East (1,510, 103), Tea Tree Gully - South (1,563, 93**), West Torrens - West (1,472, 105) and Charles Sturt - North East (1,336, 103).

The lowest ratios in Central Northern, with fewer obese males than expected, were estimated for Adelaide (an SR of 72**, 809 males), Burnside - South-West (75**, 771) and - North-East (76**, 765), Norwood Payneham St Peters - West (77**, 683), Unley - East (78**, 730) and - West (79**, 661), Adelaide Hills - Central (81**, 514) and - Ranges (82**, 445), Walkerville (81**, 278), Prospect (85**, 821) and Charles Sturt - Coastal (89**, 1,452).

Southern Adelaide

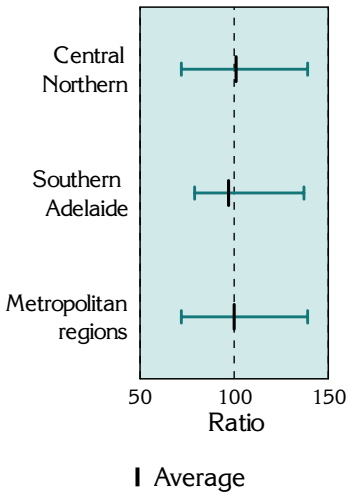
Southern had three per cent fewer obese males than expected from the metropolitan rates, a standardised ratio of 97** (15,498 males). Four Onkaparinga SLAs had the highest SRs in the region: Onkaparinga - Hackham (an SR of 137**, 934) and - North Coast (135**, 1,217) both had highly elevated SRs with over one third more obese males than expected. Onkaparinga - Morphett (108**, 1,267) and - South Coast (107, 1,198) also had elevated SRs.

Large numbers of obese males were recorded in the SLAs of Marion - Central (1,678 males, an SR of 103) and Onkaparinga - Woodcroft (1,590, 94*).

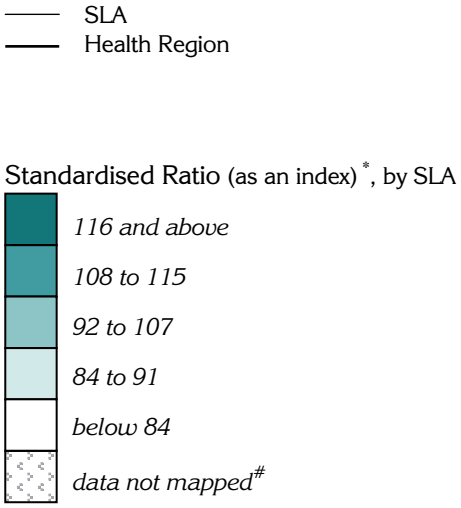
Below average ratios were calculated for Mitcham - North-East (an SR of 79**, 569 males), - Hills (82**, 1,001) and - West (87**, 949). Holdfast Bay - North (82**, 819) and - South (85**, 609), and Onkaparinga - Hills (87**, 483) also had fewer obese males than expected.

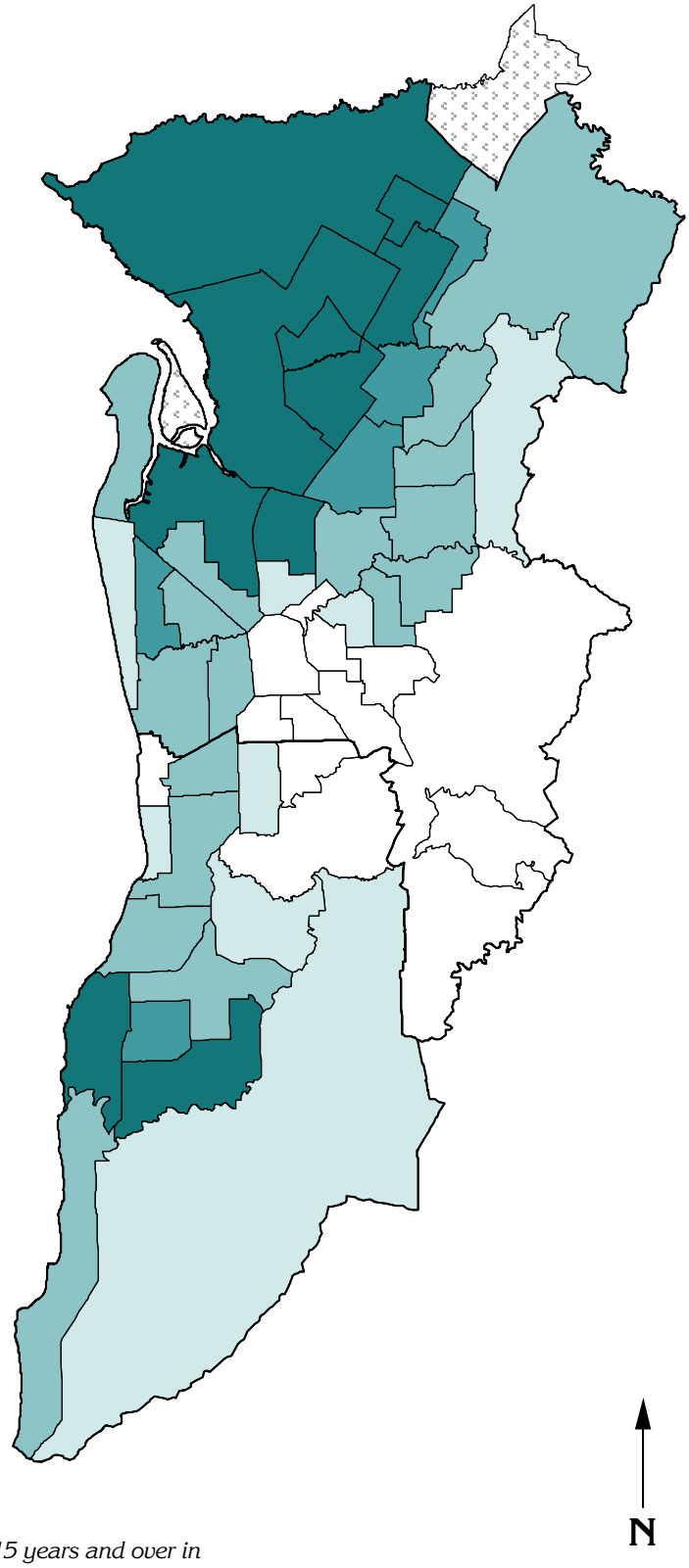
* **indicates statistical significance: see page 24**

Map 6.28
Estimates of obese males aged 15 years and over, metropolitan regions, 2001



Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.





*Index shows the estimated number of obese males aged 15 years and over in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Estimates of overweight (not obese) females aged 15 years and over, 2001

Each increment in a person's body weight above their optimal level is associated with an increase in the risk of ill health. Overweight arises through an energy imbalance over a sustained period of time. While many factors may influence a person's weight, weight gain is essentially due to the energy intake from the diet being greater than the energy expended through physical activity. The energy imbalance need only be minor for weight gain to occur, and some people, due to genetic, biological and external factors, may be more likely to gain weight than others. Overweight is associated with higher mortality and morbidity, and those who are already overweight have a higher risk of becoming obese.

It is estimated from the 2001 NHS that 91,012 females in the metropolitan regions aged 15 years and over were overweight (but not obese), a rate of 206.1 per 1,000 females. There was a marginally higher rate for females in Southern Adelaide (210.2 per 1,000) than in Central Northern (204.3). The Southern rate was two per cent higher than the expected rate for that population size and structure (a standardised ratio (SR) of 102**); in contrast, Central Northern had one per cent fewer overweight females (an SR of 99*) (Table 6.32).

Table 6.32: Estimates of overweight females aged 15 years and over, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	63,362	204.3	99*
Southern	27,650	210.2	102**
Metropolitan regions	91,012	206.1	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

The majority of SLAs with elevated ratios were located in outer areas, in the north-east, south-east and south; the lowest ratios were concentrated in a block of SLAs, including the city and extending from the north-west to the outer north (Map 6.29).

Central Northern Adelaide

Central Northern had 63,362 females estimated to be overweight (not obese) in 2001, one per cent fewer than expected (an SR of 99**). None of the ratios in this region were elevated by more than eight per cent. SLAs with elevated ratios included Adelaide Hills - Central (an SR of 108**, 1,101 females) and - Ranges (107*, 839), Burnside - South-West (107**, 2,042), Playford - Hills (105, 219), Burnside - North-East (105*, 1,987), Walkerville (104, 683), Unley - West (104, 1,505), Tea Tree Gully - Hills (103, 1,039) and West Torrens - West (103, 2,669).

Large numbers of overweight females were estimated for the SLAs of Charles Sturt - Coastal (2,846 females, an SR of 101), Tea Tree Gully - South (2,801, 100), Salisbury - South-East (2,751, 100), Port Adelaide Enfield - Coast (2,415, 101) and - East (2,373, 97), and Campbelltown - East (2,250, 97).

The lowest ratios in Central Northern, with fewer overweight females than expected, were estimated for Port Adelaide Enfield - Port (an SR of 89**, 1,940 females), Salisbury Balance (91, 346), Adelaide (92**, 1,238), Playford - West Central (92*, 815), Salisbury - Inner North (94*, 1,587), Port Adelaide Enfield - Inner (94*, 1,623) and Playford - Elizabeth (95*, 2,050).

Southern Adelaide

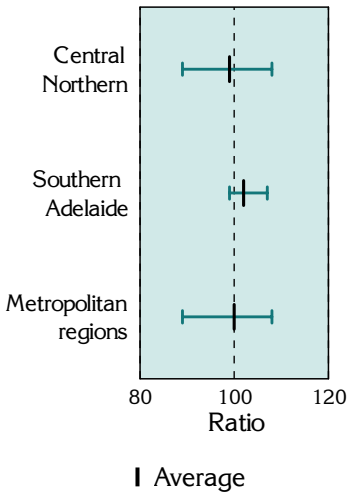
Southern had a ratio of 102** (27,650 overweight (not obese) females). The majority of SLAs in this region had marginally elevated ratios. Both Mitcham - North-East (1,493 females) and - Hills (2,188) each had an SR of 107**, and Onkaparinga - Reservoir had an SR of 105* (1,927 females). There were two per cent more overweight females than expected in the SLAs of Marion - Central (3,126 females) and - South (1,478), Onkaparinga - South Coast (1,842), - Hills (902) and - Hackham (1,058), and Holdfast Bay - South (1,398).

Large estimated numbers of overweight females aged 15 years and older were residents in Marion - North (2,392 females, an SR of 100), Mitcham - West (1,960, 100) and Onkaparinga - Morphett (1,954, 101).

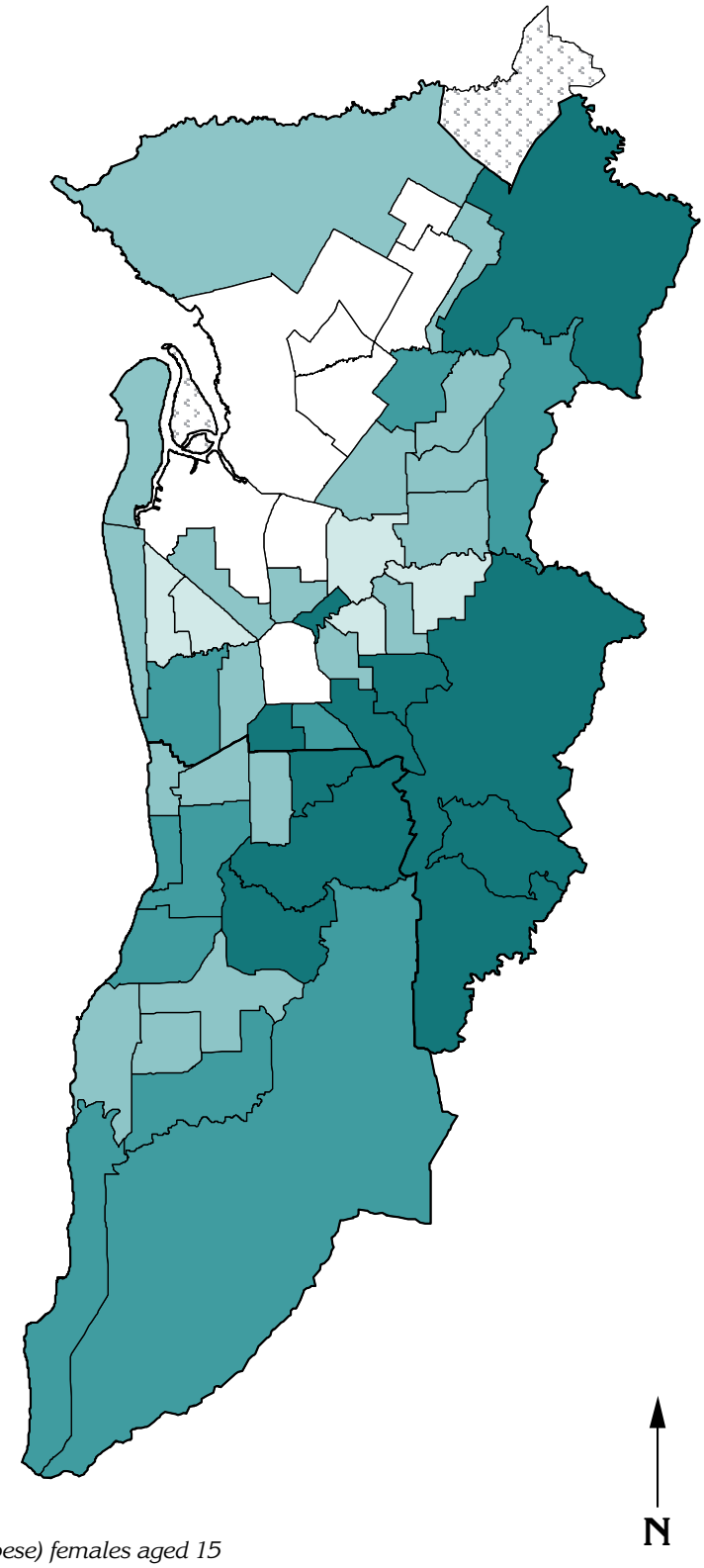
Onkaparinga - Woodcroft was the only Southern SLA to record a below average rate (an SR of 99, 2,586 females).

* **indicates statistical significance: see page 24**

Map 6.29
Estimates of overweight (not obese) females aged 15 years and over, metropolitan regions, 2001



Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index) *, by SLA

- *104 and above*
- *102 to 103*
- *99 to 101*
- *97 to 98*
- *below 97*
- *data not mapped*#

*Index shows the estimated number of overweight (not obese) females aged 15 years and over in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Estimates of obese females aged 15 years and over, 2001

Over-consumption, or the consumption of more calories than are required to meet energy needs, is contributing to Australia's increase in obesity which, in turn, is a significant contributing factor in the development of many chronic diseases. Obesity can, in itself, lead to high blood pressure and high blood cholesterol. Excess body weight, high blood pressure and high blood cholesterol all contribute to the risk of heart disease and amplify each risk factor's effects if they occur together. Excess body fat also increases the risk of developing a range of other health problems, including type 2 diabetes, high blood pressure, certain cancers, sleep apnoea, osteoarthritis, psychological disorders and social problems.

In 2001, it was estimated that there were 61,855 obese females aged 15 years and over in the metropolitan regions, a rate of 140.0 per 1,000 females (Table 6.33). The rate was higher for Central Northern, with a standardised ratio (SR) of 102**. Southern had fewer obese females than expected, with an SR of 96**.

Table 6.33: Estimates of obese females aged 15 years and over, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	44,104	142.2	102**
Southern	17,751	134.9	96**
Metropolitan regions	61,855	140.0	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

The majority of SLAs with elevated ratios were located in the inner and outer northern, western and north-western and outer southern areas; ratios below average were mainly concentrated in an area from the city to the east and south-east (Map 6.30).

Central Northern Adelaide

In 2001, Central Northern had an estimated 44,104 females considered to be obese, two per cent more than expected from the metropolitan rates (an SR of 102**). The most highly elevated ratios were calculated for Charles Sturt - Inner West (an SR of 122**, 1,782 females), Playford - West Central (119**, 755), Charles Sturt - Inner East (117**, 1,470), Playford - Elizabeth (117**, 1,648), Campbelltown - West (116**, 1,330), Charles Sturt - North-East (114**, 1,659), West Torrens - East (113**, 1,570) and - West (113**, 1,871), Salisbury - Inner North (113**, 1,415), - South-East (112**, 2,162) - North-East (110**, 1,384) and - Central (110**, 1,639), Playford - West (111**, 496), and Port Adelaide Enfield - Inner (111**, 1,221), - East (110**, 1,789) and - Coast (110**, 1,809).

Large numbers of overweight and obese females were estimated for Tea Tree Gully - South (1,816 females, an SR of 95*), Charles Sturt - Coastal (1,718, 92**), Campbelltown - East (1,560, 96) and Port Adelaide Enfield - Port (1,543, 108**).

The lowest ratios in Central Northern, with fewer obese females than expected, were estimated for Adelaide (an SR of 75**, 668 females), Adelaide Hills - Ranges (77**, 447) and - Central (80**, 586), Burnside - South-West (80**, 1,002) and - North-East (81**, 1,004), Walkerville (81**, 339), Unley - East (84**, 959) and - West (85**, 838), Tea Tree Gully - North (85**, 1,256) and - Hills (88**, 634), Norwood Payneham St Peters - West (87**, 902) and Playford - Hills (87, 138).

Southern Adelaide

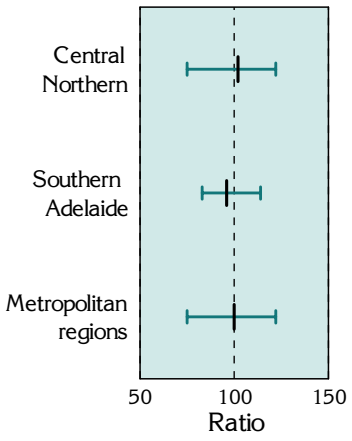
Southern had four per cent fewer obese females than expected from the metropolitan rates, a standardised ratio of 96** (17,751 females). The three most highly elevated SRs were mapped in the Onkaparinga SLAs of - North Coast (with an SR of 114**, 1,127 females), - Hackham (112**, 842) and - Morphett (111**, 1,496). Marion - North (110**, 1,659) also had an elevated SR.

Both Marion - Central (2,172 females, an SR of 109**) and Onkaparinga - Woodcroft (1,684, 89**) had large numbers of obese females aged 15 years and over.

Below average ratios were calculated for Mitcham - Hills (an SR of 83**, 1,163 females) and - North-East (83**, 749), Onkaparinga - Hills (84**, 522) and - Reservoir (84**, 1,147), and Marion - South (84**, 930).

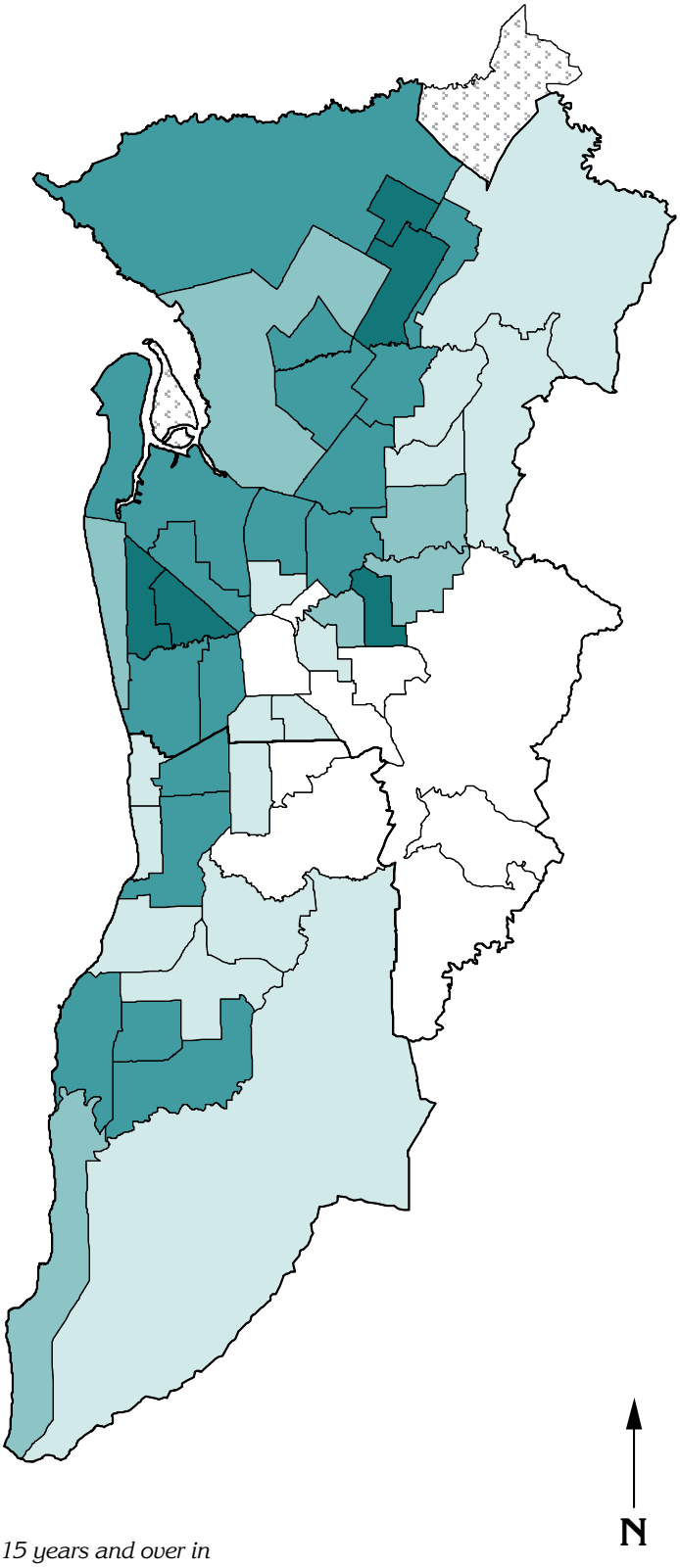
* **indicates statistical significance: see page 24**

Map 6.30
Estimates of obese females aged 15 years and over, metropolitan regions, 2001



Average

Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index) *, by SLA

- *116 and above*
- *108 to 115*
- *92 to 107*
- *84 to 91*
- *below 84*
- *data not mapped*#

*Index shows the estimated number of obese females aged 15 years and over in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Estimates of current smokers aged 18 years and over, 2001

Tobacco is the largest single cause of death and disease in Australia; and half of all regular smokers who commenced smoking as teenagers will be killed by their habit. Over 20% of adults and 25% of adolescents aged 12 to 17 years in Australia in 2004 smoked at least weekly. Smokers who consume more than forty cigarettes per day have mortality rates between two and three times that of non-smokers; and tobacco smoking has been estimated to cost $12.7 billion a year in health care expenses, lost productivity and other costs.

It was estimated that 199,583 people in the metropolitan regions in 2001 were current smokers, a rate of 247.3 people per 1,000 population. The rate in Southern was marginally higher than in Central Northern (248.0 compared to 247.0), although both regions had a standardised ratio (SR) of 100 (Table 6.34).

Table 6.34: Estimates of current smokers aged 18 years and over, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	141,295	247.0	100
Southern	58,288	248.0	100
Metropolitan regions	199,583	247.3	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

The most highly elevated ratios were mapped in a number of outer northern and southern SLAs, with low ratios in the east (Map 6.31), following the pattern of socioeconomic disadvantage shown in Chapters 4 and 5.

Central Northern Adelaide

In the Central Northern region, there were an estimated 141,295 current smokers, an SR of 100. Both Playford - West Central (with an SR of 124**, 2,768 people) and - Elizabeth (124**, 5,473) had almost one quarter more current smokers than expected from the metropolitan regions' rate. Other SLAs with elevated ratios included Salisbury - Inner North (an SR of 115**, 5,248 people), - Central (111**, 5,615), Balance (105, 1,185) and - North-East (105**, 4,397), Port Adelaide Enfield - Inner (110**, 3,942), - Port (109**, 5,064) and - Coast (107**, 5,551), and Playford - West (107**, 1,593) and - East Central (105**, 3,638).

Relatively large numbers of smokers were estimated for the SLAs of Salisbury - South-East (6,570 people, an SR of 104**), Tea Tree Gully - South (5,994, 98), Charles Sturt - Coastal (5,539, 98), Port Adelaide Enfield - East (5,424, 100), West Torrens - West (5,035, 99), Charles Sturt - North East (5,024, 104**) and Tea Tree Gully - Central (5,018, 100).

A number of SLAs in the region had low estimated numbers of smokers, most typically those SLAs with high socioeconomic status. The lowest ratios, with around 15% fewer smokers than expected from the metropolitan regions rates, included the SLAs of Burnside - North-East (an SR of 84**, 3,050 people), Walkerville (84**, 1,024) and Burnside - South-West (85**, 3,113). There were also relatively low ratios in Unley - East (87**, 3,170), Adelaide Hills - Central (88**, 1,998) and - Ranges (90*, 1,646), Adelaide (88**, 3,385), Norwood Payneham St Peters - West (90**, 3,178), Unley - West (91**, 2,904), Campbelltown - East (91**, 4,590) and - West (94**, 3,288), Prospect (93**, 3,471), Norwood Payneham St Peters - East (94**, 2,766) and Tea Tree Gully - North (95**, 4,637).

Southern Adelaide

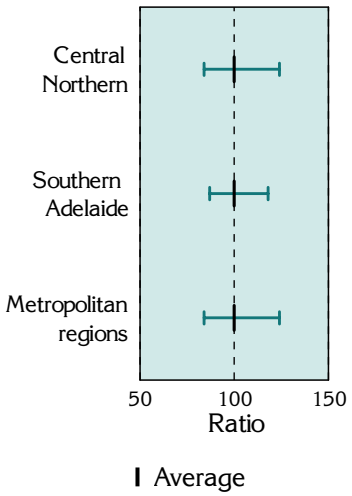
Southern had an estimated 58,288 current smokers aged 18 years and over in 2001 (an SR of 100). The four most highly elevated standardised ratios were mapped for the Onkaparinga SLAs of - North Coast (an SR of 118**, 3,705 people), - Hackham (116**, 2,965), - Morphett (109**, 4,806) and - South Coast (108**, 4,465).

Relatively large numbers of smokers were estimated for Onkaparinga - Woodcroft (6,473 people, an SR of 101), Marion - Central (5,978, 102), - North (4,721, 103*) and - South (3,556, 96*), and Holdfast Bay - North (3,402, 97).

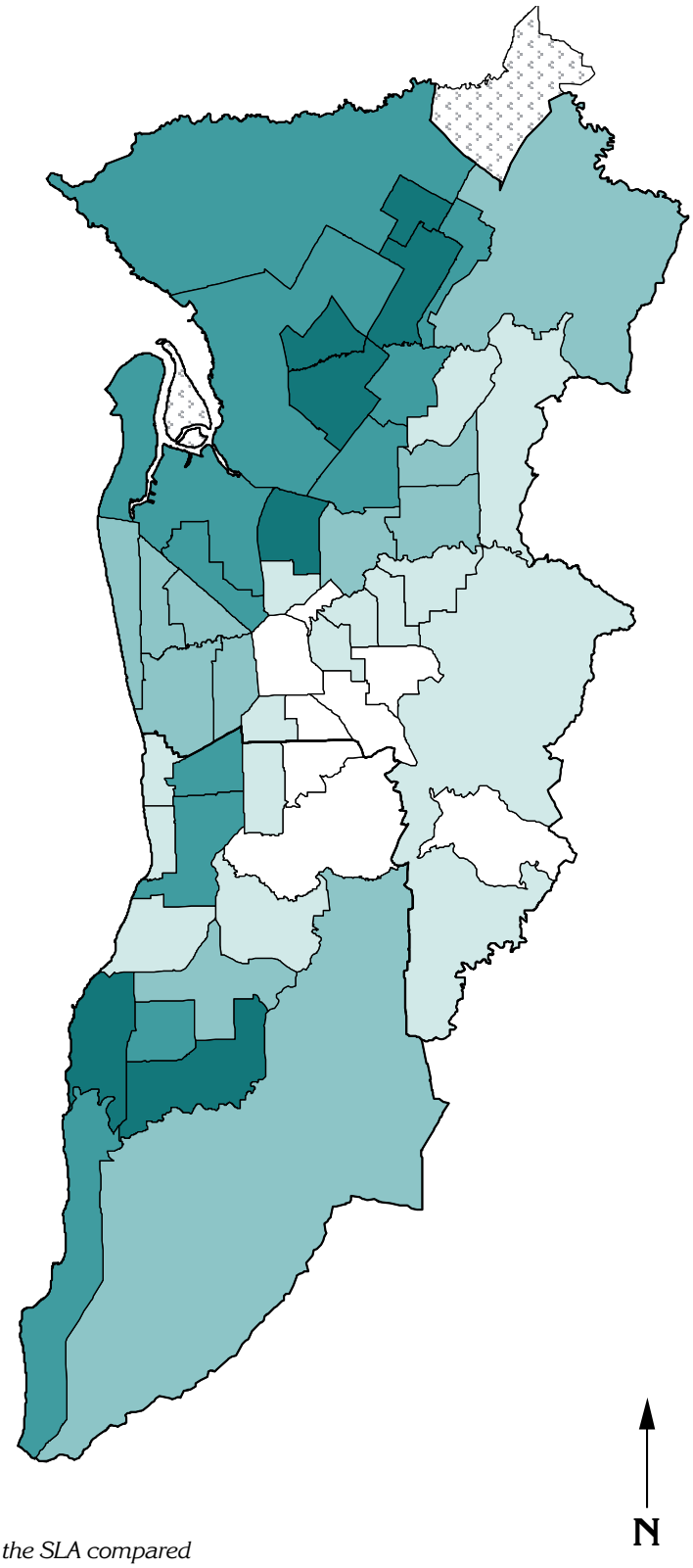
There were fewer than expected smokers in the Mitcham SLAs of - Hills (87**, 3,764 people), - North-East (87**, 2,294) and - West (93**, 3,761). There were also low ratios in Onkaparinga - Reservoir (93**, 4,164) and Holdfast Bay - South (95*, 2,388).

* **indicates statistical significance: see page 24**

Map 6.31
Estimates of current smokers aged 18 years and over, metropolitan regions, 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index) *, by SLA

- *110 and above*
- *102 to 109*
- *98 to 101*
- *90 to 97*
- *below 90*
- *data not mapped#*

*Index shows the estimated number of current smokers in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Estimates of physical inactivity, people aged 15 years and over, 2001

Physical inactivity is defined as those aged 15 years and over who did not exercise in the two weeks prior to interview for the 2001 NHS, by participating in sport, recreation or fitness (including walking). Physical inactivity as a risk factor has been estimated to cause the second highest burden of premature death and illness in Australia, after tobacco smoking.

It is estimated that 270,260 people aged 15 years and over did not exercise in the two weeks prior to interview; this is a rate of 317.6 people per 1,000 population (Table 6.35). The rate of physical inactivity in Central Northern was one per cent higher than expected based on the metropolitan regions' rate (a standardised ratio (SR) of 101**), compared to three per cent lower than expected in Southern (an SR of 97**).

Table 6.35: Estimates of physical inactivity, people aged 15 years and over, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	192,153	321.2	101**
Southern	78,107	309.1	97**
Metropolitan regions	270,260	317.6	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

The most highly elevated SRs were mapped in the outer north, with marginally elevated SRs in the north, west and outer south. This configuration, and the low ratios in the east and south-east of the city (Map 6.32), repeats the pattern of socioeconomic disadvantage shown in Chapters 4 and 5.

Central Northern Adelaide

In Central Northern, 192,153 people were estimated as being physically inactive (an SR of 101**); however, there were notable variations in ratios across the region. Highly elevated ratios were mapped in the SLAs of Playford - West (an SR of 126**, 2,397 people), Port Adelaide Enfield - Port (121**, 7,810), and Salisbury Balance (122**, 1,548), - Inner North (120**, 6,305) and - Central (119**, 7,647). Other SLAs with elevated SRs included Charles Sturt - North East (113**, 7,311), Playford - West Central (112**, 3,059) and - East Central (112**, 4,523), Salisbury - South-East (111**, 9,077) and - North-East (110**, 5,813), Port Adelaide Enfield - Inner (111**, 5,655) and Charles Sturt - Inner West (110**, 7,046).

There were estimated to be large numbers of physically inactive people in the SLAs of Tea Tree Gully - South (8,047 people, an SR of 97**), Port Adelaide Enfield - East (7,622, 105**) and - Coast (7,467, 104**), West Torrens - West (7,326, 97**), Campbelltown - East (6,776, 100), Playford - Elizabeth (6,759, 108**) and West Torrens - East (6,496, 104**).

Low ratios were estimated for the SLAs of Adelaide (79**, 3,723), Burnside - South-West (82**, 4,519), Norwood Payneham St Peters - West (83**, 3,813), Walkerville (83**, 1,558), Adelaide Hills - Central (84**, 2,536), Unley - East (85**, 4,266) and - West (85**, 3,626), Burnside - North East (86**, 4,675), Adelaide Hills - Ranges (87**, 2,105) and Charles Sturt - Coastal (90**, 7,489).

Southern Adelaide

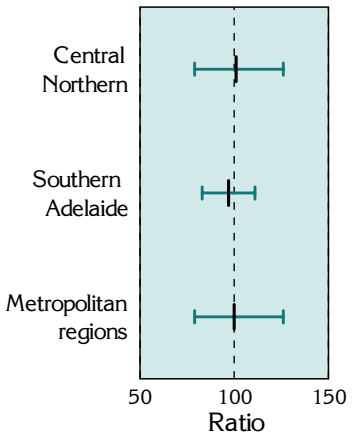
Southern had three per cent fewer people who were estimated to be physically inactive than expected from the metropolitan rates, a standardised ratio of 97** (78,107 people). The Onkaparinga SLAs of - Hackham (111**, 3,546), - Morphett (109**, 6,285), - South Coast (107**, 5,792) and - North Coast (107**, 4,786) all had elevated ratios.

Both Marion - Central (8,835 people, an SR of 101) and - North (6,956, 102), Onkaparinga - Woodcroft (7,803, 99) and - Reservoir (5,240, 93**), and Mitcham - West (5,422, 93**) had large estimated numbers of physically inactive residents.

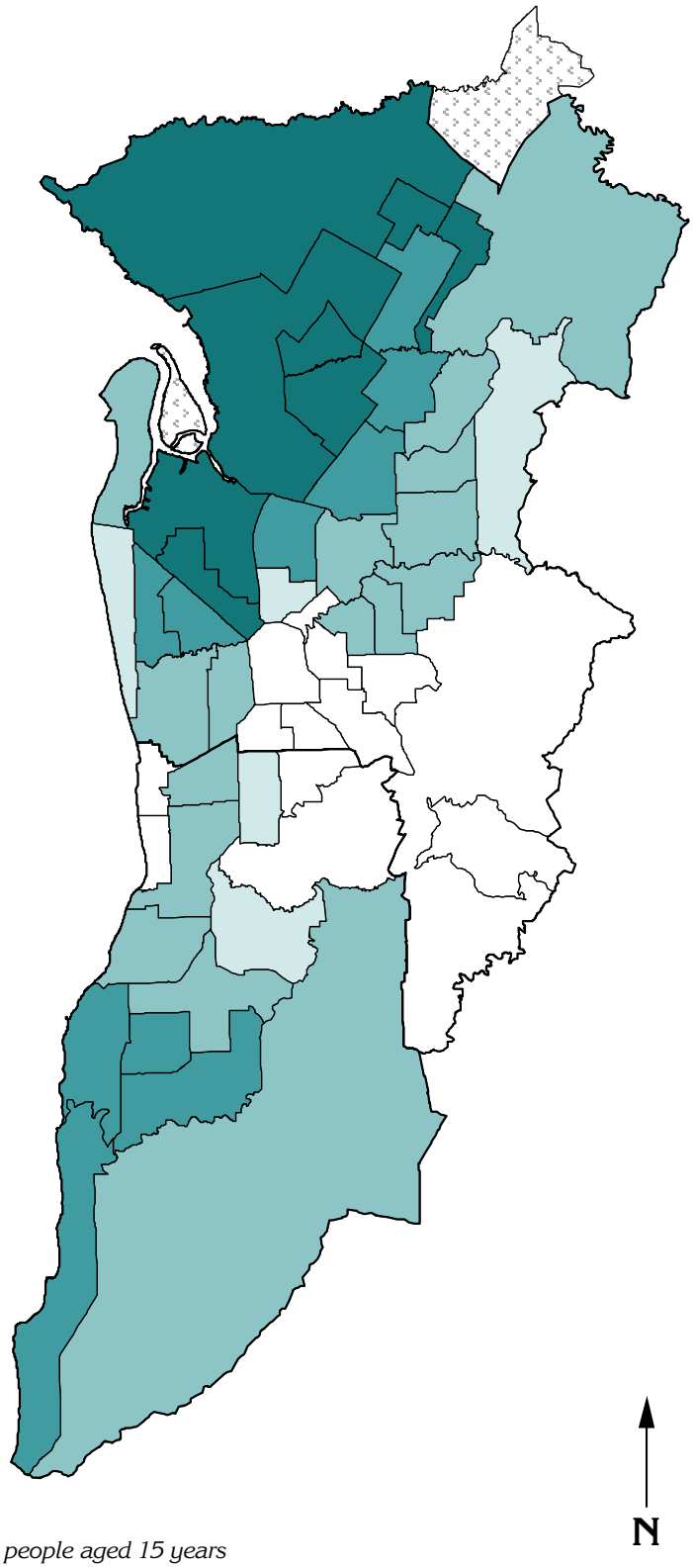
In the Southern region, low ratios were estimated for the Mitcham SLAs of - North-East (83**, 3,355), and - Hills (84**, 5,096), and the Holdfast Bay - North (86**, 4,622) and - South (87**, 3,439).

* **indicates statistical significance: see page 24**

Map 6.32
Estimates of physical inactivity, people aged 15 years and over, metropolitan regions, 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index) *, by SLA

- *112 and above*
- *106 to 111*
- *94 to 105*
- *88 to 93*
- *below 88*
- *data not mapped#*

* *Index shows the estimated number of physically inactive people aged 15 years and over in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions*

#*Data were not mapped for Torrens Island (mapped with Port Adelaide)*

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Estimates of high health risk due to alcohol consumed, people aged 18 years and over, 2001

The 2001 NHS collected information on alcohol consumption, presented here as estimates of those at 'high health risk' due to the amount of alcohol consumed - defined as a daily consumption of more than 75 ml (three standard drinks) for males and 50 ml (two standard drinks) for females. Excessive alcohol consumption is a major risk factor for morbidity and mortality.

The rate of high health risk due to alcohol consumed per 1,000 population aged 18 years and over is estimated to be 39.6 for the metropolitan regions, with a slightly higher rate in Southern (41.3 per 1,000 population) compared to Central Northern (38.9) (Table 6.36Table).

Table 6.36: Estimates of high health risk due to alcohol consumed, 2001

Region	No.	Rate[1]	Ratio[2]
Central Northern	22,151	38.9	98**
Southern	9,780	41.3	104**
Metropolitan regions	31,931	39.6	100

[1]**Age-standardised rate per 1,000 population**
[2]**Percentage variation in the region from the ratio of 100 in the metropolitan regions**

Metropolitan regions

SLAs with the most highly elevated ratios were scattered throughout the regions, with the largest concentration in the outer north; the lowest SRs were largely in a number of the north-western and northern SLAs (Map 6.33).

Central Northern Adelaide

Central Northern had a lower ratio than Southern, with two per cent fewer people estimated as having a high health risk due to alcohol consumed than expected from the metropolitan rates (a standardised ration (SR) of 98**, 22,151 people). Within this region, there were highly elevated ratios in Playford - Elizabeth (119**, 824 people), - West Central (118**, 401) and - Hills (an SR of 113, 93), Norwood Payneham St Peters - West (116**, 632), Unley - West (113**, 576) and - East (109*, 627), Port Adelaide Enfield - Coast (109*, 916), Adelaide Hills - Ranges (107, 332) and - Central (106, 397), Walkerville (106, 213) and Burnside - South-West (106, 637).

Large estimated numbers were calculated for Charles Sturt - Coastal (974 people, an SR of 103), Salisbury - South-East (966, 95), Tea Tree Gully - South (952, 96) and - Central (817, 103), Port Adelaide Enfield - East (816, 95), and West Torrens - West (774, 94) and - East (763, 102).

A number of SLAs in this region had low ratios of health risk due to alcohol consumption. These included Campbelltown - East (80**, 650 people) and - West (83**, 460), Charles Sturt - Inner West (83**, 607) and - North East (84**, 652), Port Adelaide Enfield - Port (85**, 629), Salisbury Balance (an SR of 86, 148) and Charles Sturt - Inner East (88**, 570).

Southern Adelaide

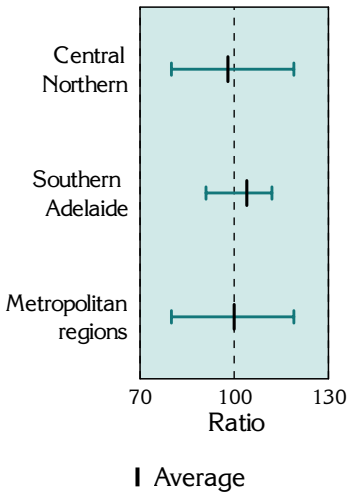
In Southern, there were 9,780 people estimated as having a high health risk due to alcohol consumed (an SR of 104**). Marginally elevated ratios were mapped in Onkaparinga - North Coast (an SR of 112**, 577 people), - Reservoir (111**, 786), - Hackham (107, 436) and - South Coast (107, 701), Holdfast Bay - North (112**, 637), Mitcham - North-East (108, 465) and - Hills (106, 753), and Marion - North (106, 782).

In Southern, there were large numbers of people estimated as having a high health risk due to alcohol consumed in Onkaparinga - Woodcroft (1,043 people, 103) and - Morphett (743, 105), and Marion - Central (981, 102).

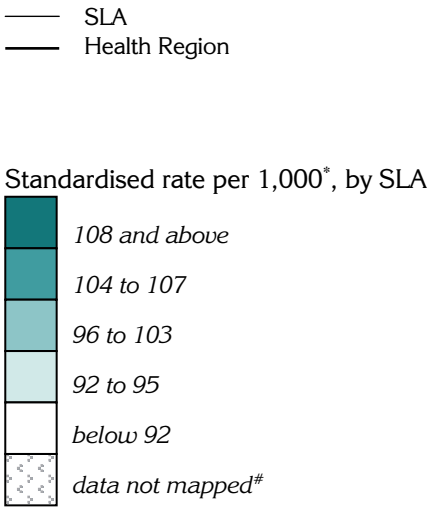
SLAs with fewer than the expected number of people at high health risk due to alcohol consumption included Mitcham - West (91*, 589) and Marion - South (95, 548).

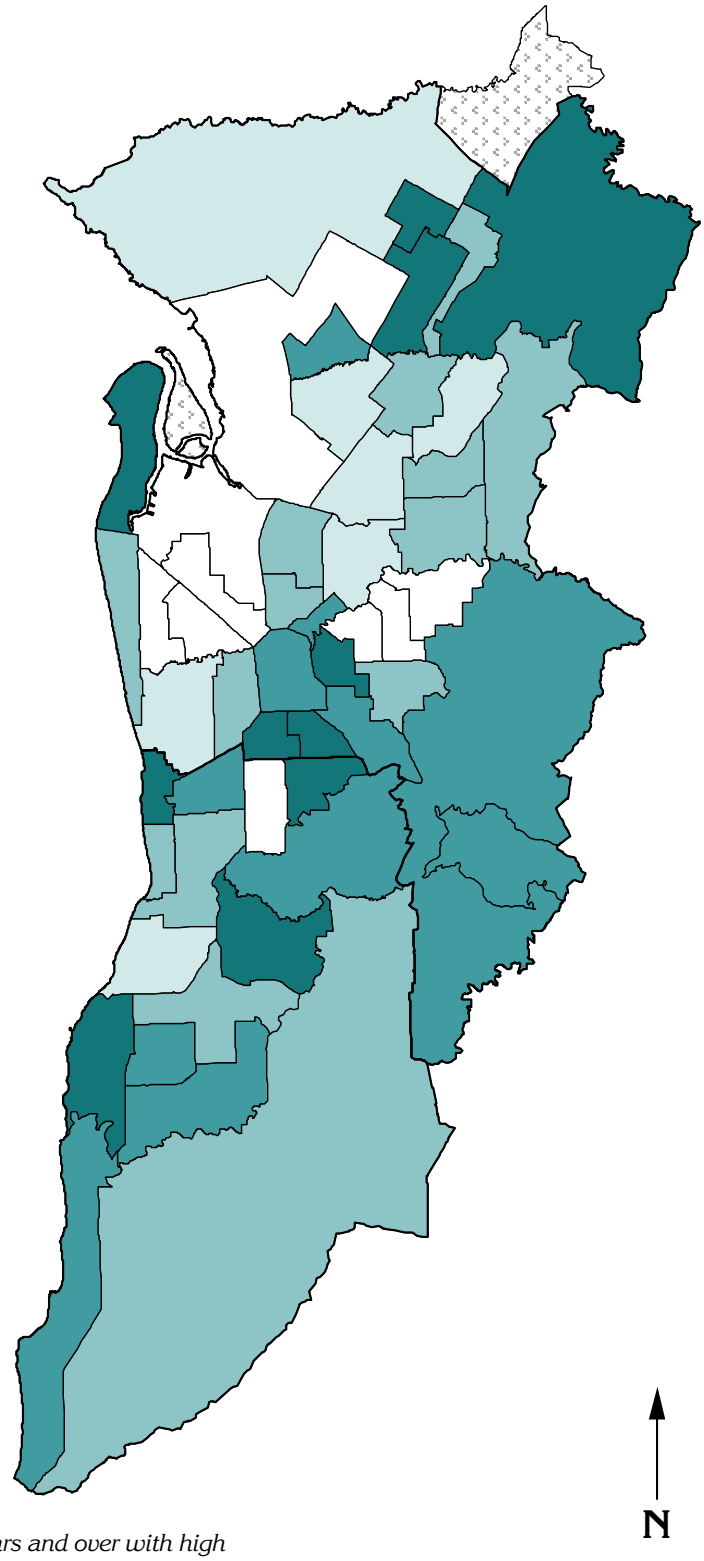
* **indicates statistical significance: see page 24**

Map 6.33
Estimates of high health risk due to alcohol consumed, people aged 18 years and over, metropolitan regions, 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.





*Index shows the estimated number of people aged 18 years and over with high health risk due to alcohol consumed in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide)

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

A Social Health Atlas of South Australia, 2006

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Cancer incidence

Cancer is a disease of the body's cells caused by alterations in the genes of the cells that control their growth (CCSA 1999). 'Cancer' is also the name commonly used to describe a malignant disease that may occur in any part of the body. Over one hundred different cancers have been described (CCSA 1999).

Cancer has afflicted human populations since pre-historic times, and the causes are not yet fully understood. Factors in our environment that are cancer-causing or cancer-promoting include tobacco smoke, ultra-violet radiation from sunlight, hazardous substances (e.g. in uranium mines; asbestos; benzene), and certain viruses (e.g. HIV, Hepatitis B) (CCSA 1999).

Cancer incidence is defined as the number of cases first notified for a given population during a specific time period. The data provided here are for malignant neoplasms (confirmed by pathological examination) and were provided from the South Australian Cancer Registry, maintained by the Epidemiology Branch, South Australian Department of Health. A principal function of population-based cancer registries is to monitor the burden of cancer on populations for health service planning and evaluation. Incidence and mortality data show emerging trends and suggest the effectiveness of disease-control initiatives (SA Cancer Registry 2001). In this section of the atlas, the incidence data have been aggregated for the years 1986 to 1993 and 1998 to 2002, to ensure a sufficient number of cases for analysis at the SLA level.

Trend analyses undertaken by the SA Cancer Registry showed that, despite substantial increases in incidence in males, age-standardised cancer mortality rates (all sites) reduced between the periods 1977 to 1981 and 1997 to 1999, largely due to reductions in cancers of the lung, stomach, prostate, colon and testis. The mortality rate for 2000 gave further evidence of a decline for all sites in aggregate (SA Cancer Registry 2001).

By comparison, cancer mortality rates (all sites) increased in females between the periods 1977 to 1981 and 1987 to 1991, but then decreased. The increase was affected by higher mortality rates for lung cancer, whereas the decrease was influenced by declines for cancers of the breast, cervix, stomach and colon. During 2000, the mortality rate (all sites) showed evidence of a further decline (SA Cancer Registry 2001).

During 1997 to 2000, the mortality rate for female-breast cancer increased by three per cent for women aged less than 50 years; decreased by 19% for 50 to 69 year old women; and decreased by 13% for older women. The reductions in mortality for women aged 50 years and over have been attributed to screening effects and advances in adjuvant therapy (SA Cancer Registry 2001).

The incidence of cancer among Indigenous people varies across Australia, but generally lung cancer is the most common cancer among Indigenous males, and lung and cervix cancer the most common among Indigenous females (Coory et al. 2000). Apart from these cancers, the incidence of cancers of the liver and pancreas and smoking-related cancers (including lung cancer) tends to be higher for Indigenous than non-Indigenous people; and that of breast and colorectal cancer and malignant melanoma lower for Indigenous than non-Indigenous people (AIHW 2003). Studies of cancer incidence among Indigenous people in Western Australia, South Australia, Northern Territory and Queensland for the period 1997 to 2001 have also shown higher rates of lung, liver, pancreatic and oesophageal cancers among Indigenous males, and higher rates of cancer of the cervix and myeloid leukaemia among Indigenous females in these jurisdictions (AIHW 2003).

For all cancers, the incidence rates for Indigenous people are generally lower than those for non-Indigenous people or the total population (ABS & AIHW 2001). In contrast, death rates from cancer are higher for Indigenous than non-Indigenous people or the total population (ABS 2002). Some of the difference between the relative incidence and mortality of cancer overall may be due to the more complete identification of Indigenous people for deaths than for cancer incidence. Some of the difference is likely also to be due to the higher proportions of more fatal cancers (such as cancers of the lung, liver and pancreas) in Indigenous than non-Indigenous people (AIHW 2003).

For specific cancers, the greater difference between Indigenous and non-Indigenous people in deaths from cancer could be due to more advanced stages of cancer at the time of diagnosis, or differences in treatment outcomes after adjusting for stage of cancer at diagnosis (AIHW 2003). A study conducted by the South Australian Cancer Registry of 139 cases of cancer diagnosed among Indigenous people from South Australia in the period 1988 to 1994 found a lower survival compared with 417 cases among non-Indigenous people, matched by site, age at diagnosis, sex, diagnostic year, and, where possible, histological type (SAHC 1997). The higher fatality for Indigenous cases was only partly explained by the more advanced stage at diagnosis, raising the prospect of differences in treatment outcomes by stage (AIH 2003).

Cancer incidence, 1998 to 2002

Cancer is a disease of the body's cells caused by alterations in the genes of the cells that control their growth (CCSA 1999). 'Cancer' is the name commonly used to describe a malignant disease that may occur in any part of the body. Cancer has afflicted human populations since pre-historic times, and the causes are not yet fully understood. Factors in our environment that are cancer-causing or cancer-promoting include tobacco smoke, excessive alcohol consumption, ultra-violet radiation from sunlight, hazardous substances (e.g. in uranium mines; asbestos; benzene), and certain viruses (e.g. HIV, Hepatitis B) (CCSA 1999).

The incidence of cancer in South Australia increased by nearly one-quarter (22.4%) between 1986 to 1993, and 1998 to 2002, with similar increases in the rate of new cases of cancer in both Metropolitan Adelaide and country South Australia (Table 6.37). Note that the number of cases counts individuals more than once where any individual had more than one primary cancer in each of these periods.

Table 6.37: Cancer incidence

Age-standardised incidence rate per 100,000

Area	1986-1993	1998-2002	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	417	511	22.5
Country	414	501	21.0
South Australia	416	509	22.4

[1]**Per cent change over eleven years in the rate of cancer incidence**

Metropolitan regions

There were 27,636 new cases of cancer in the metropolitan regions (excluding Gawler) between 1998 and 2002, one per cent more than expected from the State rates (a standardised incidence ratio (SIR) of 101) (Table 6.38). There was little variation at the regional level, with three per cent more cases than expected in Southern (an SIR of 103**), and the expected number in Central Northern (100).

No consistent relationship was evident between cancer incidence and socioeconomic status in either the map (Map 6.34) or the correlation analysis (Table 8.1).

Central Northern Adelaide

There were 19,112 new cases of cancer in Central Northern over the five years from 1998 to 2002. Salisbury - Inner North had 25% more cases than expected (an SIR of 125**, 425 cases). Elevated standardised incidence ratios were also found in Port Adelaide Enfield - Coast (117**, 871 cases), Adelaide (115**, 367), Tea Tree Gully - Central (111**, 564), West Torrens - East (109*, 731) and Prospect (107*, 512).

Relatively large numbers of new cases were recorded for people in Charles Sturt - Coastal (983 cases, an SIR of 103), West Torrens - West (932, 99), Tea Tree Gully - South (793, 100), Port Adelaide Enfield - East (776, 103), Charles Sturt - Inner West (746, 97), Port Adelaide Enfield - Port (724, 99), Salisbury - South-East (721, 99), Playford - Elizabeth (677, 102), Charles Sturt - North-East (688, 96), Campbelltown - East (669, 103), Burnside - South-West (655, 104) and - North-East (640, 95), and Port Adelaide Enfield - Inner (626, 100).

The lowest ratios were recorded in the SLAs of Playford - Hills (an SIR of 72*, 39), Salisbury Balance (75*, 51) and Salisbury - Central (80**, 431), Playford - West (82*, 124), Campbelltown - West (89*, 571) and Norwood Payneham St Peters - West (89*, 427). Other SLAs with ratios below the State average were Charles Sturt - Inner East (90**, 618), Norwood Payneham St Peters - East (91*, 516), Burnside - North-East (95, 640), Tea Tree Gully - Hills (93, 260) and Walkerville (94, 220).

Southern Adelaide

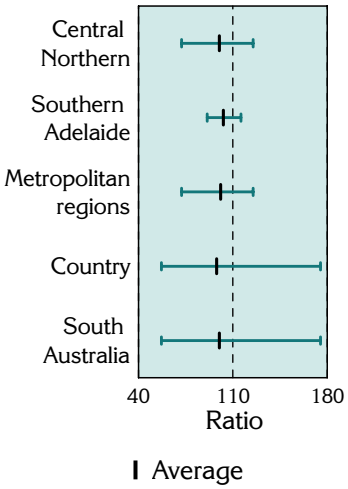
In Southern, there were 8,524 new cases of cancer over the five years from 1998 to 2002. The most highly elevated ratios in the region were in Onkaparinga - Woodcroft (an SIR of 116**, 659 cases), Marion - Central (113**, 1,225), Onkaparinga - North Coast (107, 513) and Onkaparinga - Reservoir (107, 457).

There were large numbers of new cases of cancer in Marion - North (946 cases, SIR of 106), Holdfast Bay - North (721, 103), and Mitcham - West (645, 91*) and - Hills (611, 101).

The lowest numbers of new cases of cancer and lower than expected ratios (though none of which was statistically significant) were recorded in the SLAs of Onkaparinga - Hackham (234 cases, an SIR of 92) and - Hills (262, 97), and Marion - South (279, 94).

* **indicates statistical significance: see page 24**

Map 6.34
Cancer incidence, metropolitan regions, 1998 to 2002

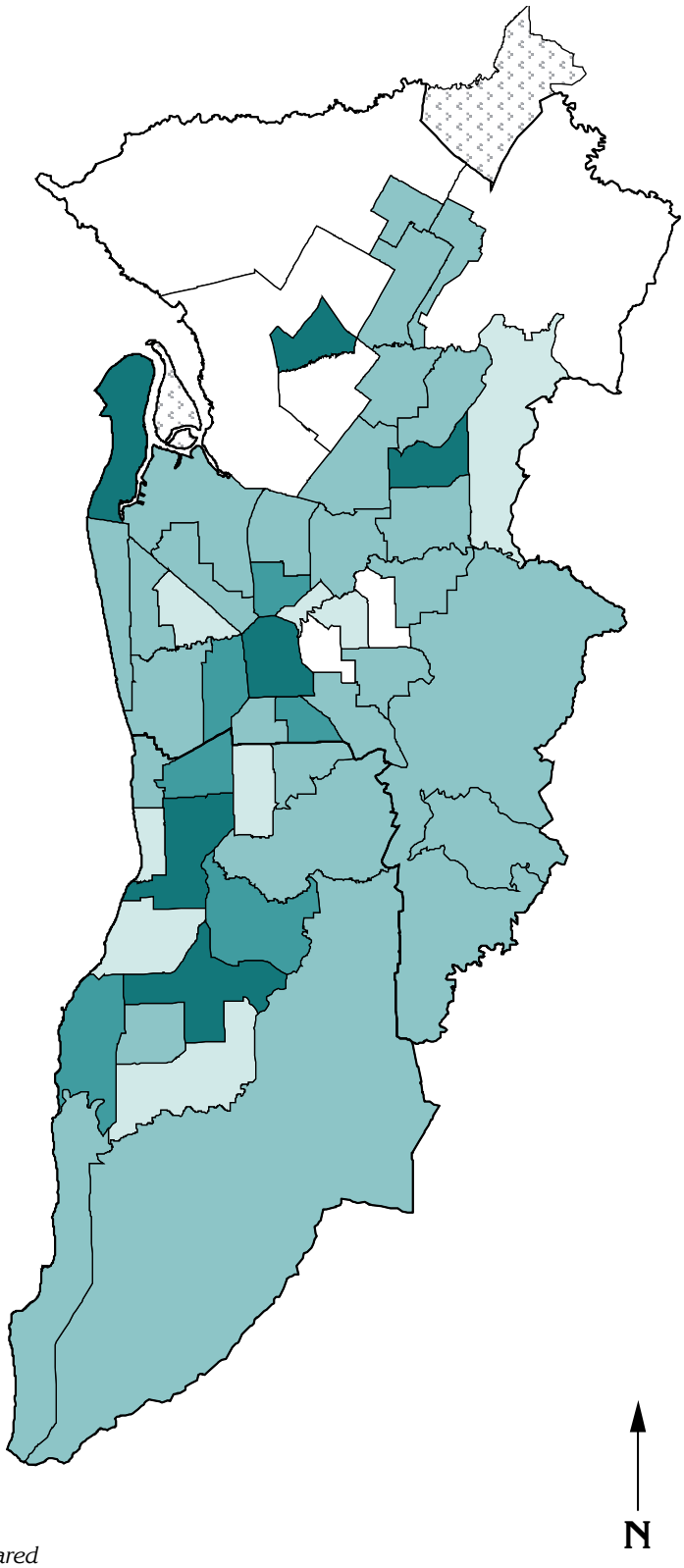


Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

SLA
Health Region

Standardised Incidence Ratio (as an index)*, by SLA

- *110 and above*
- *105 to 109*
- *95 to 104*
- *90 to 94*
- *below 90*
- *data not mapped#*



*Index shows the number of new cancers in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

There were 10,435 new cases of cancer in country South Australia in the period 1998 to 2002, two per cent fewer than expected from the State rates (a standardised incidence ratio (SIR) of 98).

Across the State, there was notable variation in cancer incidence, with many SLAs with ratios in excess of ten per cent above or below the State ratio of 100 (Map 6.35). At the regional level, there was less variation, with the highest ratio, recorded for residents of **Riverland**, just 102 (874 cases) and the lowest, in **Northern and Far Western**, being 94* (984 cases).

Table 6.38: Regional totals, cancer incidence, 1998 to 2002

Region	No.	SIR
Hills Mallee Southern	2,878	98
Wakefield[1]	2,568	98
South East	1,443	97
Northern & Far Western	984	94*
Eyre	808	99
Mid North	881	100
Riverland	874	102
Country SA	**10,435**	**98**
Central Northern	19,112	100
Southern	8,524	103*
Metropolitan regions	**27,636**	**101**
South Australia	**38,085**	**100**

[1] **Gawler is included in Wakefield region**

Cancer incidence was weakly correlated at the SLA level with a number of the indicators of disadvantage. This result, together with the weak inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggests a weak association at the SLA level between cancer incidence and socioeconomic disadvantage in country South Australia (Table 8.2).

The Regions

The only elevated SIR in country South Australia was in **Riverland**, but with just two per cent more new cases than expected (874 cases). The most highly elevated ratio of statistical significance was in Berri and Barmera - Berri (an SIR of 112, 170 cases). The SIR of 175 in Unincorporated Riverland was not statistically significant, and was based on only five new cases of cancer.

There were 881 new cases of cancer in **Mid North** over the five years from 1998 to 2002 (a standardised incidence ratio (SIR) of 100), with an elevated ratio in Unincorporated Pirie (an SIR of 121, nine cases). Port Pirie City also had an elevated ratio (108, 409). Peterborough (an SIR of 86, 56) and Orroroo/Carrieton (an SIR of 88, 31) both had ratios below the State average. None of the ratios in the region were statistically significant.

In **Eyre**, there were 808 new cases of cancer in the period 1998 to 2002, an SIR of 99. Streaky Bay had 40% more new cases than expected (an SIR of 140**, 64 cases), followed by Unincorporated West Coast (an SIR of 135, 13) and Le Hunte (an SIR of 111, 40). In contrast, Lower Eyre Peninsula had 33% fewer new cases than expected (an SIR of 67**, 67 cases). There were also fewer than expected new cases in Elliston (an SIR of 78, 22), Kimba (an SIR of 87, 33), Cleve (an SIR of 88, 44) and Ceduna (an SIR of 90, 60). There were 333 new cases of cancer in Port Lincoln (an SIR of 107).

Hills Mallee Southern had the largest number of new cases (2,878 cases), although this was two per cent fewer than expected from the State rates (an SIR of 98). The Coorong had nine per cent more cases than expected, an SIR of 109 (163 cases). There were 26% fewer cases than expected in Southern Mallee (an SIR of 74*, 47 cases). Large numbers of new cases were recorded for Victor Harbor (454 cases, an SIR of 102), Murray Bridge (440, 103) and Alexandrina - Coastal (310, 94).

Wakefield also had a large number of new cases (2,568 new cases) and the same SIR of 98. There were elevated ratios in Yorke Peninsula - North (an SIR of 116*, 304 cases) and Wakefield (109, 189). The SLAs of Barossa - Angaston (an SIR of 83*, 168 cases), - Barossa (an SIR of 87, 135) and - Tanunda (an SIR of 89, 115), and Goyder (an SIR of 85, 109) all had fewer than expected new cases of cancer. Gawler (422 cases, an SIR of 92), Copper Coast (394, 108) and Yorke Peninsula - North (304, 116*) had large numbers of new cases.

South East had 1,443 new cases of cancer registered (an SIR of 97), with an elevated ratio in Wattle Range - West (115*, 266), and a low ratio in Grant (an SIR of 88, 156); Mt Gambier had a large number of new cases of cancer (483 cases, an SIR of 92).

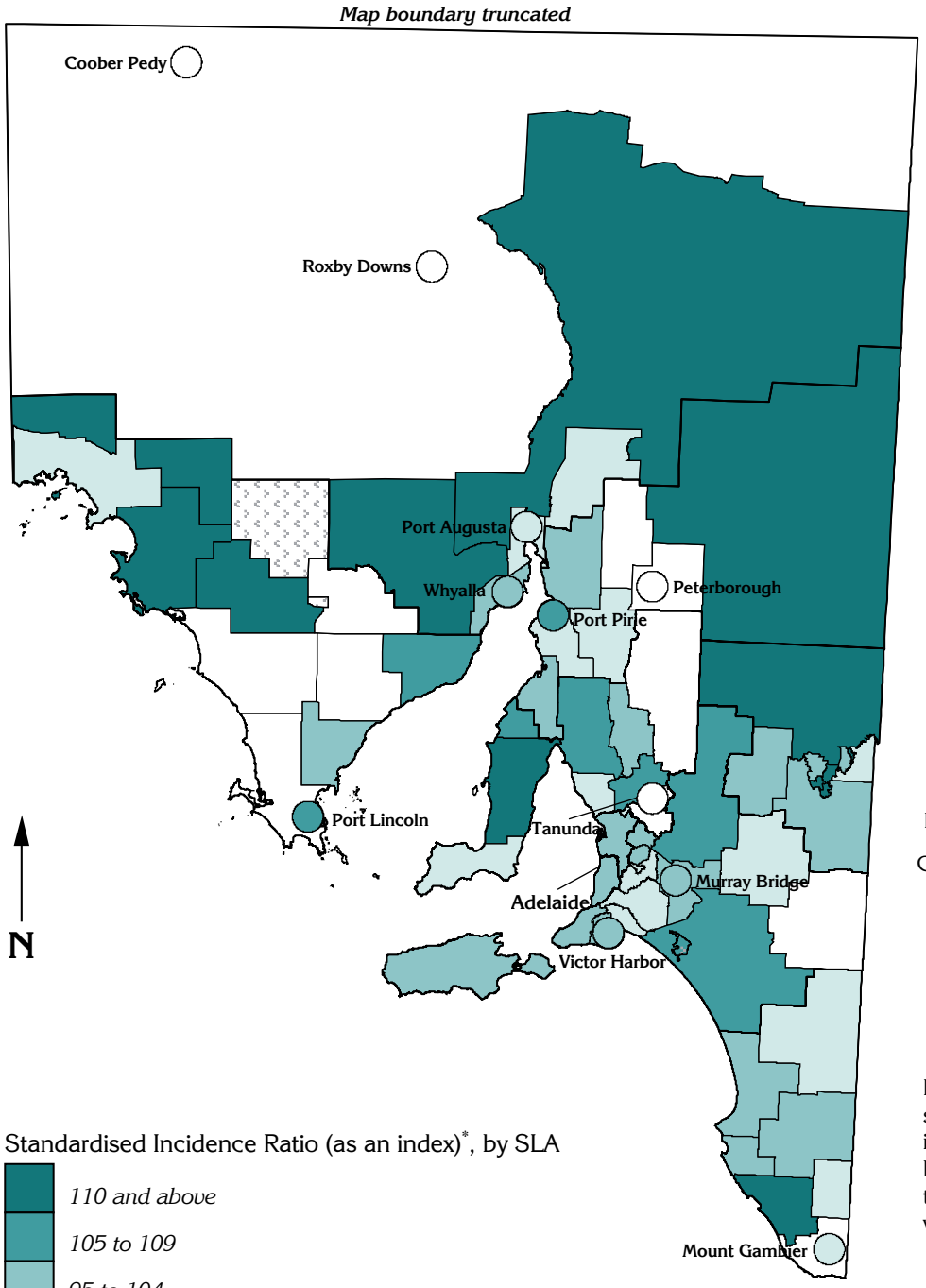
There were six per cent fewer than expected new cases of cancer in **Northern and Far Western** (an SIR of 94*, 984 cases). Unincorporated Far North had 43% fewer cases of cancer than expected (57**, 40), followed by Coober Pedy (72*, 44) and Roxby Downs (84, 25). Unincorporated Flinders Ranges also had a highly elevated SIR of 124 (22 cases). Residents of Whyalla had 512 new cases recorded, an SIR of 100.

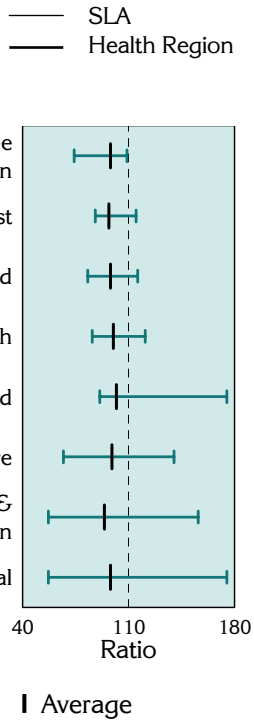
ASGC Remoteness classification

The incidence of cancer was generally lower in more remote areas, with an SIR of 86** in the Very Remote areas, compared with 101 in the Major Cities areas. Outer Regional areas had an SIR of 101.

* **indicates statistical significance: see page 24**

Map 6.35
Cancer incidence, South Australia, 1998 to 2002





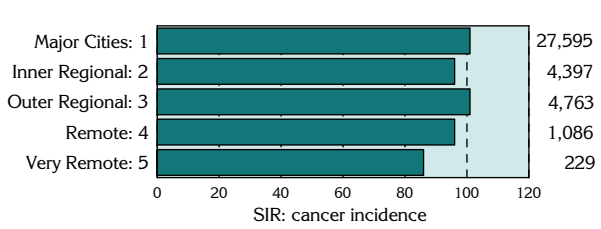
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Incidence Ratio (as an index)*, by SLA

- *110 and above*
- *105 to 109*
- *95 to 104*
- *90 to 94*
- *below 90*
- *data not mapped#*

*Index shows the number of new cancers in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Incidence of lung cancer, 1998 to 2002

Tobacco smoking is the commonest cause of lung cancer. Although overall rates of smoking are declining, the rate of lung cancer is still increasing, due to the lag time from the exposure to tobacco to the onset of lung cancer. There has been a decline in lung cancer in males following reduced smoking rates since the 1970s. The same trend has not been observed for females. Other causes of lung cancer include occupational exposures to other hazardous substances such as asbestos and radiation. The survival rate for lung cancer after five years is estimated at 12%; the population groups most at risk include people in low socioeconomic areas, Aboriginal and Torres Strait Islander females, and males born overseas (excluding Asian born), particularly those born in the UK and Southern Europe (SA Cancer Registry 2005).

The incidence of lung cancer was virtually unchanged for South Australia from 1998 to 2002 when compared with the period 1986 to 1993, down from 66 to 64 new cases per 100,000 population. This small decrease in new cases was comprised of a small decrease in Metropolitan Adelaide and a small increase in country South Australia (Table 6.39).

Table 6.39: Incidence of lung cancer

Age-standardised incidence rate per 100,000 population aged 20 years and over

Area	1986-1993	1998-2002	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	68	64	-5.9
Country	62	63	1.6
South Australia	66	64	-3.0

[1]**Per cent change over eleven years in the rate of lung cancer incidence**

Metropolitan regions

There were 2,556 new cases of lung cancer in Metropolitan Adelaide (excluding Gawler) over the five years from 1998 to 2002, the number expected from the State rates (a standardised incidence ratio (SIR) of 100) (Table 6.40). The SLAs with the most highly elevated ratios of lung cancer (Map 6.36) closely follow the pattern of low socioeconomic status shown in Chapters 4 and 5.

High rates of new cases of lung cancer were strongly correlated with a number of the indicators of disadvantage, as well as with smoking during pregnancy, perinatal risk factors, and high rates of attendance at Accident and Emergency departments, hospital admissions and GP services. These results, together with the strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between lung cancer and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

There were 1,779 new cases of lung cancer in Central Northern from 1998 to 2002 (an SIR of 100). The most highly elevated ratio, with nearly twice the expected number of cases, was in Salisbury - Inner North (an SIR of 198**, 53 cases). There were also highly elevated ratios in Playford - West Central (an SIR of 138, 27 cases), Adelaide (138*, 39), Port Adelaide Enfield - Coast (126*, 88), Playford - East Central (133, 30), Port Adelaide Enfield - Port (126*, 90), Salisbury - North-East (125, 48), Playford - Elizabeth (121, 78) and Port Adelaide Enfield - Inner (121, 76).

Relatively large numbers of new cases of lung cancer were recorded in West Torrens - West (82 cases, an SIR of 88), Charles Sturt - Coastal (78 cases, 85) and - Inner West (74 cases, 98), Salisbury - South-East (73 cases, 114), West Torrens - East (68 cases, 106) and Tea Tree Gully - South (63 cases, 88).

SLAs with fewer new cases of lung cancer than expected included Playford - West (an SIR of 63, eight cases), Norwood Payneham St Peters - East (64**, 36), Burnside - North-East (66**, 42), Unley - East (67*, 32), Walkerville (70, 16), Adelaide Hills - Ranges (72, 12), Campbelltown - West (73*, 46), Burnside - South-West (74*, 44) and Adelaide Hills - Central (82, 19).

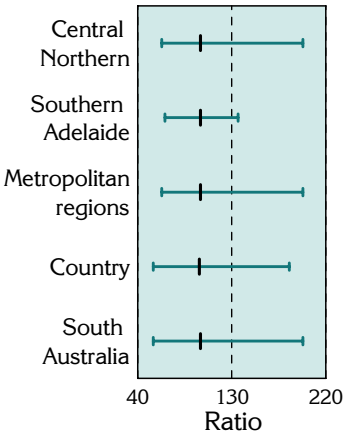
Southern Adelaide

There were 777 new cases of lung cancer in the Southern region over the five years from 1998 to 2002 (an SIR of 100), with elevated ratios in Onkaparinga - Hackham (an SIR of 136, 29 cases) and - South Coast (130*, 58), Marion - Central (120*, 129), and Onkaparinga - North Coast (119, 53) and - Woodcroft (117, 54).

The SLAs of Marion - Central (129 cases, an SIR of 120) and - North (92 cases, 103), Holdfast Bay - North (67 cases, 98) and Mitcham - West (67 cases, 98) all had relatively large numbers of new lung cancer cases. There were low ratios in Onkaparinga - Hills (an SIR of 66, 16 cases), Mitcham - Hills (an SIR of 67*, 36), Mitcham - North-East (an SIR of 70*, 32), Marion - South (an SIR of 79, 18) and Holdfast Bay - South (an SIR of 81, 45).

* **indicates statistical significance: see page 24**

Map 6.36
Incidence of lung cancer, Adelaide, 1998 to 2002

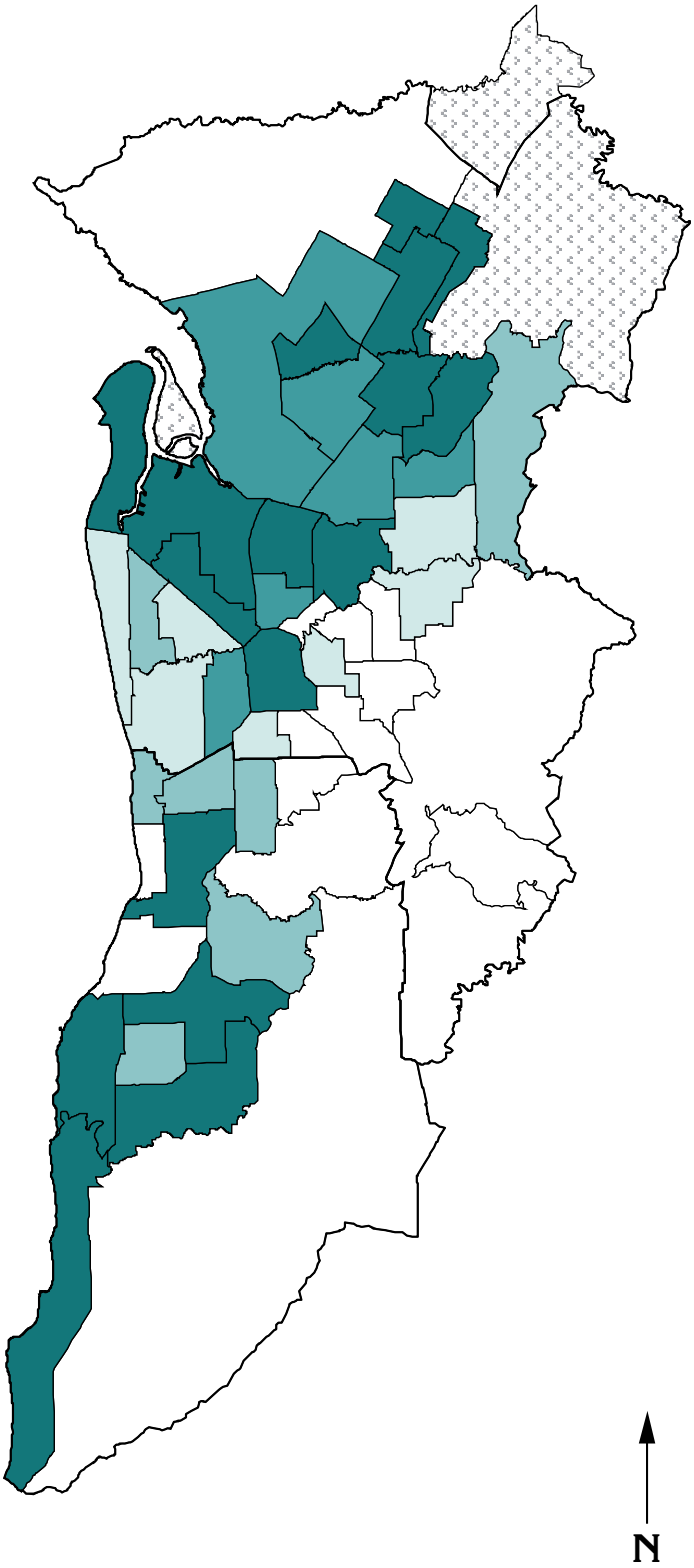


Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

SLA
Health Region

Standardised Incidence Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*



*Index shows the new cases of lung cancer in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In 1998 to 2002, country residents had one per cent fewer new cases of lung cancer than were expected from the State rates (a standardised incidence ratio (SIR) of 99, and 971 cases).

The SLAs with the most highly elevated ratios for lung cancer incidence were predominantly located in the north of the State, including a number of the towns, and in the **Riverland** (Map 6.37); this is also evident in the regional totals (Table 6.40). As many SLAs have small numbers of new cases, relatively few of the ratios are of statistical significance.

Table 6.40: Regional totals, incidence of lung cancer, 1998 to 2002

Region	Number	SIR
Hills Mallee Southern	235	86*
Wakefield[1]	247	101
South East	128	94
Northern & Far Western	127	139**
Eyre	63	84
Mid North	82	99
Riverland	90	114
Country SA	**971**	**99**
Central Northern	1,779	100
Southern	777	100
Metropolitan regions	**2,556**	**100**
South Australia	**3,527**	**100**

[1]**Gawler is included in Wakefield region**

Lung cancer incidence was weakly correlated with a number of the indicators of disadvantage. These results, together with a strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level in country South Australia between lung cancer incidence and socioeconomic disadvantage (Table 8.2).

The Regions

The most highly elevated SIR at the regional level for lung cancer was recorded in **Northern and Far Western**, with nearly 40% more cases than expected from the State rates (an SIR of 139**, 127 cases). Within the region, there were highly elevated ratios in Coober Pedy (an SIR of 174, nine cases), Whyalla (143**, 66), Port Augusta (139*, 36) and Unincorporated Far North (118, six).

Riverland had 14% more new cases than expected from the State rates over this period (an SIR of 114, 90 cases). Renmark Paringa - Paringa had 50% more cases than expected (an SIR of 150, six cases), with other high ratios (but none of statistical significance) in Berri and Barmera - Berri (an SIR of 138, 18 cases) and - Barmera (125, 15), and Renmark Paringa - Renmark (112, 21). Loxton Waikerie - West had one quarter fewer cases than expected (an SIR of 74, nine cases).

There were 247 new cases of lung cancer in **Wakefield** (an SIR of 101). Goyder had 40% more cases than expected from the State rates (an SIR of 140, 17 cases), followed by Copper Coast (119, 43), and Yorke Peninsula - South (117, 17) and - North (114, 29). There was a high rate of lung cancer incidence in Gawler (45 cases, an SIR of 103). Low ratios were calculated for Barossa - Barossa (an SIR of 70, ten cases), - Tanunda (73, nine) and - Angaston (77, 15), and Mallala (75, eight) and Light (84, 17).

Mid North had a standardised ratio of 99 (82 cases) with elevated ratios in Peterborough (121, eight cases) and Barunga West (108, nine). Both Port Pirie Balance (60, five) and Mount Remarkable (62, five) had low ratios and small numbers. Port Pirie - City had the largest number of new cases of lung cancer (37 new cases, an SIR of 106).

There were six per cent fewer cases of lung cancer than expected in **South East** (an SIR of 94, 128 cases), with elevated ratios in Wattle Range - West (116, 25) and Grant (110, 17). Both Lacepede (79, five cases) and Tatiara (55, eight) had low ratios. Mount Gambier had the largest number of new cases in the region (48 cases, an SIR of 99).

There were 235 new cases of lung cancer in **Hills Mallee Southern** (an SIR of 86*), with a highly elevated ratio in Mid Murray (152*, 33 cases). Murray Bridge had the largest number of new cases of lung cancer (40 cases, an SIR of 102). A number of SLAs in this region had low ratios, including Adelaide Hills Balance (an SIR of 56, ten cases), Yankalilla (61, seven), Victor Harbor (69, 31), Mount Barker Balance (70, ten), Alexandrina - Strathalbyn (78, 15), Kangaroo Island (78, eight), Alexandrina - Coastal (81, 26) and Adelaide Hills - North (86, 10).

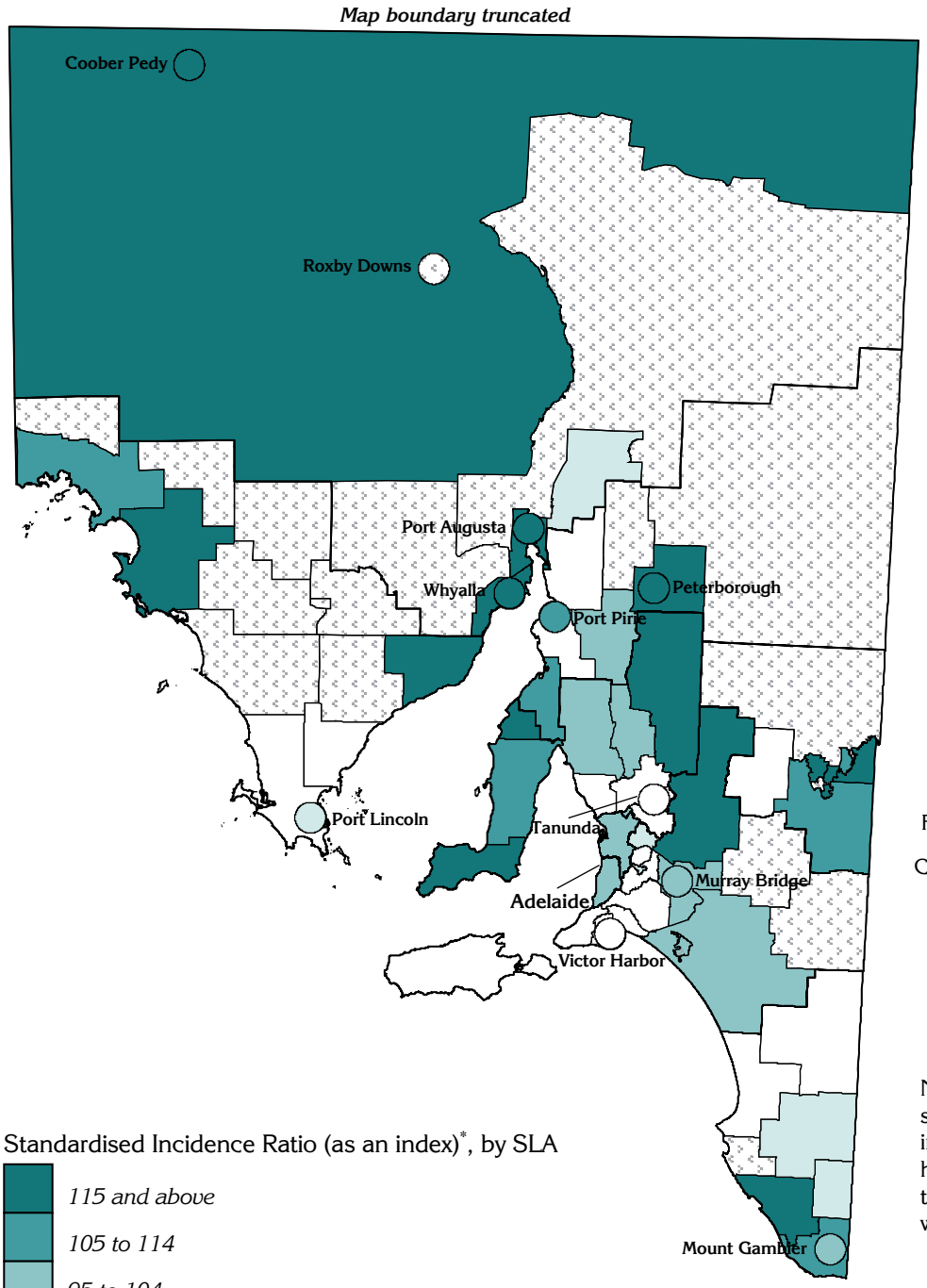
Eyre had the lowest ratio, with 16% fewer cases than expected (an SIR of 84, 63 cases). Although having relatively small numbers, there were elevated ratios (not statistically significant) in Streaky Bay (an SIR of 185, eight cases), Franklin Harbor (128, five) and Ceduna (113, six). Port Lincoln had the largest number of new cases of lung cancer (26 cases, an SIR of 91). Low ratios were recorded in Lower Eyre Peninsula (68, six) and Tumby Bay (72, six).

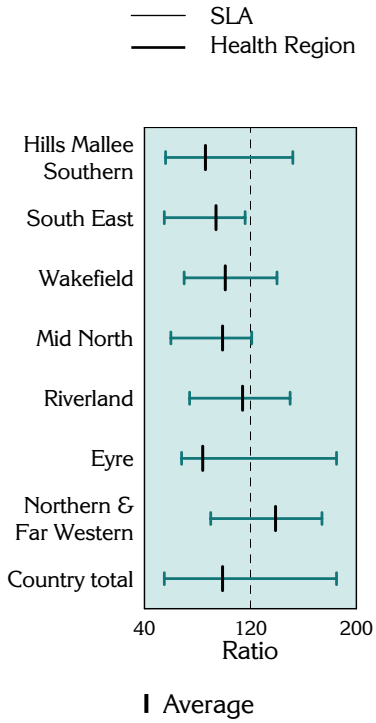
ASGC Remoteness classification

Standardised ratios for new cases of lung cancer were highest in the remoteness classes of Very Remote (an SIR of 122), Outer Regional (111*) and Major Cities (101). Inner Regional (an SIR of 86**) had 14% fewer cases and Remote (88) had 12% fewer cases than expected.

* **indicates statistical significance: see page 24**

Map 6.37
Incidence of lung cancer, South Australia, 1998 to 2002





Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

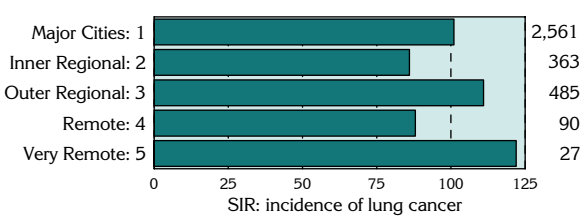
Standardised Incidence Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

*Index shows the new cases of lung cancer in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100, or there were fewer than five cancers

ASGC Remoteness classification



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Incidence of breast cancer, 1998 to 2002

Breast cancer is the most frequently diagnosed cancer, and is also the commonest cause of cancer death, in women in Australia. The incidence of breast cancer increases with age. Women of high socioeconomic status are at greater risk of breast cancer than women of low socioeconomic status with possible reasons including differences in reproductive and lifestyle factors. Other factors implicated in the development of breast cancer include family history, parity, length of menstrual cycle, breast feeding, diethylstilboestrol use during pregnancy, infertility, miscarriage, termination of pregnancy, radiation exposure, physical activity, stress, height, alcohol consumption, smoking and dietary factors (Kelsey 1993; Coates & Armstrong 1997).

The five-year survival rate for breast cancer is 78% (SA Cancer Registry 2005). The incidence of breast cancer in South Australia increased by 20.5% between the periods 1986 to 1993 (176 new cases per 100,000 women aged 30 years and over), and 1998 to 2002 (212 new cases per 100,000 women). The proportional change across Metropolitan Adelaide (20.7%) and country South Australia (21.1%) is almost identical (Table 6.41).

Table 6.41: Incidence of breast cancer

Age-standardised incidence rate per 100,000 women aged 30 years and over

Area	1986-1993	1998-2002	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	179	216	20.7
Country	166	201	21.1
South Australia	176	212	20.5

[1]**Per cent change over eleven years in the rate of breast cancer incidence**

Metropolitan regions

There were 3,659 new cases of breast cancer recorded for females in the metropolitan regions (excluding Gawler) from 1998 to 2002, two per cent more than expected from the State rates (a standardised incidence ratio (SIR) of 102). There were nine per cent more cases than expected from the State rates in Southern Adelaide (an SIR of 109**, 1,187 cases), and one per cent fewer cases than expected in Central Northern Adelaide (99, 2,472 cases) (Table 6.42).

The overall pattern is suggestive of higher rates of new cases of breast cancer in areas of higher socioeconomic status (Map 6.38). This contention is supported by the correlation analysis, which shows breast cancer to be weakly correlated with variables reflecting relative advantage, such as female labour force participation; fulltime educational participation at 16 years of age; high income families and the Index of Relative Socio-Economic Disadvantage. Incidence was weakly correlated with rates of participation and cancers detected through screening (Table 8.1).

Central Northern Adelaide

There were 2,472 new cases of breast cancer in Central Northern (an SIR of 99). Unlike other patterns of disease mapped in this atlas, many of the most highly elevated ratios of breast cancer were mapped in the advantaged SLAs.

Walkerville had the highest standardised incidence ratio, with 32% more cases than expected from the State rates (an SIR of 132, 40 cases), followed by Burnside - South-West (120, 98), Unley - West (115, 67) and - East (114, 74), Tea Tree Gully - North (114, 66) and - Central (112, 88), and Port Adelaide Enfield - Inner (112, 80).

There were large numbers of new cases of breast cancer in West Torrens - West (115 cases, 104), Tea Tree Gully - South (113 cases, 104) and Port Adelaide Enfield - Coast (103 cases, 104).

The SLAs with the lowest ratios were Playford - West (an SIR of 36**, eight cases), Salisbury Balance (41*, five), Playford - Hills (56, five), Salisbury - Central (75*, 55), Charles Sturt - North-East (71**, 80), Playford - East Central (an SIR of 82, 34), Charles Sturt - Inner East (an SIR of 83, 66), Norwood Payneham St Peters - West (an SIR of 83, 52), Campbelltown - East (an SIR of 83, 79), Playford - West Central (an SIR of 84, 26) and Norwood Payneham St Peters - East (an SIR of 88, 60).

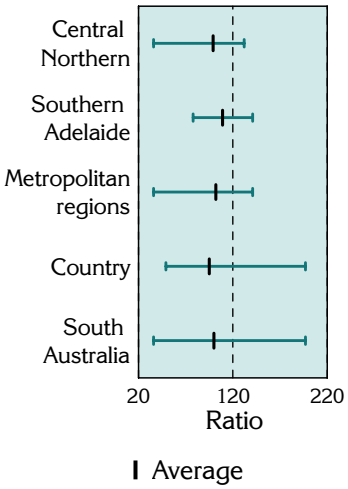
Southern Adelaide

There were 1,187 new cases in Southern over the five years from 1998 to 2002 (an SIR of 109**). The most highly elevated ratio in this region was in Mitcham - North-East, with an SIR of 141** and 84 cases, followed by Marion - North (121*, 120), Onkaparinga - Hills (an SIR of 119, 45 cases), Marion - Central (118*, 159), Onkaparinga - Woodcroft (115, 102) and Onkaparinga - Reservoir (114, 77).

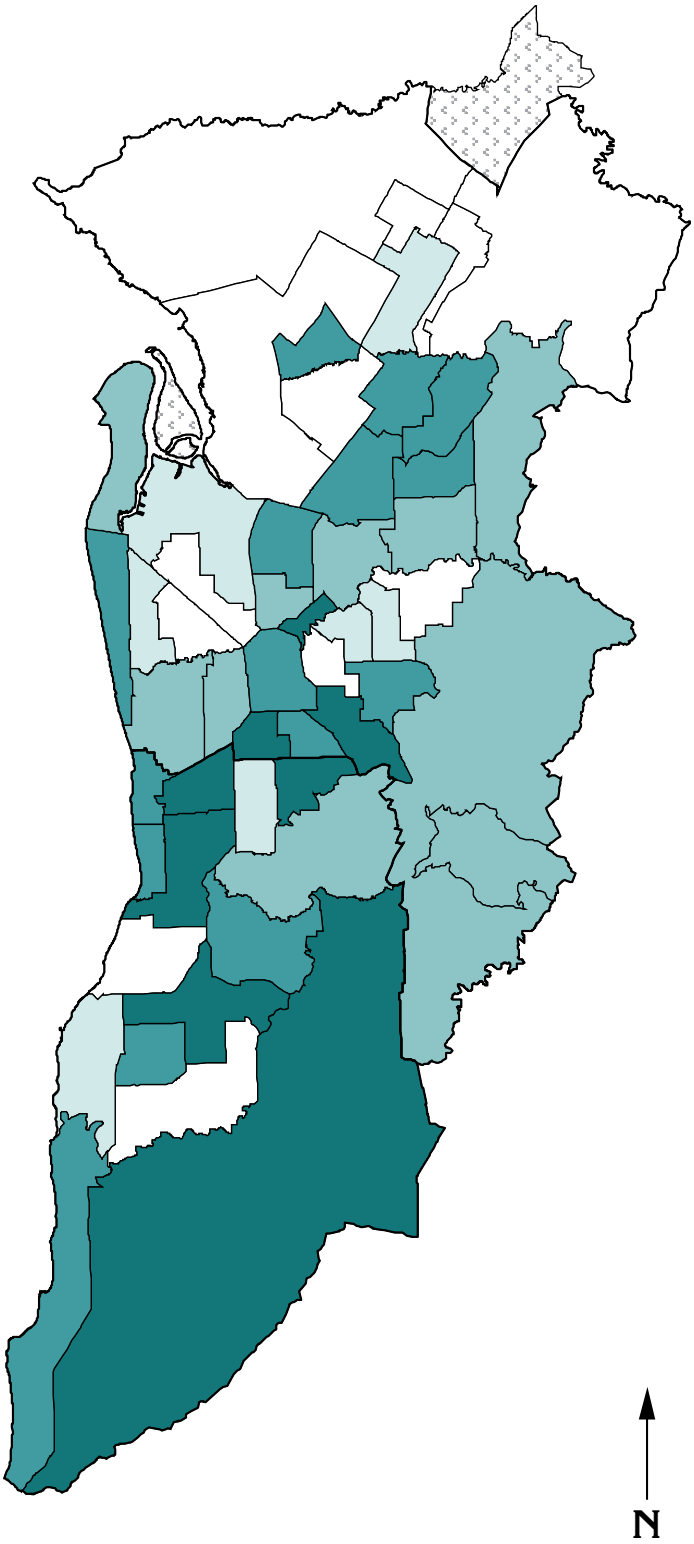
There were below average ratios in Onkaparinga - Hackham (an SIR of 78, 30 cases) and Marion - South (84, 44).

* **indicates statistical significance: see page 24**

Map 6.38
Incidence of breast cancer, metropolitan regions, 1998 to 2002



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Incidence Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

*Index shows the new cases of breast cancer in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Country South Australia

There were 1,279 new cases of breast cancer recorded for females in country South Australia from 1998 to 2002, five per cent fewer than expected from the State rates (a standardised incidence ratio (SIR) of 95).

Most of the regions had fewer cases than expected from the State rates, with all but two ratios below 100. The highest ratio was calculated for **Riverland**, with 16% more cases than expected (an SIR of 116, 123 cases). **Hills Mallee Southern** had one per cent more cases than expected (an SIR of 101, 373 cases).

Table 6.42: Regional totals, incidence of breast cancer, 1998 to 2002

Region	Number	SIR
Hills Mallee Southern	373	101
Wakefield[1]	314	96
South East	160	84*
Northern & Far Western	109	81*
Eyre	92	90
Mid North	109	98
Riverland	123	116
Country SA	**1,279**	**95**
Central Northern	2,472	99
Southern	1,187	109**
Metropolitan regions	**3,659**	**102**
South Australia	**4,938**	**100**

[1]**Gawler is included in Wakefield region**

There was no consistent relationship between socioeconomic status and breast cancer apparent in the correlation analysis. This may, in part, reflect the relatively small numbers of cases at the SLA level in country South Australia (Table 8.2).

The Regions

Riverland had the highest regional ratio for breast cancer, with 16% more new cases than expected (an SIR of 116, 123 cases). There were elevated ratios in Berri and Barmera - Berri (an SIR of 136, 28 cases), Renmark Paringa - Renmark (124, 31) and Loxton Waikerie - East (116, 27).

There were 373 new cases of breast cancer in **Hills Mallee Southern** (an SIR of 101) over the five years from 1998 to 2002. Highly elevated ratios for breast cancer were recorded in Southern Mallee (154, eleven cases), Kangaroo Island (140, 20), Victor Harbor (135*, 66), Yankalilla (130, 20) and The Coorong (120, 23). There were a relatively large number of new cases in Murray Bridge (48 cases, an SIR of 90). There were low ratios in Mid Murray (an SIR of 78, 22), Alexandrina - Strathalbyn (84, 23), Mount Barker - Central (85, 35), Adelaide Hills Balance (89, 23) and Alexandrina - Coastal (89, 35).

In **Mid North**, there were 109 new cases (an SIR of 98) with an elevated ratio in Orroroo/Carrieton (167, seven cases). Low ratios were recorded for Peterborough (an SIR of 85, seven cases) and Port Pirie - City (87, 43).

Wakefield had 314 new cases of breast cancer over this five-year period, four per cent fewer than expected from the State rates (an SIR of 96). There were elevated ratios in Light (an SIR of 127, 37 cases), Barossa - Barossa (119, 25) and Yorke Peninsula - North (110, 34). Copper Coast had 39 new cases (an SIR of 90). There were low ratios in Barossa - Tanunda (an SIR of 58, nine), Goyder (64, ten), Mallala (71, 13), Barossa - Angaston (78, 20) and Clare and Gilbert Valleys (87, 25).

There were ten per cent fewer new cases of breast cancer in **Eyre** than expected from the State rates (an SIR of 90, 92 cases). Elliston (an SIR of 197, seven cases) and Le Hunte (176, seven) both had highly elevated ratios, but neither were statistically significant. There were very low ratios in Lower Eyre Peninsula (and SIR of 49, six cases), Port Lincoln (84, 34), Tumby Bay (85, nine) and Ceduna (87, eight).

South East had 16% fewer incidence than expected (an SIR of 84*, 160). Naracoorte and Lucindale had an elevated ratio of 115 (29 cases) and Wattle Range - West recorded a relatively large number of new cases (31 cases, an SIR of 107). The SLAs of Grant (an SIR of 66, 16 cases), Mount Gambier (71*, 49), Tatiara (78, 16), Lacepede (81, seven), Wattle Range - East (83, eight) and Robe (86, five) all had low ratios.

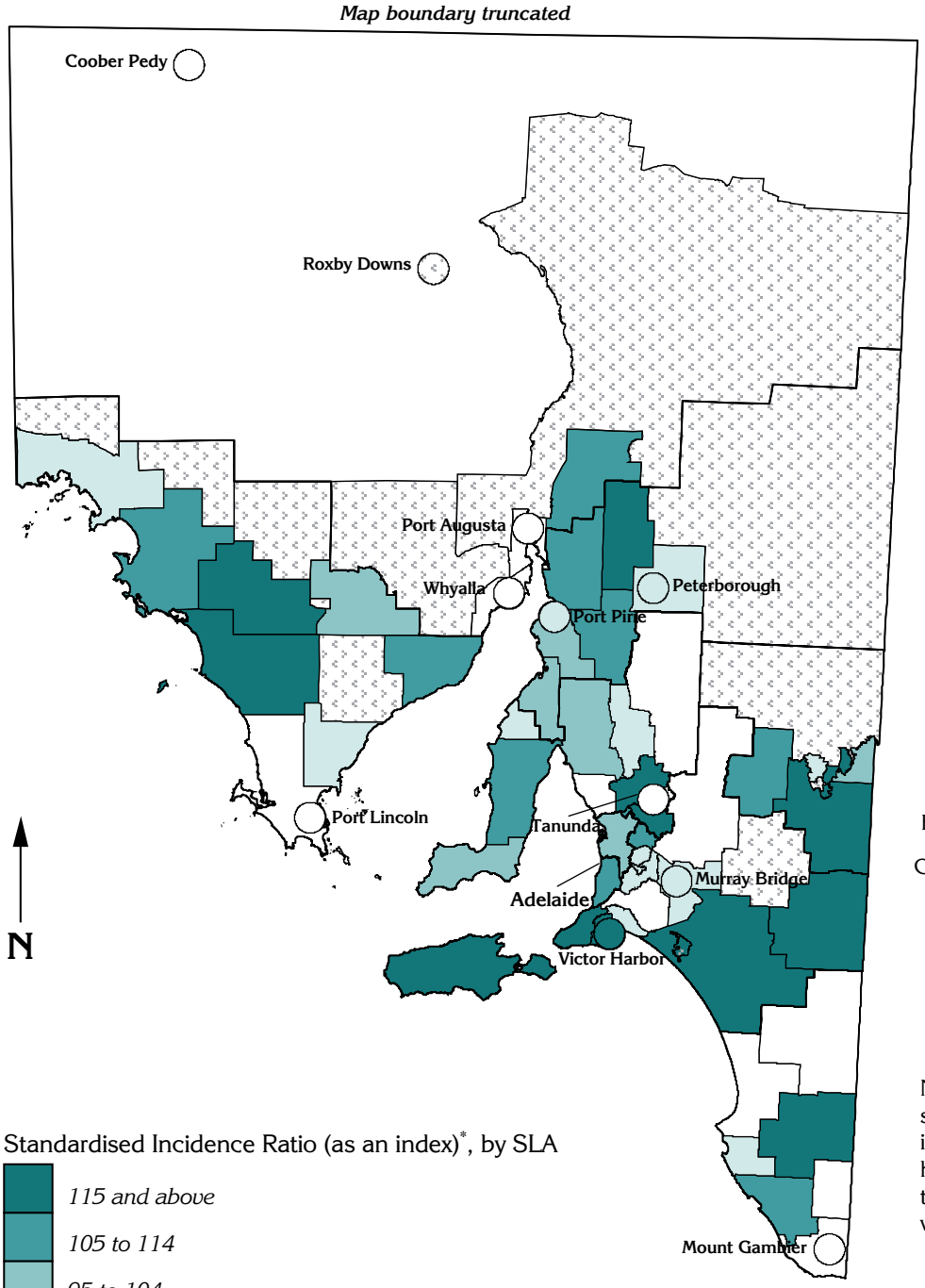
Northern and Far Western had the lowest ratio, with 19% fewer new cases of breast cancer than expected from the State rates (an SIR of 81*, 109 cases). Flinders Ranges (114, seven) had a high ratio (but small number of cases). There were low ratios in Coober Pedy (an SIR of 65, five cases), Unincorporated Far North (73, six), Whyalla (80, 54) and Port Augusta (81, 31).

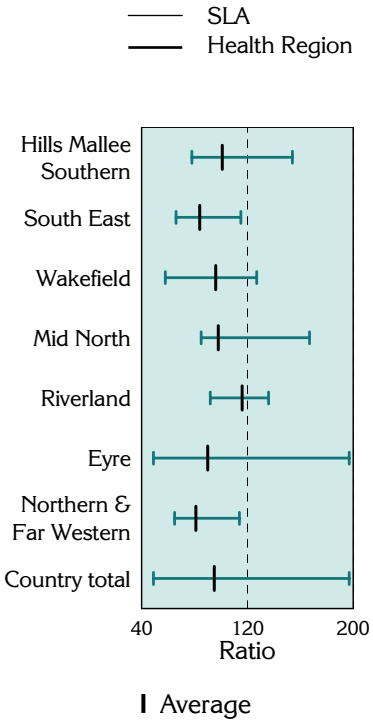
ASGC Remoteness classification

The most highly elevated ratio for the remoteness areas was calculated for Major Cities (an SIR of 102). The other remoteness classes had fairly similar ratios, ranging from 94 in Inner Regional to 99 in Very Remote. None of these standardised ratios were statistically significant.

* **indicates statistical significance: see page 24**

Map 6.39
Incidence of breast cancer, South Australia, 1998 to 2002





Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Incidence Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

*Index shows the new cases of breast cancer in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100, or there were fewer than five cancers

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Incidence of prostate cancer, 1999 to 2002

Apart from non-melanoma skin cancer, cancer of the prostate is the most commonly diagnosed cancer among South Australian males; and it is the second commonest cause of cancer deaths in South Australian men (CCSA 2003). The incidence of prostate cancer increases with age. At the present time, the exact cause of prostate cancer is not known; therefore active prevention is not possible. Prostate cancer has been associated with Western-style high fat diets, alcohol, smoking, occupational exposure to cadmium and rubber, urban residence and a family history of the disease (CCSA 2003).

The incidence of prostate cancer in South Australia increased by 26.7% between the periods 1986 to 1993, and 1998 to 2002, with similar increases in incidence in both Metropolitan Adelaide and country South Australia (Table 6.43).

Table 6.43: Incidence of prostate cancer

Age-standardised incidence rate per 100,000 males aged 50 years and over

Area	1986-1993	1998-2002	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	377	479	27.1
Country	370	466	25.9
South Australia	375	475	26.7

[1]**Per cent change over eleven years in the rate of prostate cancer incidence**

Metropolitan regions

There were 3,633 new cases of prostate cancer in the metropolitan regions (excluding Gawler) from 1998 to 2002, one per cent more than expected from the State rates (a standardised incidence ratio (SIR) of 101). Central Northern had the expected number of new cases for its population (2,511 cases, an SIR of 100) and Southern had three per cent more than expected (1,122, an SIR of 103) (Table 6.44).

There is no clear pattern in the geographic distribution of standardised incidence ratios across the SLAs (Map 6.40).

Prostate cancer was weakly correlated at the SLA level with a number of the indicators of socioeconomic advantage and with the Index of Relative Socio-Economic Disadvantage (Table 8.1).

Central Northern Adelaide

There were 2,511 new cases of prostate cancer in Central Northern from 1998 to 2002 (an SIR of 100). Highly elevated ratios, with over one third more cases than expected from the State rates, were recorded in Port Adelaide Enfield - Coast (an SIR of 144**, 136 cases), Salisbury - Inner North (138*, 53) and Adelaide Hills - Ranges (131, 32). There were also elevated ratios in Tea Tree Gully - Central (130*, 80), Campbelltown - East (125*, 101), Tea Tree Gully - Hills (122, 40), Adelaide (119, 50), Burnside - South-West (an SIR of117, 93 cases) and - North-East (an SIR of 116, 101), Tea Tree Gully - North (115, 43) and Prospect (113, 66).

There were large numbers of new cases of prostate cancer recorded for men in Charles Sturt - Coastal (134 cases, an SIR of 100), West Torrens - West (119 cases, 89), Tea Tree Gully - South (114, 108), Port Adelaide Enfield - East (109 cases, 107), West Torrens - East (100 cases, 109), and Charles Sturt - Inner West (97 cases, 91), - Inner East (87 cases, 89) and - North-East (87 cases, 89).

The SLAs with ratios below the State average were Unley - West (an SIR of 69*, 34), Salisbury - Central (71*, 50), Norwood Payneham St Peters - East (an SIR of 77, 57), Salisbury - South-East (78*, 75), Port Adelaide Enfield - Inner (an SIR of 81, 73), Norwood Payneham St Peters - West (an SIR of 81, 47), Salisbury Balance (an SIR of 83, six) and Port Adelaide Enfield - Port (an SIR of 84, 87).

Southern Adelaide

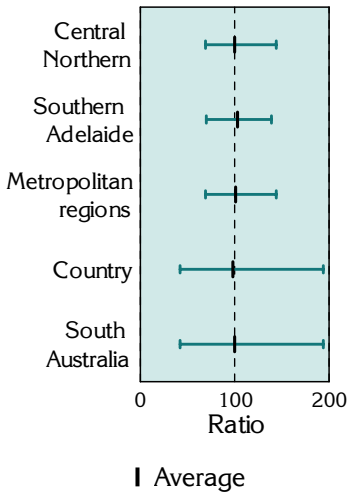
In Southern, there were 1,122 new cases of cancer over the five years from 1998 to 2002 (an SIR of 103). Elevated ratios were recorded for Mitcham - Hills (an SIR of 139**, 101), Onkaparinga - South Coast (136**, 85), Onkaparinga - Reservoir (120, 58), Marion - Central (an SIR of 115, 172) and - South (114, 31), and Onkaparinga - Woodcroft (113, 73).

There were large numbers of new cases of prostate cancer in Marion - North (121 cases, an SIR of 92), Mitcham - West (91, 96) and Holdfast Bay - North (97, 88).

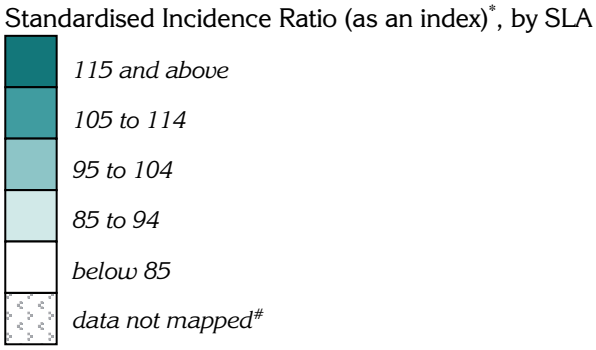
The SLAs of Onkaparinga - Hackham (with an SIR of 70*, 21 cases) and Mitcham - North-East (70**, 48) both had a low incidence of prostate cancer.

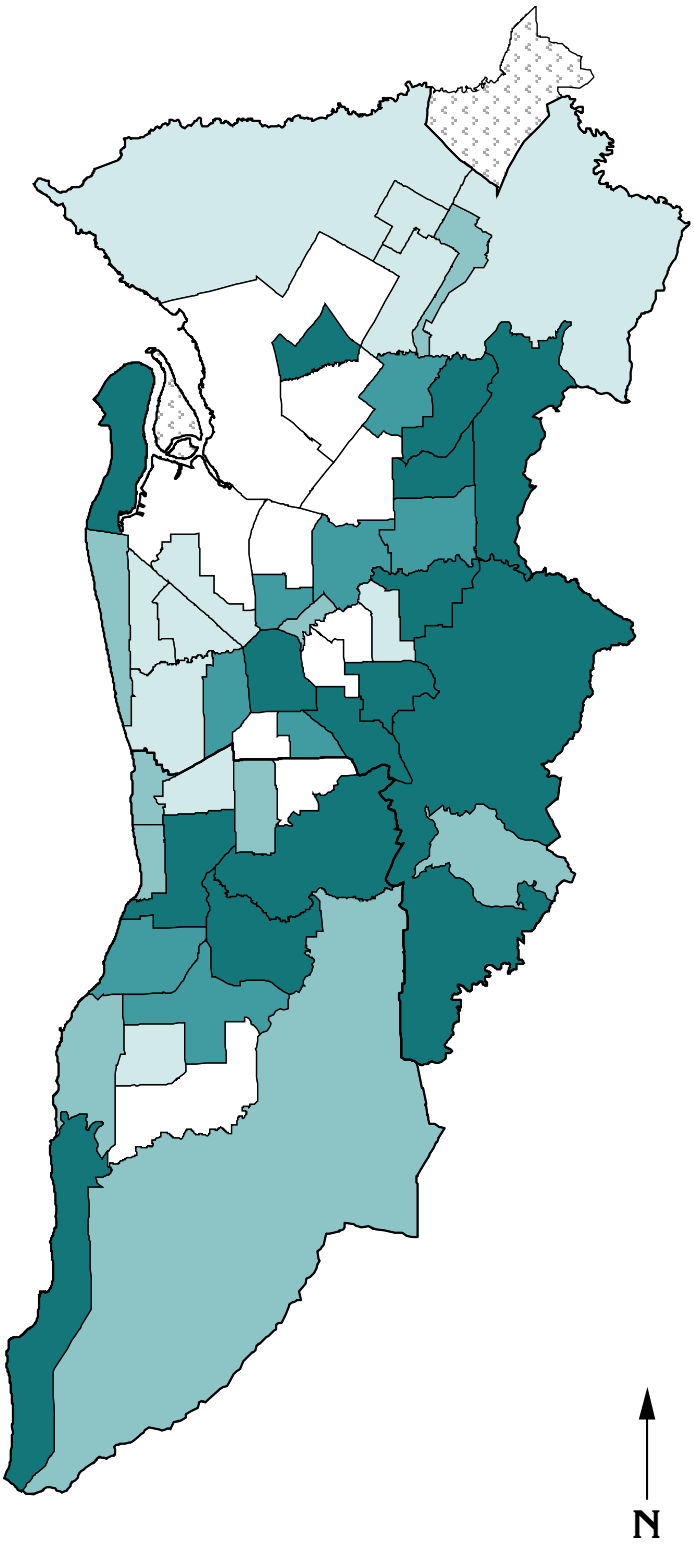
* **indicates statistical significance: see page 24**

Map 6.40
Incidence of prostate cancer, metropolitan regions, 1998 to 2002



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.





*Index shows the new cases of prostate cancer in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

In country South Australia, there were 1,485 new cases of prostate cancer from 1998 to 2002, two per cent fewer than expected from the State rates (Table).

The highest incidence rates were found in **Wakefield** (an SIR of 109, 410) and **Hills Mallee Southern** (105, 447), with the lowest in **Northern and Far Western** (66**, 95) and **Mid North** (69**, 86). Many SLAs were not mapped because of the relatively small number of these cases at the SLA level in country South Australia; of those mapped, many ratios were not of statistical significance.

Table 6.44: Regional totals, incidence of prostate cancer, 1998 to 2002

Region	Number	SR
Hills Mallee Southern	447	105
Wakefield[1]	410	109
South East	207	101
Northern & Far Western	95	66**
Eyre	118	100
Mid North	86	69**
Riverland	122	99
Country SA	**1,485**	**98**
Central Northern	2,511	100
Southern	1,122	103
Metropolitan regions	**3,633**	**101**
South Australia	**5,118**	**100**

[1]**Gawler is included in Wakefield region**

There was no consistent relationship at the SLA level between prostate cancer and socioeconomic status (Table 8.2).

The Regions

The highest regional ratio was calculated for **Wakefield** (an SIR of 109, 410 cases). Men living in Yorke Peninsula - North had 42% more new cases than expected (an SIR of 142**, 60). There were also elevated ratios in Clare and Gilbert Valleys (an SIR of 122, 40), Copper Coast (114, 64), Barossa - Tanunda (113, 21) and Mallala (112, 20). There were 26% fewer cases than expected in Barossa - Barossa (an SIR of 74, 16 cases). Gawler had 61 new cases of prostate cancer (an SIR of 98) over this five-year period.

In **Hills Mallee Southern**, there were five per cent more new cases of prostate cancer than expected from the State rates (an SIR of 105, 447 cases). Karoonda East Murray had an extremely highly elevated ratio, with nearly twice the expected number of cases (an SIR of 194*), although with relatively small numbers (eleven cases). There were also highly elevated ratios in Adelaide Hills - North (a standardised incidence ratio (SIR) of 167**, 31 cases), The Coorong (142*, 32), Murray Bridge (128**, 78), Mid Murray (126, 45) and Yankalilla (122, 24). Low ratios were recorded for Mount Barker – Central (an SIR of 69*, 29 cases) and Alexandrina - Strathalbyn (an SIR of 75, 21). Relatively large numbers of new cases were recorded for Victor Harbor (60 cases, 86) and Alexandrina - Coastal (42 cases, 79).

There were 207 new cases in the **South East** (an SIR of 101) with elevated ratios in Tatiara (159**, 37), Wattle Range - West (121, 40) and Robe (115, eight). Lacepede (with an SIR of 79, eight cases) and Wattle Range - East (79, nine) both had fewer new cases than expected. Mount Gambier had the largest number of new cases of prostate cancer (58 cases, an SIR of 88).

In **Eyre**, there were 118 new cases of prostate cancer (an SIR of 100). Within this region, there were elevated ratios in Streaky Bay (an SIR of 174*, 12 cases), Franklin Harbor (136, nine), Tumby Bay (123, 17) and Le Hunte (123, seven). There were below average ratios in Cleve (75, five) and Lower Eyre Peninsula (73, eleven). Men living in Port Lincoln had 43 new cases of prostate cancer over the five years (an SIR of 102).

Riverland had a ratio of 99 (122 cases) with elevated ratios in Berri and Barmera - Berri (115, 21 cases) and Renmark Paringa - Renmark (114, 34). The ratio in Berri and Barmera - Barmera was well below average (an SIR of 64, 12).

Mid North had 31% fewer new cases of prostate cancer than expected (an SIR of 69**, 86 cases). A number of SLAs in this region also had fewer new cases than expected, including Northern Areas (an SIR of 42**, eight cases), Peterborough (56, six), Mount Remarkable (67, nine), Port Pirie - City (72*, 36) and Port Pirie Balance (75, ten).

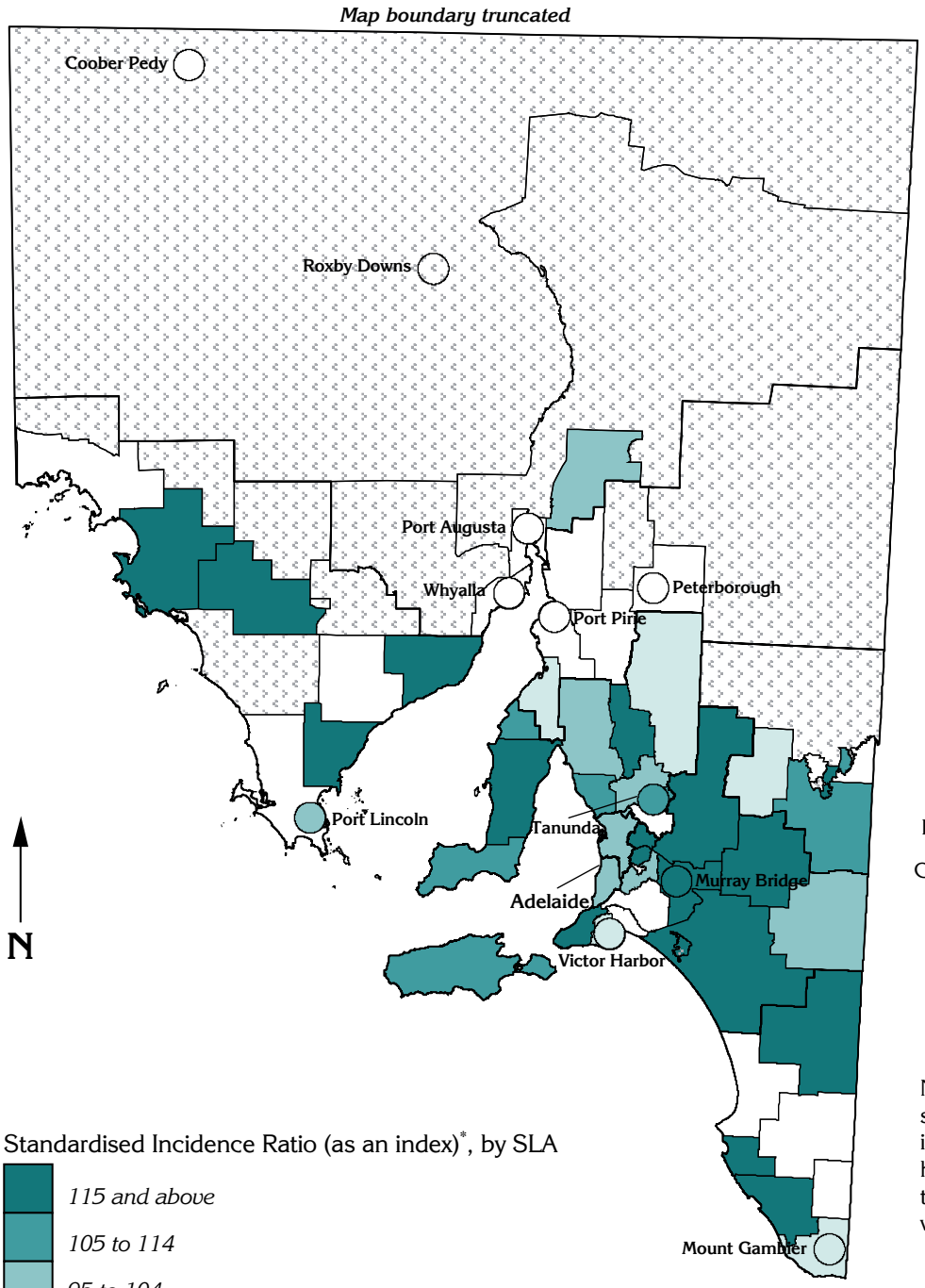
Northern and Far Western also had a particularly low ratio (an SIR of 66**, 95 cases). The largest number of new cases was found for men in Whyalla (53, 78**). Coober Pedy (an SIR of 43, five) and Port Augusta (53**, 21) had fewer new cases than expected.

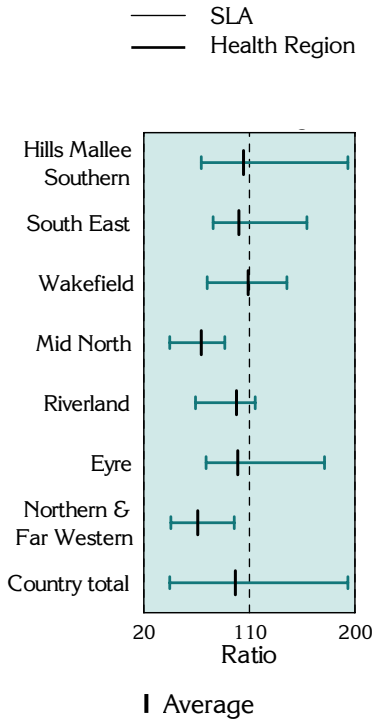
ASGC Remoteness classification

The incidence of new cases of prostate cancer was relatively consistent across the remoteness classes, except for Very Remote which had a low ratio of 66*, compared to ratios of 101 in Major Cities and Inner Regional, 97 in Outer Regional and 103 in Remote.

* **indicates statistical significance: see page 24**

Map 6.41
Incidence of prostate cancer, South Australia, 1998 to 2002





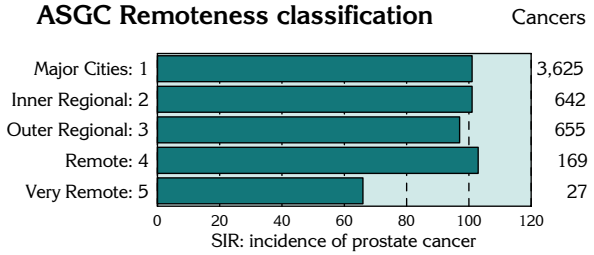
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Incidence Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

*Index shows the new cases of prostate cancer in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100, or there were fewer than five cancers



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

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Introduction

Deaths' data, or mortality data, are a collection of information about people who have died. Primarily, the information identifies factors that caused their death (usually referred to as 'the cause of death'). The collection also contains information about the deceased person, such as their age at death, the place of death, their country of birth, and where applicable, the circumstances of their death. These data are collected in Australia by the Registrars of Births, Deaths and Marriages in each State and Territory. The data are then compiled nationally by the Australian Bureau of Statistics who codes the data according the International Classification of Diseases (ICD).

Deaths' data are important in the measurement of health and disease, and in the planning of public health care. They give a picture of the conditions, diseases, and circumstances causing death in a population and provide an indication of where public health care provision is needed to prevent further deaths. Studying trends in mortality over time provides a picture of how the health status of the population is changing and assists in the implementation of preventative measures (AIHW 2004).

Variations in death rates by social class

Despite improvements in the health of Australians over the last century, large differences or inequalities continue to exist between population sub-groups (Hetzel et al. 2004). Differences in mortality rates can be demonstrated by age, sex, geographic region, area-based socioeconomic disadvantage, occupation, Indigenous status and country of birth.

Socioeconomic disadvantage is a powerful determinant of healthy life and of death (Hetzel et al. 2004). As indicated previously, the Index of Relative Socio-Economic Disadvantage (IRSD) reflects the overall level of socioeconomic disadvantage of an area. For all age groups, males and females in the most disadvantaged areas (using the IRSD) have significantly higher death rates from all causes. Deaths are increasingly more prevalent in areas of low socioeconomic status and in communities characterised by low levels of educational attainment; high levels of unemployment; substantial levels of discrimination, interpersonal violence and exclusion; and poverty. There is a higher prevalence of such factors among Indigenous communities, and other disadvantaged Australians (Glover et al. 2004).

Changes in numbers and rates, 1992 to 2002

Changes in numbers

Over the ten-year period from 1992 to 2002, the number of deaths in South Australia increased by 9.7 per cent, rising from 10,925 deaths in 1992 to 11,987 deaths in 2002 (Table 6.45).

Male deaths increased by 5.0 per cent, while a more substantial increase of 15.1 per cent was recorded for female deaths. However, this trend was a reflection of the increased number of deaths experienced among people aged 75 years and over, which rose by 32.0 per cent over this period.

In line with the increasing life expectancy in South Australia, the number of deaths declined in all other age groups. The most substantial decline was for people aged 15 to 24 years, for whom the number decreased by 29.9 per cent, from 154 deaths in 1992 to 108 deaths in 2002. Large declines were also recorded in the 0 to 14 and 64 to 74 year age groups, decreasing by 26.6 per cent and 23.7 per cent respectively.

Table 6.45: Change in number of deaths by age group, South Australia, 1992 to 2002

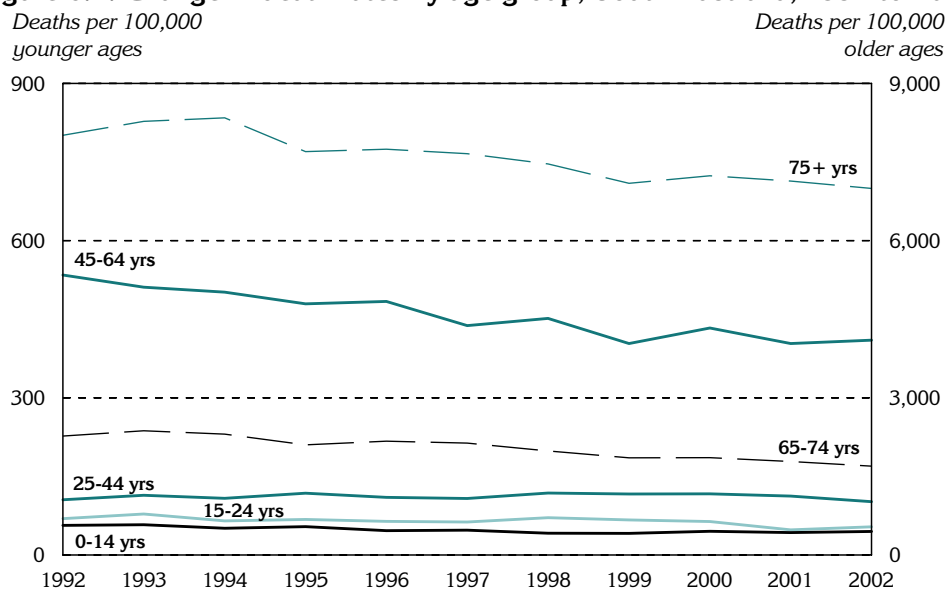
Age group (years)	1992	2002	Per cent change
0-14	173	127	-26.6
15-24	154	108	-29.9
25-44	476	447	-6.1
45-64	1,639	1,538	-6.2
64-74	2,564	1,956	-23.7
75+	5,919	7,811	32.0
Total	**10,925**	**11,987**	**9.7**

Source: ABS Cause of Death bulletins 1992 and 2002

Changes in death rates by age group and sex

Over the period from 1992 to 2002, death rates of people at all ages declined, with the largest decline occurring for people aged 64 to 74 years (down by 25.3%) (see Table 6.46 and Figure 6.2 overleaf). Other large decreases were recorded among people aged 45 to 64 years (down by 23.3%), 15 to 24 years (down by 22.6%) and 0 to 14 years (down by 20.6%). A small decline of 3.7% was recorded for people aged 25 to 44 years.

Figure 6.2: Change in death rates by age group, South Australia, 1992 to 2002



Source: ABS Cause of Death bulletins 1992 and 2002

Table 6.46: Change in death rates by age group and sex, South Australia, 1992 to 2002

Per cent change[1]

Age group (years)	Males	Females	Persons
0-14	-20.8	-20.4	-20.6
15-24	-22.0	-24.1	-22.6
25-44	-4.9	-1.7	-3.7
45-64	-27.2	-15.8	-23.3
64-74	-28.3	-22.3	-25.3
75+	-15.4	-11.8	-12.7
Total	**-20.2**	**-13.8**	**-16.6**

[1]**Per cent change over the ten years from 1992 to 2002**

Source: ABS Cause of Death bulletins 1992 and 2002

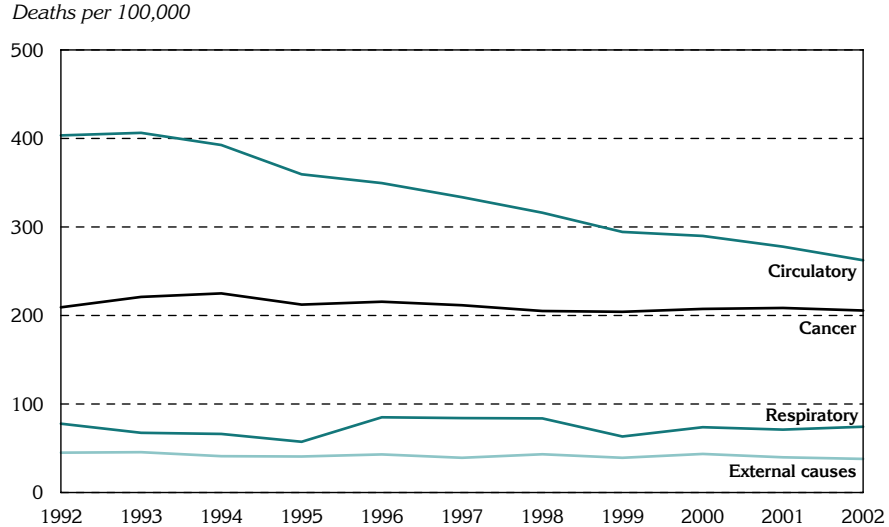
Overall, death rates declined at a greater rate for males (down by 20.2%) than females (down by 13.8%) over the period from 1992 to 2002. The biggest differential in the rates of change recorded for males and females occurred in the 25 to 44 year age group, where male deaths declined by 4.9% and female deaths, by 1.7% (Table 6.46).

Changes in death rates by cause

Over the period from 1992 to 2002, death rates from circulatory system diseases in South Australia have decreased substantially, a decline of 35.0% (Figure 6.3).

A large decrease was also recorded for deaths from external causes (down by 15.8%), with smaller decreases recorded for deaths from respiratory system diseases (down by 4.3%) and cancer (1.7%).

Figure 6.3: Change in death rates by cause, South Australia, 1992 to 2002



Data mapped

Premature deaths

The analysis of death rates is largely based on deaths of persons at ages 15 to 64 years. The main reasons for basing the analysis on this limited age group are:

- that deaths before 65 years of age are, clearly, premature;
- to eliminate, as far as possible, the influence on the results of deaths in nursing homes and other such facilities (see text below);
- that the 15 to 64 year age group has generally been considered to be of 'working' age, and can examined as a group[1]; and
- to allow comparison with earlier editions.

The proportion of the population who die while resident in a nursing home or other aged care facility increases with increasing age. Aged care facilities are unlikely to be located in the same area as the person's previous (domestic) home, and are over-represented in the metropolitan regions, compared with country areas. The higher the age cut-off, the greater the possibility of including deaths in nursing homes, thus increasing death rates for areas in which nursing homes are largely concentrated (traditionally in higher socioeconomic status areas), and reducing the rates in other (lower socioeconomic status) areas. Therefore, using age 65 years as the cut-off reduces this effect.

Despite this limit on ages, the death rates in a number of more affluent SLAs in the metropolitan regions are affected by the location of special-purpose nursing homes and other types of supported accommodation, such as hostels, boarding houses and shelters used by people with psychiatric conditions, and community houses for those with an intellectual disability. People living in such accommodation are more likely than the population in general to die at ages below 65 years. The location of special-purpose nursing homes and other types of supported accommodation has implications not only for death rates, but for the measures of the burden of disease: this is discussed below at page 301.

Infant deaths are analysed separately as they are recognised internationally as a group with historically high mortality rates, and rates with marked socioeconomic differentials. Table 6.47 shows the number of deaths for the age groups and causes for which data are presented.

Table 6.47: Deaths by selected cause and age, South Australia, 1999 to 2002

Age at death	Cancer	Circulatory system diseases	Respiratory system diseases	External causes	All other causes	Total deaths
Infant (under 1 yr)	3	3	3	17	303	329
Adult:	3,253	1,719	372	1,692	1,320	8,356
- 15 to 64 years:						
males	1,709	1,262	201	1,305	818	5,295
females	1,544	457	171	387	502	3,061
- Other ages:	9,911	16,814	4,310	761	6,531	38,327
All ages:	**13,167**	**18,536**	**4,685**	**2,470**	**8,154**	**47,012**

Source: ABS Causes of Death bulletins, 1999 to 2002

Avoidable mortality

Avoidable mortality is a concept that has been used to evaluate the efficiency and efficacy of health care systems. The term, avoidable mortality, refers to those deaths that are considered to be largely avoidable, given timely and effective health care; that is, those deaths that should not occur, given our current medical knowledge and technology. The idea was originally developed by Rutstein et al. (1976) who created a list of conditions that they considered either treatable or preventable given current medical knowledge and technology. In an ideal situation, these conditions would not result in 'unnecessary, untimely death' (Rutstein et al. 1976). Trends in avoidable mortality over time can be used to estimate the contribution of health care to falling mortality rates; and comparisons of such trends across countries or regions can also indicate relative weaknesses in health care systems requiring further investigation (Nolte & McKee 2004) (also see notes on page 188).

In South Australia, almost three quarters (71.4%) of all deaths at ages 0 to 74 years over the period 1997 to 2001 were considered to be avoidable. Of these, over one quarter (29.4%) were considered to be amenable to health care (Table 6.48). Others were likely to be the result of causes such as road traffic accidents, which health care could not have prevented.

[1] The lower age of the 'working age' population is often set at 20 years; 15 years has been retained in this analysis for consistency with earlier editions.

The age-standardised death rate (ASR) from avoidable mortality was 210.4 deaths per 100,000 population. Within this overall rate, 85.9 deaths per 100,000 population were estimated to be amenable to health care. The death rate from the remaining, or 'unavoidable' deaths, was 83.7 per 100,000 population; and the rate for all deaths at these ages was 294.1 deaths per 100,000 population.

Death rates in all categories were higher for males than for females. For avoidable mortality, the rates were 272.8 deaths per 100,000 population for males and 147.2 for females, with the male rate 89% higher than the female rate (a rate ratio of 1.89).

For amenable mortality, the male rate was 96.0 deaths per 100,000 population, 27% higher than the female rate of 75.7 (a rate ratio of 1.27). Unavoidable death rates for males were almost half as high again as for females (a rate ratio of 1.49).

Table 6.48: Avoidable mortality, 0 to 74 years by sex, South Australia, 1997 to 2001

Mortality category	Number			% of Total	ASR[1] per 100,000			
	Males	Females	Total		Males	Females	Total	Rate ratio M:F[2]
Avoidable mortality	10,326	5,612	15,938	71.4	272.8	147.2	210.4	1.89**
Unavoidable mortality	3,805	2,564	6,369	28.6	100.0	67.2	83.7	1.49**
Total mortality	**14,131**	**8,176**	**22,307**	**100.0**	**372.8**	**214.4**	**294.1**	1.74**
Avoidable mortality - %	**73.1**	**68.6**	**71.4**	**..**	**..**	**..**	**..**	**..**
Avoidable mortality: years of potential life lost ('000)	237,451	144,380	381,831	..	..	..	..	..
Amenable mortality[3]	3,671	2,884	6,556	29.4	96.0	75.7	85.9	1.27**

[1] **ASR is the age-standardised rate**

[2] **Rate ratio is the ratio of male to female death rates; rate ratios differing significantly from 1.0 are shown with * p <0.05; ** p <0.01**

[3] **Amenable mortality: avoidable deaths that were amenable to health care intervention**

Measure mapped

Age standardised ratios (Standardised Death Ratios, SDRs) have been calculated and mapped by place of usual residence, to illustrate the extent of variation in death rates between the populations in the areas mapped.

A brief description of the technique of standardisation, its purposes, and method of calculation is in Appendix 1.3.

For infant deaths, the measure is the infant mortality rate (infant deaths per 1,000 live births).

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Infant deaths, 1999 to 2002

Death in infancy represents the earliest indicator of premature mortality. Most infant deaths occur in the first four weeks of life, from conditions originating in the perinatal period. These conditions include spontaneous preterm labour, infections, hypertension, haemorrhage and maternal conditions affecting the newborn. Congenital abnormalities and Sudden Infant Death Syndrome (SIDS) account for many of the remaining deaths. Following a national 'Reducing the Risks' Campaign, which commenced in 1991, there has been a dramatic fall in the overall number of SIDS deaths, but a less substantial decline for Indigenous SIDS deaths.

In 1982 to 1986, the infant mortality rate (IMR) for Metropolitan Adelaide was 8.1 infant deaths per 1,000 live births (infant deaths are those deaths that occur before 12 months of age); by 1989 to 1993, it had declined to 4.8, and there was a further decline to 4.5 in 1999 to 2002, representing a reduction of 44.6% since the earliest period (Table 6.49). On an international scale, an IMR of 4.7 is low, reflecting South Australia's relatively high living standards and quality of health care. However, significant inequalities exist within the State, particularly for the Indigenous population which had a much higher IMR of 9.4 for the period 2002 to 2004 (ABS 2005).

Although it remains higher than in Metropolitan Adelaide, the IMR for country South Australia has declined by 66.2% since the period 1982 to 1986, when the rate was very high, at 15.1 infant deaths per 1,000 live births. The largest decline occurred from the period 1982 to 1985, to 1989 to 1993, when the rate had dropped to 6.0 infant deaths per 1,000 live births. There was a further decline to a rate of 5.1 over the period, 1999 to 2002.

Table 6.49: Infant deaths, selected periods

Infant deaths per 1,000 live births

Area	1982-1986	1989-1993	1999-2002	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	8.1	4.8	4.5	-44.6
Country	15.1	6.0	5.1	-66.2
South Australia	8.9	5.1	4.7	-47.4

[1]**Per cent change over the 16 year period in the rate of infant deaths**

Due to the small numbers of deaths at the SLA level over this four-year period, SLAs have been aggregated to the larger areas (as used for the Burden of Disease (BoD) estimates presented later in this chapter): they are referred to as BoD areas (Map 6.42).

Metropolitan regions

The infant mortality rate (IMR) of 4.5 infant deaths per 1,000 live births in 1999 to 2002 in the metropolitan regions (excluding Gawler) represented 226 infant deaths (Table 6.50). This death rate was consistent across the metropolitan regions with an IMR of 4.5 in both regions.

The correlation analysis showed consistently weak correlations between high infant death rates and indicators of socioeconomic disadvantage at the BoD area level (Table A12).

Central Northern Adelaide

In Central Northern, there were 161 infant deaths over the four years, 1999 to 2002, 4.5 infant deaths per 1,000 live births. There was considerable variation in IMRs within the region, with the highest IMR recorded for Salisbury - Central, Inner North, Balance (an IMR of 7.1, 24 infant deaths). This was in contrast to Salisbury - North-East, South-East, which had a much lower IMR of 3.5 (ten infant deaths).

The other BoD areas mapped in the highest range were Tea Tree Gully - South and Unley, with rates of 6.9 and 6.5, respectively, and both with ten infant deaths.

Of areas with at least four infant deaths, Tea Tree Gully - Central, Hills, North had a relatively low IMR, of 2.7 (nine deaths).

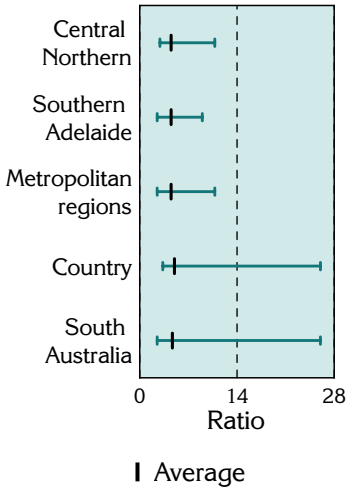
Southern Adelaide

As in Central Northern, the IMR in Southern was 4.5 infant deaths per 1,000 live births (64 deaths).

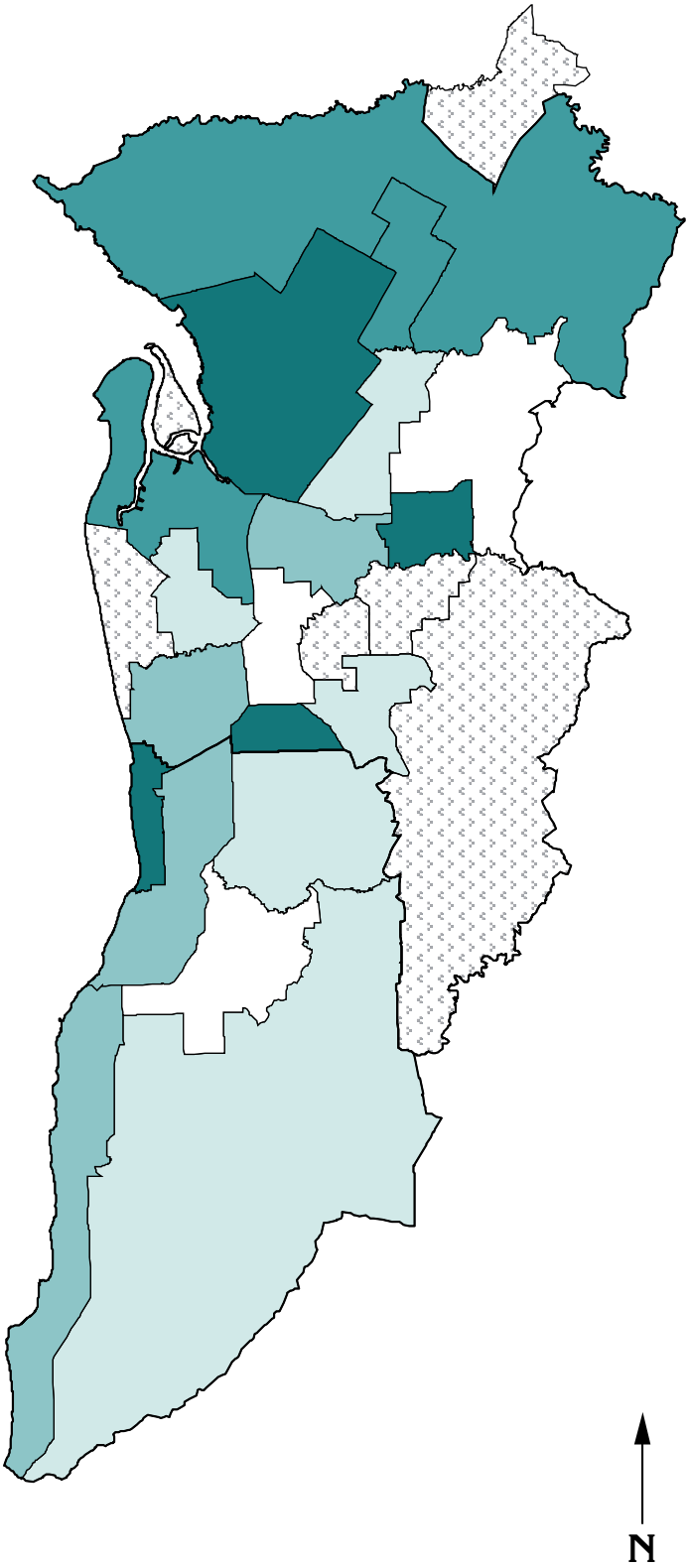
The areas in the region with above-average rates were Holdfast (an IMR of 9.0, nine deaths), Marion (5.3, 17 deaths), Port Adelaide Enfield - East, Inner (5.0, 12 deaths), and Onkaparinga - North Coast, South Coast (4.6, nine).

In contrast, the BoD area of Onkaparinga – Reservoir, Woodcroft had a low IMR of 3.2 (ten deaths).

Map 6.42
Infant deaths, metropolitan regions, 1999 to 2002



Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the BoD area level within the region.



BoD area
Health Region

Infant deaths per 1,000 live births

- *6.5 and above*
- *5.5 to 6.4*
- *4.5 to 5.4*
- *3.5 to 4.4*
- *below 3.5*
- *data not mapped*[#]

[#] *Data were not mapped for Torrens Island (mapped with Port Adelaide) or in areas with fewer than five deaths: Gawler has been mapped in the State map*

Source: See data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Country South Australia

In country South Australia, there were 103 deaths before 12 months of age over the period 1999 to 2002, an infant mortality rate (IMR) of 5.0 deaths per 1,000 live births.

The regions with the highest IMRs in country South Australia were the **South East** (7.1 infant deaths per 1,000 live births, 23 deaths) and **Northern and Far Western** (6.4, 18 deaths).

Table 6.50: Regional totals[1], infant deaths, 1999 to 2002

Region	No.	IMR[2]
Hills Mallee Southern	21	4.2
Hills	7	3.4
Southern	6	4.6
Mallee	8	4.8
Wakefield[3]	20	4.8
Gawler & Barossa	6	3.4
Balance of Wakefield	14	5.7
South East	23	7.1
Mount Gambier & Grant	16	9.8
Upper South East	7	4.4
Northern & Far Western	18	6.4
Eyre	7	3.8
Mid North	5	3.3
Riverland	9	5.2
Country SA	**103**	**5.0**
Central Northern	161	4.5
Southern	64	4.5
Metropolitan regions	**226**	**4.5**
South Australia	**329**	**4.7**

[1]**Region and Burden of Disease areas**
[2]**Infant mortality rate**
[3]**Gawler is included in Wakefield region**

The infant mortality rate was consistently weakly correlated with a number of the indicators of disadvantage, suggesting an association between infant mortality and disadvantage at the Burden of Disease (BoD) area level (Table A13).

The Regions

The highest regional IMR was recorded for the **South East** (an IMR of 7.1), where there were 23 infant deaths. The BoD area of Mount Gambier and Grant had a very high IMR of 9.8 (16 deaths). This rate was largely influenced by the extremely high IMR in Grant (26.0, eight deaths). Mount Gambier also had a relatively high IMR (6.0, eight deaths).

Northern and Far Western also had a high IMR of 6.4, with 18 infant deaths. Within the region, the SLAs of Port Augusta (9.5, seven deaths) and Whyalla (6.0, seven deaths) both recorded high IMRs. Both of these SLAs have relatively large Indigenous populations (a population group with higher rates of infant mortality than the rest of the State's population).

Riverland had an IMR of 5.2 (nine deaths) and very small numbers of deaths at the SLA level.

There were 20 deaths of infants in **Wakefield** (an IMR of 4.8). In the BoD areas mapped, there was an IMR in the combined Gawler and Barossa area of 3.4 (six deaths) and a higher IMR of 5.7 in the Balance of Wakefield (14 deaths). There were small numbers of deaths at the SLA level within this region.

Hills Mallee Southern had a relatively large number of deaths (21) with an IMR of 4.2. The IMRs for the BoD areas were relatively low: Mallee (an IMR of 4.8, eight deaths), Southern (4.6, six deaths), and Hills (3.4, seven deaths). The number of deaths in each of the SLAs was small, with Murray Bridge being the only SLA to record five deaths (with an IMR of 5.5).

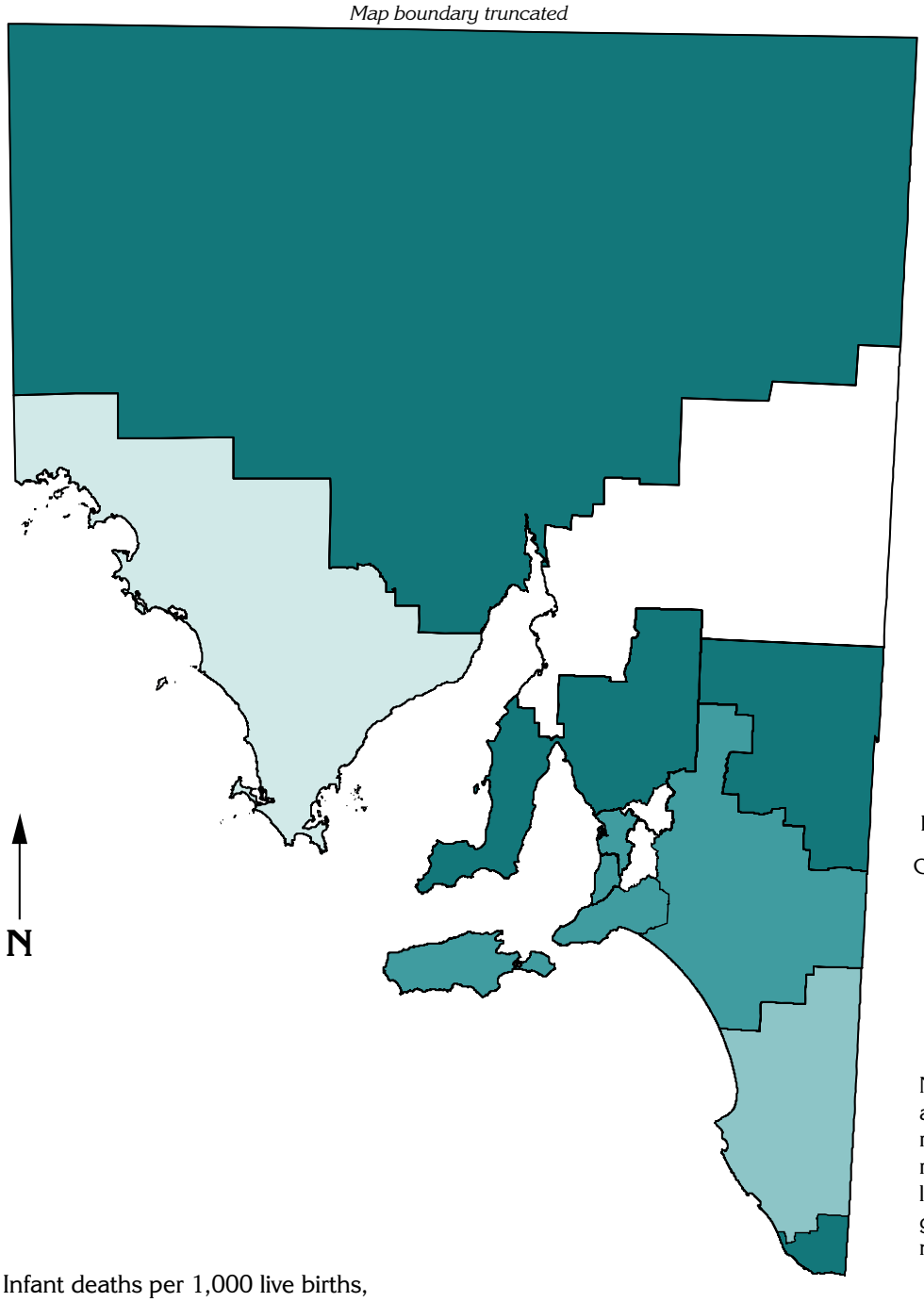
In **Eyre**, the IMR was 3.8 (seven deaths). Within the region, there were very small numbers of infant deaths, with many SLAs recording no deaths over the period from 1999 to 2002.

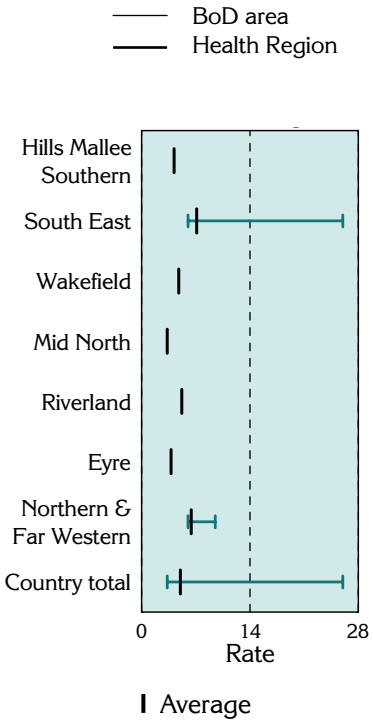
Mid North recorded the lowest IMR in country South Australia, and a small number of deaths (3.3, five deaths). There were also small numbers of deaths at the SLA level in this region, with many recording no deaths.

ASGC Remoteness classification

Infant death rates were highest in the Very Remote areas (6.3 infant deaths per 1,000 live births), although there were just five deaths in this four year period. Rates in the other remoteness classes ranged from 3.4 infant deaths per 1,000 live births in Remote to 6.0 in the Outer Regional areas.

Map 6.43
Infant deaths, South Australia, 1999 to 2002



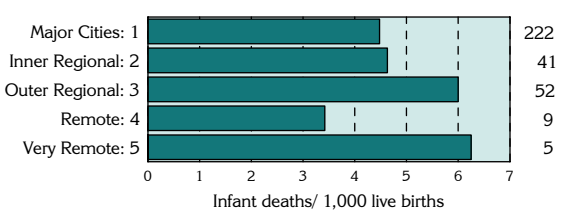


Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the BoD area level within the region. The lines not graphed had fewer than five deaths or no BoD areas within the regions.

Infant deaths per 1,000 live births, by BoD area

- *6.5 and above*
- *5.5 to 6.4*
- *4.5 to 5.4*
- *3.5 to 4.4*
- *below 3.5*

ASGC Remoteness classification



Source: See data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Deaths of males aged 15 to 64 years from all causes, 1999 to 2002

Deaths before 65 years of age are premature, given the life expectancy of South Australian males of 77.5 years over this period. Malignant neoplasms (cancer), circulatory system diseases, and accidents, poisonings and violence, were the main causes of premature death for males (Table 6.47). Males most likely to die prematurely include Indigenous men; those who are homeless, or who live in sheltered accommodation or low cost boarding houses; those earning low incomes; and those who are unemployed (Draper et al. 2004).

There were 6,021 deaths of males, on average, per year in South Australia in 1999 to 2002, of which 87.9% were aged from 15 to 64 years. In stark contrast, only 53.4% of female deaths occurred between the ages of 15 to 64 years. In Metropolitan Adelaide, the death rate per 100,000 for males aged 15 to 64 years declined from 345.4 in 1985 to 1989, down to 255.3 in 1999 to 2002, a decrease of 26.1% (Table 6.51). This decline was slightly higher than in country South Australia, where the rate declined from 409.7 per 100,000 to 295.0 (a decrease of 28.0%).

Table 6.51: Deaths of males aged 15 to 64 years from all causes

Age-standardised rate per 100,000 males aged 15 to 64 years

Area	1985-1989	1992-1995	1999-2002	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	345.4	292.4	255.3	-26.1
Country	409.7	346.6	295.0	-28.0
South Australia	363.2	307.6	266.4	-26.7

[1]**Per cent change over the 13 year period in the rate of male deaths**

Metropolitan regions

The Standardised Death Ratio (SDR) for males aged 15 to 64 years in the metropolitan regions (excluding Gawler) from 1999 to 2002 was 96*, with four per cent fewer deaths than expected from the State rates (3,609 deaths) (Table 6.52).

The pattern of SDRs at the SLA level (Map 6.44) is consistent with the pattern of socioeconomic disadvantage seen in Chapters 4 and 5.

There were very strong correlations between high rates of premature male deaths and jobless families; unemployment; low income and single parent families; Indigenous status; SA Housing Trust rented dwellings; and clients of community mental health services. There were strong correlations with admissions to public acute hospitals; dwellings without a motor vehicle; unskilled and semi-skilled workers; GP services to males; and poor proficiency in English. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between high premature death rates for males and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

The SDR for 15 to 64 year old males was higher in the Central Northern region than in Southern, with an SDR of 98 (2,611 deaths). A large number of SLAs had ratios elevated by more than 30 per cent, including Playford - West Central (an SDR of 187**, 76 deaths) and - Elizabeth (158**, 131); Port Adelaide Enfield - Port (169**, 143), - Coast (139**, 135) and - Inner (135**, 82); Salisbury Balance (165*, 22); Adelaide (135**, 76); and Charles Sturt - North-East (130**, 107).

Large numbers of deaths were recorded for males in Salisbury - South-East (118 deaths, 91) and - Central (107, 116), Port Adelaide Enfield - East (111 deaths, 114), and Tea Tree Gully - South (103, 80*).

There was greater variation in SDRs in Central Northern compared with Southern (see graph opposite), with a number of SLAs mapping in the lowest range. These included Tea Tree Gully - Hills (41**, 22 deaths); Adelaide Hills - Ranges (43**, 17) and - Central (50**, 26); Burnside - North East (61**, 50); Playford - East Central (61**, 35); Tea Tree Gully - North (66**, 54) and - Central (68**, 67); Walkerville (an SDR of 73, 20); Unley - West (75, 43); Charles Sturt - Coastal (76**, 90); and Campbelltown - East (77*, 81).

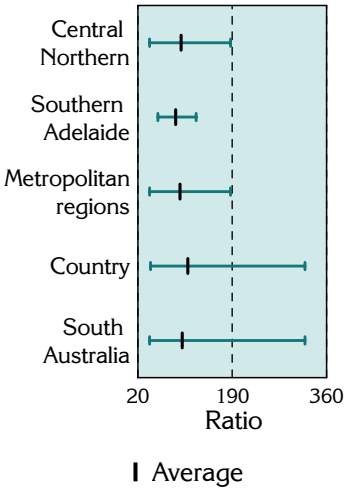
Southern Adelaide

There were few SDRs of greater than 100 in Southern, with an overall SDR of 88** (977 deaths). The highest SDR in this region, with 25 per cent more deaths than expected from the State rates, was in Marion - North (125*, 100 deaths). This was followed by elevated, but not statistically significant SDRs in Onkaparinga - North Coast (an SDR of 114, 74 deaths) and - Hackham (112, 53), Holdfast Bay - South (111, 58) and - North (103, 66), and Marion - Central (107, 130).

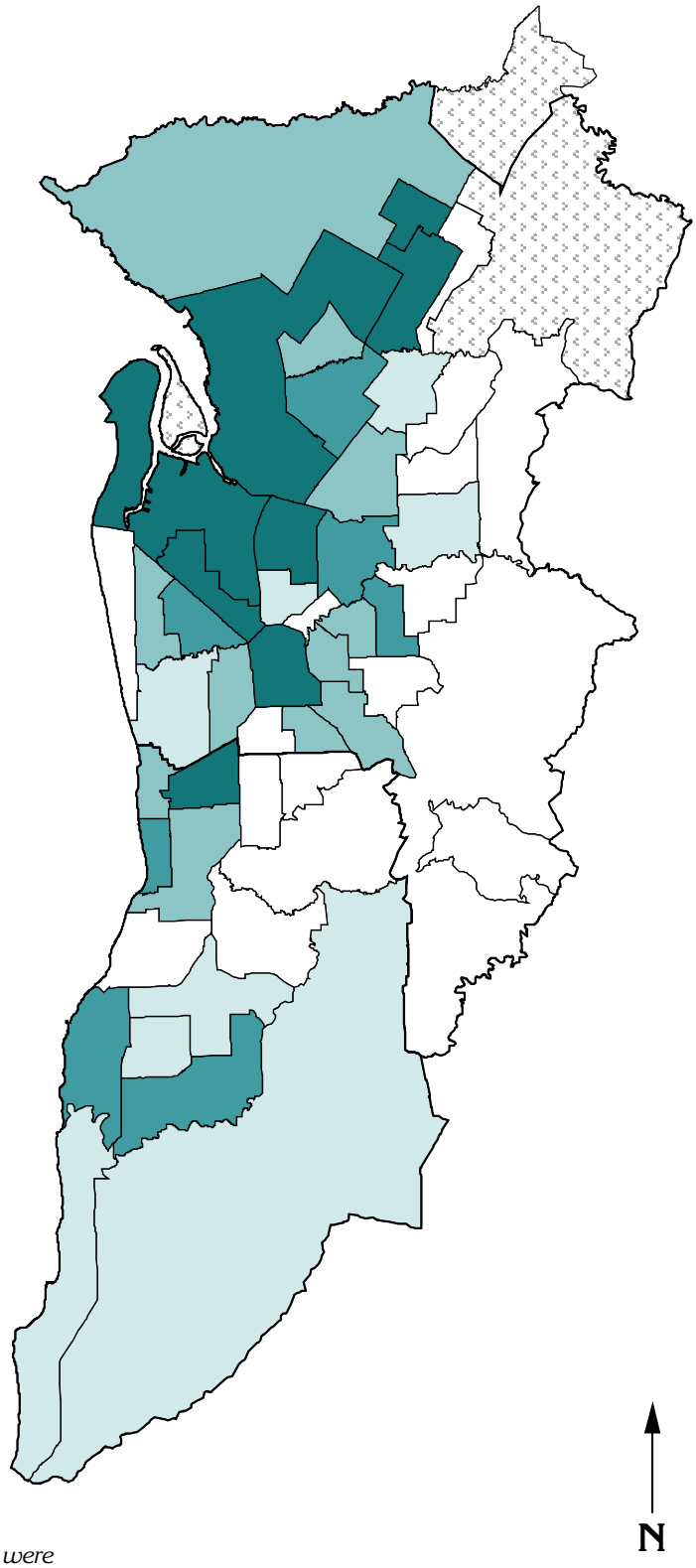
The Onkaparinga SLAs of - Woodcroft (90 deaths, 82) and - Morphett (71 deaths, 82) both had large numbers of male deaths. The SLA with the lowest SDR in the south was Mitcham - Hills (56**, 53 deaths), followed by Mitcham - North-East (59**, 32), Onkaparinga - Reservoir (65**, 54), Marion - South (75, 44) and Mitcham - West (76*, 57).

* **indicates statistical significance: see page 24**

Map 6.44
Deaths of males aged 15 to 64 years from all causes, metropolitan regions, 1999 to 2002



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Death Ratio (as an index)*, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped*#

*Index shows the number of deaths of people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

Data were not mapped for Torrens Island (mapped with Port Adelaide) or in areas with fewer than five deaths: Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Deaths of males aged 15 to 64 years from all causes, 1999 to 2002

Country South Australia

There were 1,686 deaths of males aged 15 to 64 years and resident in country South Australia, ten per cent more than expected from the State rates (Table 6.52).

The SLAs with the highest Standardised Death Ratios (SDRs) were located in the north of the State (Map 6.45) which is, in part, a reflection of the higher proportions of Aboriginal people living in these areas, and their higher premature death rates. Data for a number of SLAs have not been mapped, as there were too few cases from which to calculate reliable rates.

Table 6.52: Regional totals, deaths of males aged 15 to 64 years, 1999 to 2002

Region	Number	SDR
Hills Mallee Southern	388	96
Wakefield[1]	370	106
South East	215	97
Northern & Far Western	280	145**
Eyre	137	113
Mid North	136	115
Riverland	138	113
Country SA	**1,686**	**110****
Central Northern	2,611	98
Southern	977	88**
Metropolitan regions	**3,609**	**96***
South Australia	**5,295**	**100**

[1] **Gawler is included in Wakefield region**

Premature male deaths in country South Australia were strongly correlated with unemployment at the SLA level. There was a weak inverse correlation with the Index of Relative Socio-Economic Disadvantage, and weak correlations with Indigenous status, dwellings without a motor vehicle, admissions to public acute hospitals and low income and jobless families (Table 8.2).

The Regions

Northern and Far Western had 45% more premature deaths than expected from the State rates, an SDR of 145** (280 deaths). Within the region, there was a highly elevated SDR in Unincorporated Far North, with nearly two and a half times the expected number of deaths (244**, 47 deaths); this SLA has a relatively large Indigenous population (41.4% of the total population for the area). There were also highly elevated SDRs in Flinders Ranges (186*, 12 deaths), Port Augusta (151**, 75), Coober Pedy (an SDR of 138, 20) and Whyalla (131**, 110).

Mid North had an SDR of 115 (136 deaths). Orroroo/Carrieton had the highest SDR in country South Australia, with over three times the expected number of deaths (an SDR of 321**, 12 deaths). Port Pirie - City also had an elevated SDR (124, 63).

Eyre had an SDR of 113 (137 deaths). There were highly elevated SDRs in Ceduna (223**, 28 deaths), Unincorporated West Coast (189, four), Franklin Harbor (140, seven), Elliston (138, seven) and Le Hunte (120, six). There were 57% fewer deaths than expected in Lower Eyre Peninsula (43*, seven). Port Lincoln had 49 deaths (an SDR of 111).

In **Riverland**, the SDR was 113 (138 deaths). There were elevated ratios in the SLAs of Renmark Paringa - Renmark (137, 37) and - Paringa (136, eleven), and Loxton Waikerie - West (126, 23); and a low ratio in Loxton Waikerie - East (74, 20 deaths). Berri and Barmera - Berri had 30 deaths (117).

There were 370 premature deaths in **Wakefield** (an SDR of 106), with 73% more deaths than expected in the SLA of Wakefield (an SDR of 173**, 39 deaths) and elevated ratios in Copper Coast (148**, 60), Yorke Peninsula - South (139, 22) and Mallala (136, 35). There were fewer premature deaths than expected in Barossa - Tanunda (66, ten) and - Barossa (71, 19), Light (66, 25), and Clare and Gilbert Valleys (74, 23). Large numbers of deaths were recorded in the SLAs of Gawler (54 deaths, an SDR of 93) and Yorke Peninsula - North (39, 118).

There were three per cent fewer deaths than expected in **South East** (an SDR of 97, 215 deaths). The only SLA with an elevated SDR was Mount Gambier (124*, 94). There were fewer deaths than expected in Lacepede (53, five deaths) and Grant (75, 24 deaths). Wattle Range - West recorded 33 deaths (an SDR of 100).

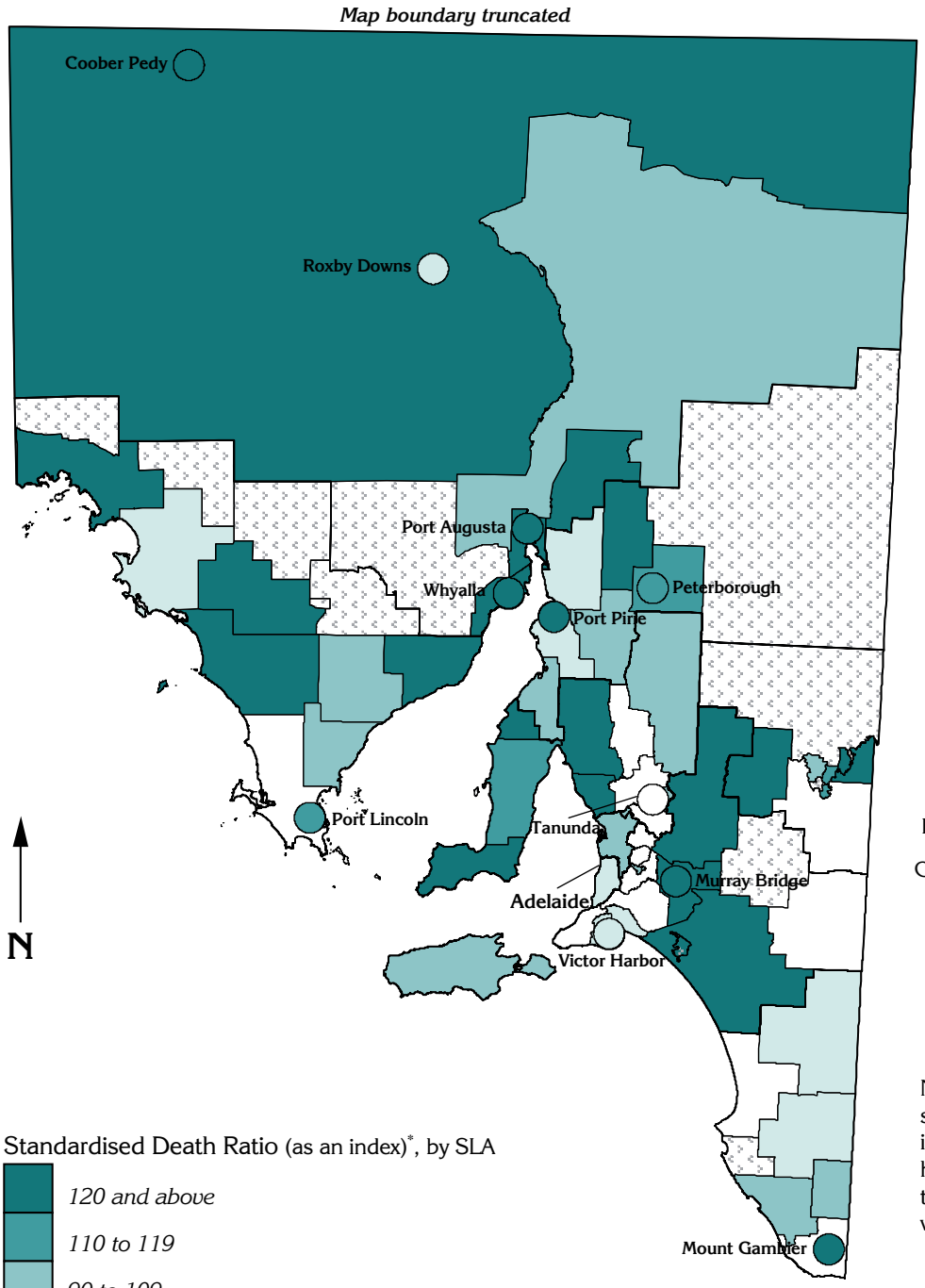
There were 388 deaths in **Hills Mallee Southern**, four per cent fewer than expected (an SDR of 96). The SLAs of Mid Murray (an SDR of 151**, 54), The Coorong (146*, 35) and Murray Bridge (127*, 78) all had elevated SDRs. A number of SLAs in this region had low SDRs including Adelaide Hills - North (49**, 13), Southern Mallee (58, five deaths), Adelaide Hills Balance (62*, 19), Mount Barker Balance (an SDR of 74, 21), Alexandrina - Strathalbyn (75, 22) and Yankalilla (76, 12).

ASGC Remoteness classification

The lowest SDRs for premature deaths of males were recorded in the Major Cities (an SDR of 96**) and Inner Regional (95) areas. The highly elevated SDR in the Very Remote areas (183**, almost twice the number of deaths of males at these ages expected from the State rates) reflects the very high premature death rates of Indigenous males.

* **indicates statistical significance: see page 24**

Map 6.45
Deaths of males aged 15 to 64 years from all causes, South Australia, 1999 to 2002



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

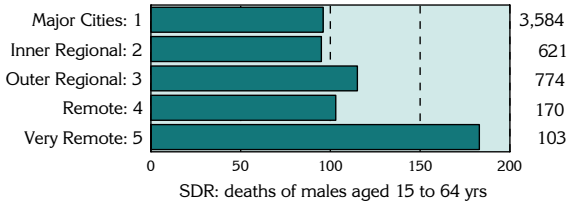
Standardised Death Ratio (as an index)*, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped#*

*Index shows the number of deaths of people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100, or there were fewer than five deaths

ASGC Remoteness classification



Source: See data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Deaths of females aged 15 to 64 years from all causes, 1999 to 2002

Deaths before 65 years of age are premature, given the life expectancy of South Australian females of 82.7 years over this period. As for males, cancer was the main cause of premature death for females, followed by diseases of the circulatory system and the combined causes of accidents, poisonings and violence (Table 6.47). Females most likely to die prematurely include Aboriginal and Torres Strait Islander women; single mothers; those earning low incomes; and those who were unemployed (Dunn et al. 2002).

Overall, there were 5,733 deaths of female residents in South Australia, of whom 3,061 were aged from 15 to 64 years. The data mapped for this variable therefore represent 53.4% of all female deaths. The premature female death rate in Metropolitan Adelaide has declined from 179.9 deaths per 100,000 in 1985 to 1989, down to 150.2 in 1999 to 2002, a decrease of 16.5%, compared with a smaller decrease (and higher rates) in country South Australia (Table 6.53).

Table 6.53: Deaths of females aged 15 to 64 years from all causes

Age-standardised rate per 100,000 females aged 15 to 64 years

Area	1985-1989	1992-1995	1999-2002	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	179.9	162.9	150.2	-16.5
Country	189.3	183.0	169.9	-10.2
South Australia	182.3	168.2	155.4	-14.8

[1]**Per cent change over the 13 year period in the rate of female deaths**

Metropolitan regions

Over the period 1999 to 2002, there were 2,137 premature deaths of females in the metropolitan regions (excluding Gawler), a Standardised Death Ratio (SDR) of 96.

The pattern of SDRs at the SLA level (Map 6.46) is generally consistent with the pattern of socioeconomic disadvantage seen in Chapters 4 and 5.

Premature female deaths were very strongly correlated at the SLA level with the variables for low income and jobless families; unemployment; Indigenous status; and community mental health service clients. There were strong correlations with single parent families; smoking during pregnancy; unskilled and semi-skilled workers; and dwellings without a motor vehicle. These results, together with the strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between high premature death rates for females and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

There were 1,541 premature female deaths in the Central Northern region, one per cent fewer deaths than expected from the State rates. There is, however, considerable variation throughout the region, from 70% more premature deaths than expected from the State rates in Playford - West Central (an SDR of 170**, 39 deaths), to 56% fewer in Adelaide Hills Ranges (44**, ten deaths).

There were also elevated ratios in the SLAs of Playford - Elizabeth (an SDR of 146**, 75 deaths), Unley - East (140*, 53), Port Adelaide Enfield - Inner (138*, 51), - Port (119, 57) and - East (124, 71), Salisbury - South-East (124*, 88), Campbelltown - West (122, 47), Salisbury - Central (120, 63) and Charles Sturt - Inner East (118, 50).

There were large numbers of premature female deaths in the SLAs of Tea Tree Gully - South (72 deaths, an SDR of 96), Charles Sturt - Coastal (68 deaths, 92), Port Adelaide Enfield - Coast (63 deaths, 107) and - Port (57 deaths, 119), and Campbelltown - East (55 deaths, 82).

SLAs with the lowest ratios in the region included Burnside - North-East (an SDR of 48**, 24 deaths), Tea Tree Gully - North (63*, 29), Burnside - South-West (71*, 32), West Torrens - West (73*, 43), Tea Tree Gully - Central (74*, 43), Adelaide Hills - Central (74, 21), Norwood Payneham St Peters - East (77, 26) and Salisbury Balance (79, seven).

Southern Adelaide

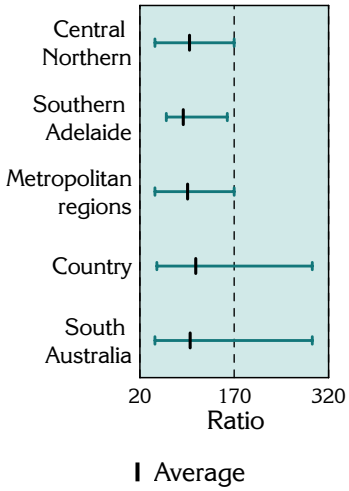
The SDR for premature female deaths was lower in Southern than in Central Northern region, with eleven per cent fewer deaths than expected from the State rates (89**, 586 deaths). The highest SDR in the south was recorded for Onkaparinga - North Coast, with 59% more premature deaths than expected (159**, 57 deaths). There was also an elevated ratio in Holdfast Bay - South (122, 38).

Marion - Central (70 deaths, an SDR of 93), Onkaparinga - Morphett (49 deaths, 101), Marion - North (49 deaths, 104) and Onkaparinga - Woodcroft (48 deaths, 73*) all had large numbers of premature female deaths.

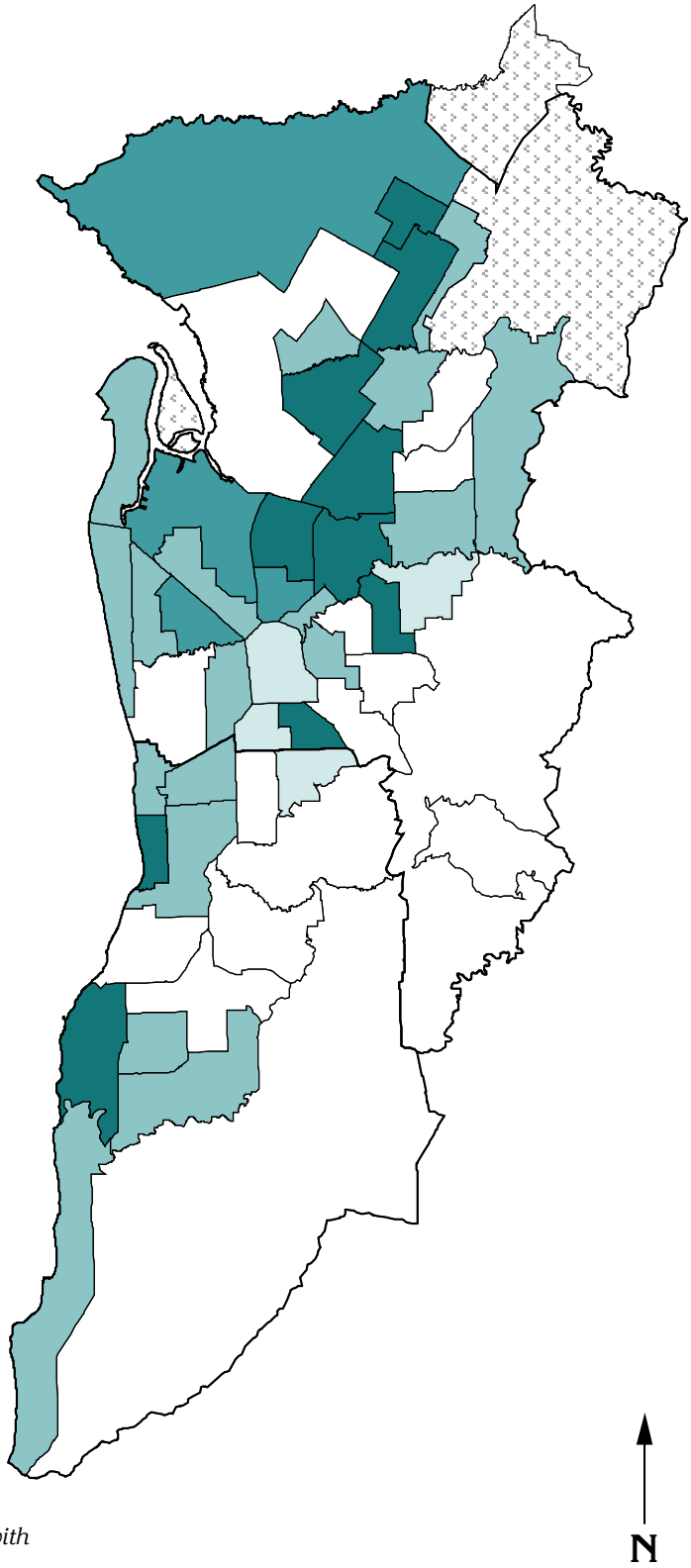
Low ratios were recorded for the SLAs of Marion - South (an SDR of 62*, 24 deaths), Onkaparinga - Reservoir (63**, 31), - Woodcroft (73*, 48) and - Hills (66, 16), and Mitcham - Hills (69*, 41), - West (72, 32), and - North-East (82, 26).

* **indicates statistical significance: see page 24**

Map 6.46
Deaths of females aged 15 to 64 years from all causes, metropolitan regions, 1999 to 2002



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Death Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

*Index shows the number of deaths in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide) or in areas with fewer than five deaths: Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Deaths of females aged 15 to 64 years from all causes, 1999 to 2002

Country South Australia

Females aged from 15 to 64 years living in country South Australia recorded nine per cent more deaths than expected from the State rates (an SDR of 109**, 924 deaths). Data for a number of SLAs have not been mapped, as there were considered to be too few cases from which to calculate reliable rates.

As for males, the most highly elevated Standardised Death Ratios (SDRs) at the regional level were in areas with relatively large Indigenous populations (Table 6.54). High SDRs were mapped throughout the State (Map 6.47).

Table 6.54: Regional totals, deaths of females aged 15 to 64 years, 1999 to 2002

Region	Number	SDR
Hills Mallee Southern	229	99
Wakefield[1]	208	104
South East	118	98
Northern & Far Western	124	131**
Eyre	79	121
Mid North	75	112
Riverland	88	135**
Country SA	**924**	**109****
Central Northern	1,541	99
Southern	586	89**
Metropolitan regions	**2,137**	**96**
South Australia	**3,061**	**100**

[1]**Gawler is included in Wakefield region**

There were strong correlations between premature female deaths, Indigenous status and unemployment; and weaker correlations with the other indicators of socioeconomic disadvantage. These results, together with the weak inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between high premature death rates for females and socioeconomic disadvantage (Table 8.2).

The Regions

Riverland had the most highly elevated regional standardised death ratio in country South Australia, with 35% more deaths than expected from the State rates (135**, 88 deaths). Within this region, there were highly elevated ratios in the SLAs of Berri and Barmera - Berri (an SDR of 159*, 21 deaths); Loxton Waikerie - West (153, 14) and - East (144, 21); and an elevated ratio in Renmark Paringa - Renmark (an SDR of 116, 18).

Northern and Far Western had an elevated SDR of 131** (124 deaths). Unincorporated Far North, an SLA with a large Indigenous population, had the most highly elevated SDR, at nearly three times the expected rate (294**, 21 deaths). There were also elevated ratios in Flinders Ranges (175, seven deaths) and Port Augusta (131, 34). Fifty deaths were recorded in Whyalla (with an SDR of 110).

In **Eyre**, there were 21% more premature female deaths than expected (and SDR of 121, 79 deaths), with a highly elevated SDR of 268** in Ceduna (17 deaths). Port Lincoln had an SDR of 128 (32 deaths); Cleve (166, six), Streaky Bay (158, six) and Tumby Bay (118, seven deaths) all had elevated SDRs, but with small numbers of deaths.

Mid North had an SDR of 112 (75 deaths). There were highly elevated SDRs in the SLAs of Peterborough (192*, ten deaths), Mount Remarkable (147, ten), Northern Areas (141, 13) and Barunga West (119, seven). Port Pirie Balance had a low SDR of 65 (five deaths).

There were 208 premature deaths of females in **Wakefield** (an SDR of 104); with elevated SDRs in Goyder (137, 13 deaths), Barossa - Tanunda (127, eleven) and Copper Coast (125, 32). Forty deaths were recorded in Gawler (an SDR of 111). There were lower than expected SDRs in Barossa - Barossa (61, nine deaths) and Light (78, 16).

Hills Mallee Southern had an SDR of 99, and 229 deaths. Yankalilla (179*, 17) and Murray Bridge (126, 42) both had elevated SDRs. There were relatively large numbers of deaths in the SLAs of Mount Barker - Central (30 deaths, 112), Victor Harbor (27, 112) and Alexandrina - Coastal (20, 86). Mid Murray (an SDR of 70, 13 deaths) and Mount Barker Balance (73, 13) both had low SDRs.

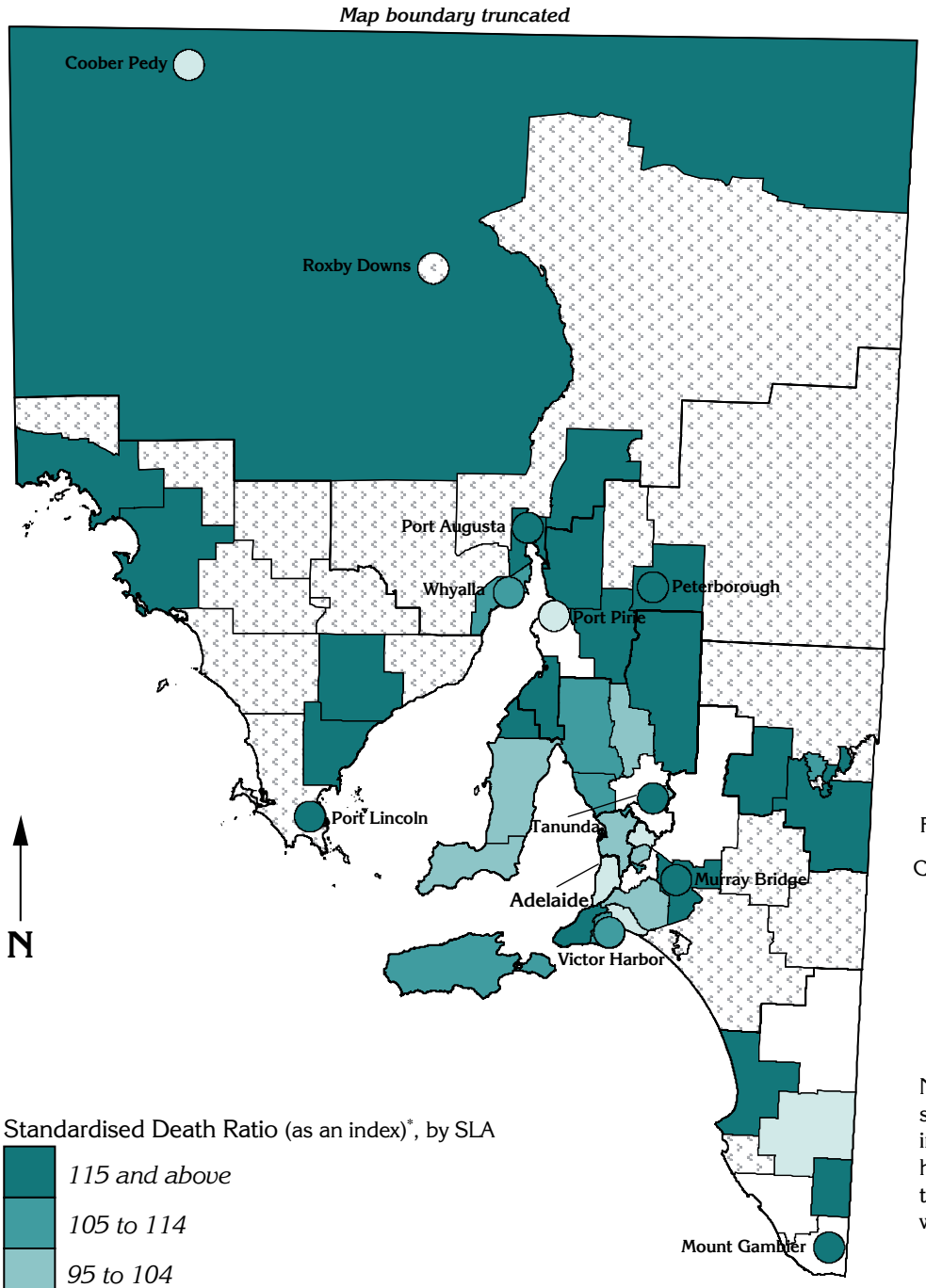
South East had the lowest SDR in country South Australia, with two per cent fewer premature deaths than expected from the State rates (98, 118 deaths). There was a highly elevated SDR in Wattle Range - East (275**, 17) and elevated SDRs in Lacepede (123, seven deaths) and Mount Gambier (116, 50). Some of the lowest SDRs in country South Australia were recorded in this region, including in the SLAs of Tatiara (47, six deaths), Wattle Range - West (51*, nine) and Grant (77, 13).

ASGC Remoteness classification

Standardised death ratios for females show a similar pattern to those for males, but with a higher ratio in the Very Remote areas. The ratios range from a low of 97 in the Major Cities areas to a highly elevated 198** in the Very Remote areas. As noted for males, the elevated SDR in the Very Remote areas is likely to reflect the very high premature death rates experienced by Aboriginal females.

* **indicates statistical significance: see page 24**

Map 6.47
Deaths of females aged 15 to 64 years from all causes, South Australia, 1999 to 2002



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

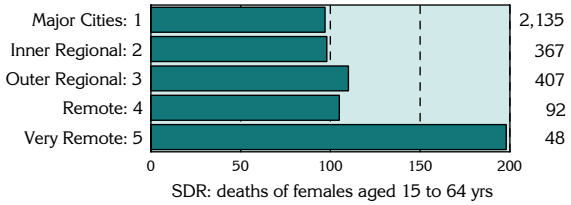
Standardised Death Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

*Index shows the number of deaths in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100, or there were fewer than five deaths

ASGC Remoteness classification



Source: See data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Avoidable mortality, 1999 to 2002
Deaths at ages 0 to 74 years from potentially avoidable causes

One approach to assessing the quality of health care, in terms of clinical outcomes, has been to identify deaths that should not have occurred, given the availability of health care interventions. The largest contributors to these deaths are cancers and cardiovascular diseases (around one third each), unintentional and intentional injuries (15% each) and respiratory diseases (six per cent). A more detailed description of the concept of 'avoidable mortality' is at the beginning of this section (page 281); only deaths before the age of 75 years have been included in this analysis.

In 1999 to 2002, there were 11,345 avoidable deaths in South Australia, a rate of 812 deaths per 100,000 population. In Metropolitan Adelaide, the rate was 776 deaths per 100,000 population, representing 7,893 deaths; a higher rate, of 909 deaths per 100,000 population (3,448 deaths) was recorded for residents of country South Australia (Table 6.55).

Table 6.55: Avoidable mortality, 1999 to 2002

Age standardised rate per 100,000 persons aged 0 to 74 years

Area	No.	Rate
Metropolitan Adelaide (incl. Gawler)	7,893	776
Country	3,448	909
South Australia	11,345	812

Metropolitan regions

There were 7,765 avoidable deaths in 1999 to 2002 in the metropolitan regions (excluding Gawler), four per cent fewer than expected from the State rates, and a standardised ratio (SR) of 96** (Table 6.56).

The pattern of SRs at the SLA level (Map 6.48) is consistent with the pattern of socioeconomic disadvantage seen in Chapters 4 and 5.

Avoidable mortality was very strongly correlated with high rates of jobless families; community mental health clients; being Indigenous; unemployment; single parent families; low income families; Disability Support Pensioners; Housing Trust rented dwellings; dwellings without a motor vehicle; and outpatient attendances and admissions to public acute hospitals. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Status, indicate an association at the SLA level between avoidable mortality and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

Residents of Central Northern had 5,644 deaths from avoidable causes, one per cent fewer than expected from the State rates.

A number of SLAs in the region had highly elevated ratios, with the highest being in Playford - West Central, where there were 64% more avoidable deaths than expected (an SR of 164**, 133 deaths). Playford - Elizabeth had 44% more avoidable deaths than expected (an SR of 144**, 307 deaths), with other high ratios in Port Adelaide Enfield - Port (132**, 275) and - Inner (130**, 214); Charles Sturt - North-East (127**, 250); Adelaide (122*, 114); Salisbury - Central (121**, 213) and Balance (121, 32); and Port Adelaide Enfield - Coast (120**, 261).

There were large numbers of avoidable deaths in Salisbury - South-East (276 deaths, an SR of 114*), Port Adelaide Enfield - East (247 deaths, 105), Tea Tree Gully - South (227, 92), Charles Sturt - Inner West (206, 92), Charles Sturt - Inner East (201, 104), West Torrens - East (195, 104), and Campbelltown - West (171, 96).

A number of SLAs in Central Northern had fewer avoidable deaths than expected from the State rates. These included Playford Hills (an SR of 37**, seven deaths), Adelaide Hills - Ranges (55**, 37), Tea Tree Gully - Hills (61**, 58), Burnside - North-East (65**, 121), Walkerville (66**, 42), Adelaide Hills - Central (67**, 58), Tea Tree Gully - North (70**, 97) and - Central (72**, 128), West Torrens - West (78**, 202), Unley - West (79**, 93), Campbelltown - East (79**, 169) and Charles Sturt - Coastal (79**, 214).

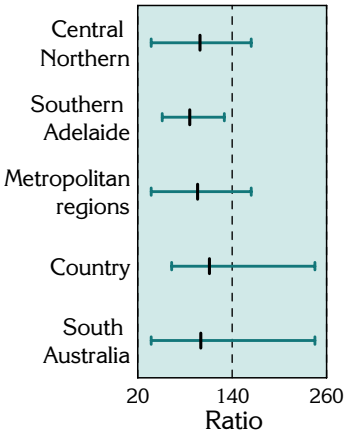
Southern Adelaide

There were 14% fewer avoidable deaths than expected in Southern (an SR of 86**, 2,088 deaths), but 30% more avoidable deaths than expected in Onkaparinga - North Coast (an SR of 130**, 184 deaths). There were large numbers of avoidable deaths in Marion - Central (314 deaths, an SR of 97) and - North (232, 105), and Onkaparinga - Morphett (162 deaths, 100) and - Woodcroft (157, 80**).

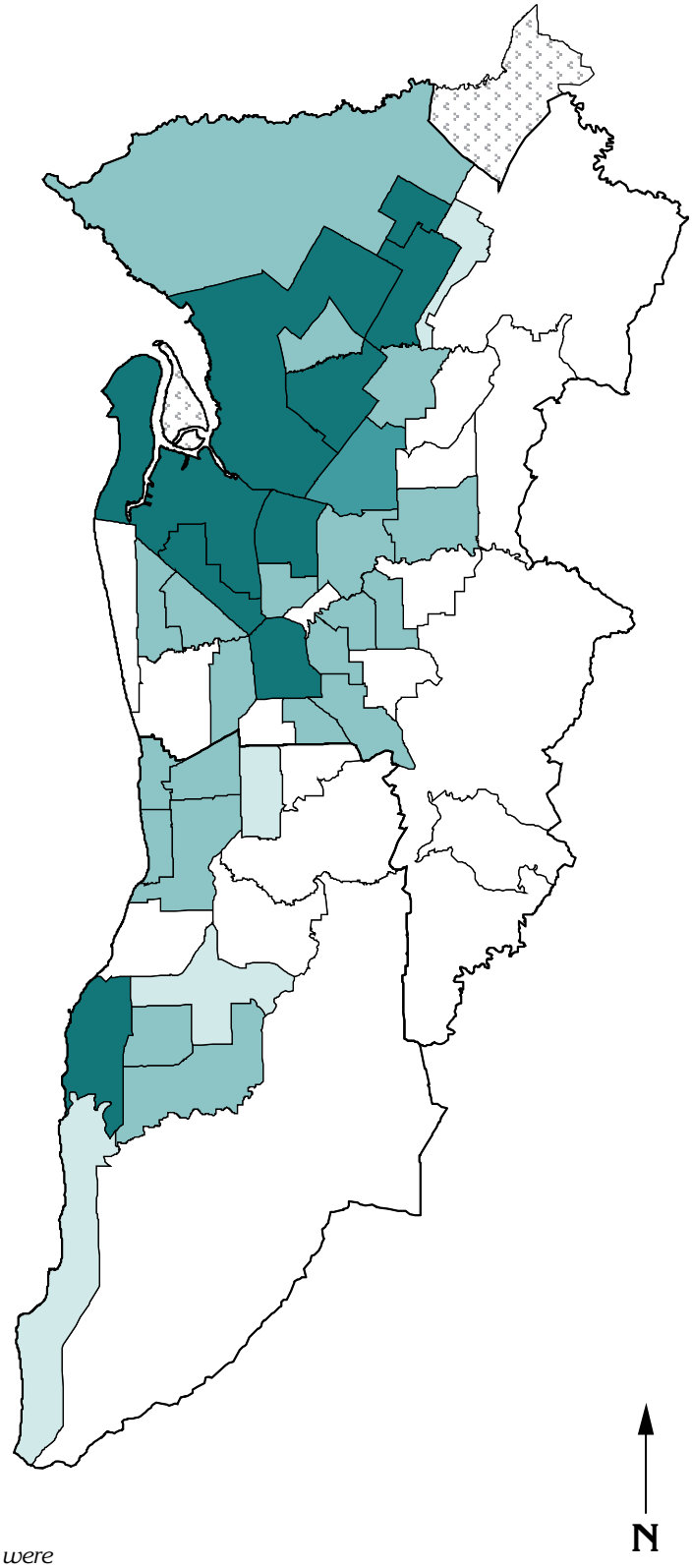
There were lower than expected ratios of avoidable death in Mitcham - North-East (an SR of 51**, 63 deaths), Onkaparinga - Reservoir (55**, 80), Mitcham - Hills (59**, 112), Onkaparinga - Hills (62**, 51) and Marion South (68**, 76).

* **indicates statistical significance: see page 24**

Map 6.48
Avoidable mortality, metropolitan regions, 1999 to 2002
Deaths at ages 0 to 74 years from potentially avoidable causes



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index) *, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped#*

*Index shows the number of avoidable deaths in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide) or in areas with fewer than five deaths: Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Avoidable mortality, 1999 to 2002
Deaths at ages 0 to 74 years from potentially avoidable causes

Country South Australia

There were 3,580 avoidable deaths in country South Australia in 1999 to 2002, eleven per cent more than expected from the State rates (a standardised death ratio (SR) of 111**); this compares with four per cent fewer deaths in the metropolitan regions.

All of the regions in the country had ratios of 100 or more (Table 6.56). **Northern and Far Western** had the most highly elevated ratio, with 42% more avoidable deaths than expected (an SR of 142**, 492 deaths) (see graph opposite). Given these high rates at the regional level, many SLAs across the State also had high rates (Map 6.49).

Table 6.56: Regional totals, avoidable mortality, 1999 to 2002

Region	Number	SR
Hills Mallee Southern	875	100
Wakefield[1]	802	102
South East	489	108
Northern & Far Western	492	142**
Eyre	265	108
Mid North	324	124**
Riverland	309	122**
Country SA	**3,580**	**111****
Central Northern	5,644	99
Southern	2,088	86**
Metropolitan regions	**7,765**	96**
South Australia	**11,345**	**100**

[1]**Gawler is included in Wakefield region**

Avoidable mortality was very strongly correlated with being Indigenous and with dwellings without a motor vehicle. There were also strong correlations with jobless families, single parent families, unemployment and admissions to public acute hospitals. These results, together with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between avoidable mortality and socioeconomic disadvantage (Table 8.2).

The Regions

There were 492 avoidable deaths in **Northern and Far Western** in 1999 to 2002, 42% more than expected (an SR of 142**). There was a very highly elevated ratio in Unincorporated Far North, with nearly two and a half times the expected number of avoidable deaths (245**, 66 deaths), with other highly elevated ratios in Unincorporated Flinders Ranges (an SR of 163 but not statistically significant, and eleven deaths), Port Augusta (150**, 141), Coober Pedy (132, 28) and Whyalla (129**, 214).

Mid North had 24% more avoidable deaths than expected from the State rates (324 deaths), with elevated ratios in Peterborough (an SR of 158**, 32 deaths), Barunga West (144*, 34), Port Pirie - City (135**, 152) and Orroroo/Carrieton (129, 13).

In **Riverland**, there were 22% more avoidable deaths than expected (an SR of 122**, 309 deaths). SLAs with highly elevated ratios were Renmark Paringa - Paringa (an SR of 146, 22 deaths), Loxton Waikerie - West (131, 50), Renmark Paringa - Renmark (125, 75), and Berri and Barmera - Berri (120, 56) and - Barmera (115, 43).

There were 489 avoidable deaths in **South East** (an SR of 108), with elevated ratios in Wattle Range - East (152*, 37) and Mount Gambier (126**, 203). Large numbers of avoidable deaths occurred in Wattle Range - West (78 deaths, an SR of 112) and Naracoorte and Lucindale (56 deaths, 98). There were low ratios of avoidable deaths in Grant (71*, 41) and Tatiara (an SR of 81, 40).

Eyre also had an elevated ratio of 108 (265 avoidable deaths). The SLAs of Unincorporated West Coast (an SR of 214*, seven deaths), Ceduna (157**, 33), Tumby Bay (140*, 34), Kimba (116, 13), Streaky Bay (116, 16) and Elliston (116, eleven) all had elevated ratios. Low ratios were recorded in Lower Eyre Peninsula (an SR of 71, 22 deaths) and Cleve (an SR of 79, 12 deaths).

There were 802 avoidable deaths in **Wakefield** (an SR of 102), with elevated ratios in Copper Coast (142**, 150 deaths), Yorke Peninsula - South (125, 53) and - North (123*, 96), and Goyder (121, 45). Gawler had 128 avoidable deaths (an SR of 91). There were low ratios of avoidable deaths in Light (an SR of 63*, 45 deaths), Barossa - Barossa (68*, 34) and Clare and Gilbert Valleys (84, 56).

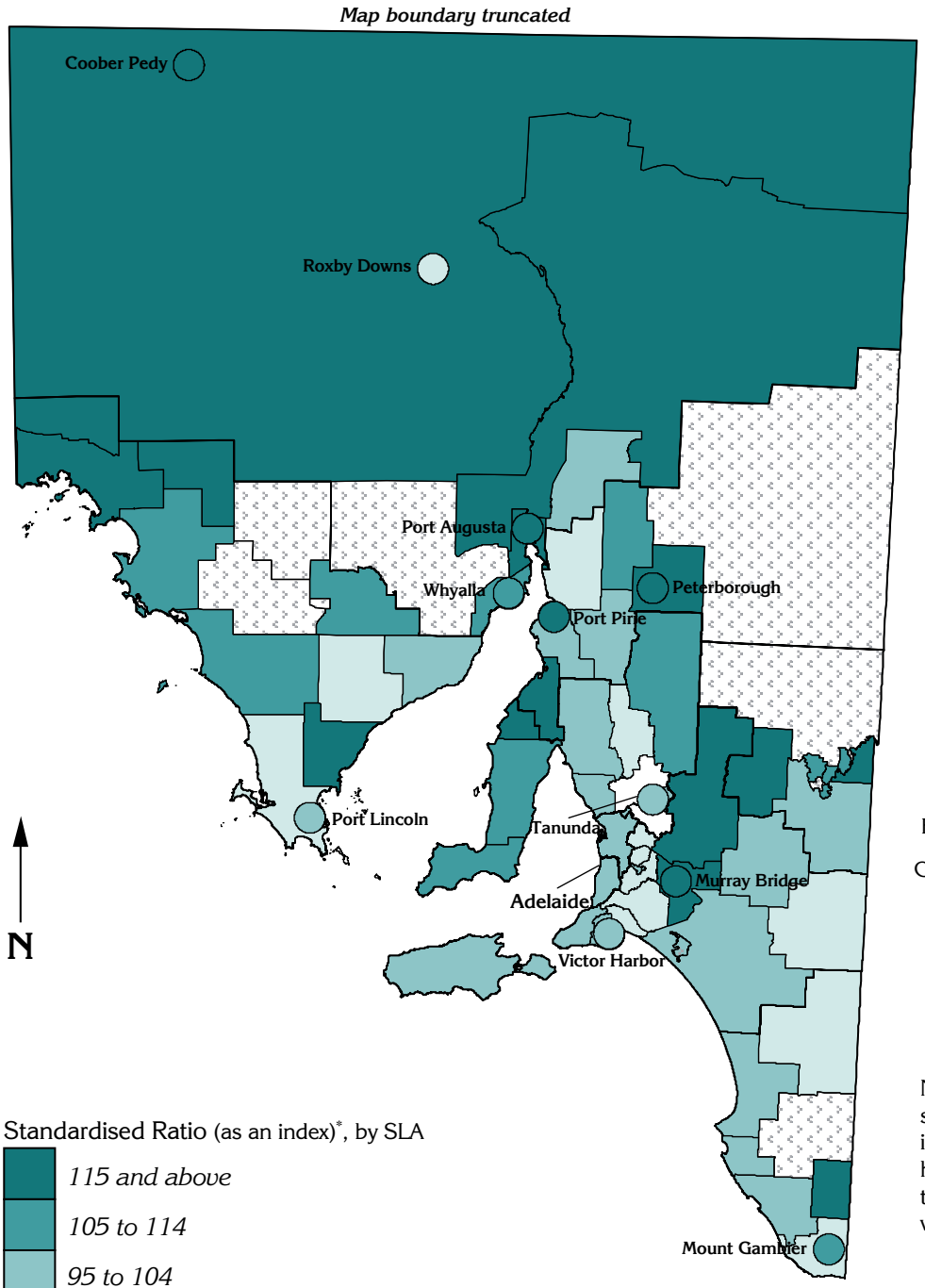
Hills Mallee Southern had 875 avoidable deaths in 1999 to 2002 (an SR of 100). Within this region, there were elevated ratios in Mid Murray (an SR of 145**, 102 deaths) and Murray Bridge (136**, 171). A number of SLAs had low ratios, including Adelaide Hills - North (an SR of 70*, 31 deaths), Mount Barker Balance (73*, 39) and Southern Mallee (an SR of 79, 14).

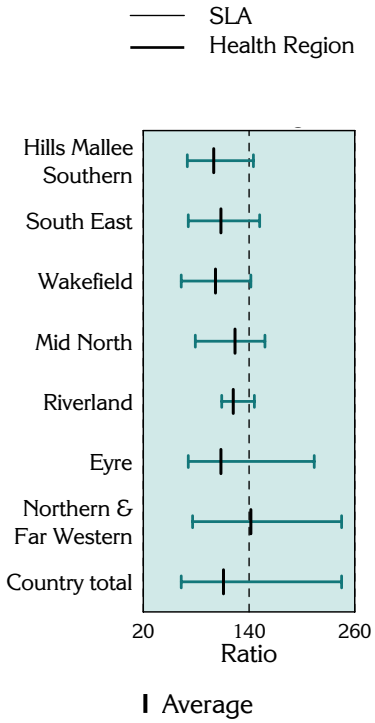
ASGC Remoteness Classification

The SR for Very Remote areas was very highly elevated (157**, 141 deaths) compared to the other remoteness classes. The Outer Regional areas and Remote areas had elevated ratios, of 120** (1,705 deaths) and 108 (364 deaths), respectively. Major Cities and Inner Regional areas both recorded four per cent fewer avoidable deaths than expected.

* **indicates statistical significance: see page 24**

Map 6.49
Avoidable mortality, South Australia, 1999 to 2002
Deaths at ages 0 to 74 years from potentially avoidable causes





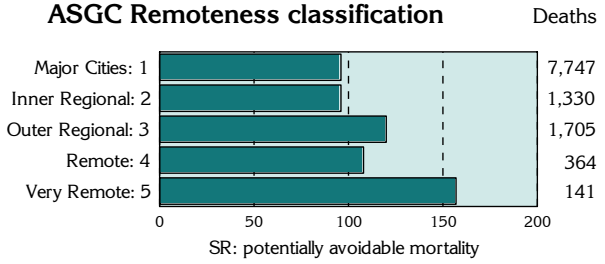
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

*Index shows the number of avoidable deaths in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100, or there were fewer than five deaths



Source: See data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

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Burden of disease

Introduction

The methods to estimate the burden of disease on the population combine information on deaths and non-fatal (disease and injury) outcomes, to provide two broad summary measures of population health, namely health expectancies and health gaps (DH 2004).

Health expectancies are expressed as Health-Adjusted Life Expectancy (HALE). This is calculated as the number of years expected to be lived in what might be termed the equivalent of 'full health' (Mathers et al. 2000).

Disability-Adjusted Life Years (DALYs) are the most frequently used measure for calculating health gaps. DALYs reflect life years lost from a range of diseases and injuries, using a number of assumptions about the severity and duration of mental or physical disability. DALYs comprise two components: mortality is the amount of years of life lost (YLL) and morbidity is the amount of years lost to disability (YLD). Thus, one DALY represents one full year of healthy life lost from the disease and disability free ideal (DH 2004).

The South Australian Burden of Disease Study applied these techniques to describe the average amount of ill health and premature death occurring in the South Australian population during the period 1999 to 2001. A selection of these data has been included in this section.

Data limitations

The impact on local area rates of the location of special-purpose nursing homes and other types of supported accommodation[1], as discussed earlier in relation to death rates (page 281), is of particular relevance for the burden of disease estimates, which are not limited by age.

This is no more evident than in the City of Unley. In Unley, the unexpectedly low estimates of Health-Adjusted Life Expectancy and relatively high rate of Years of Life Lost (see below) are likely to reflect the location of such facilities, in particular the Julia Farr Centre, which provides accommodation for people with a disability, including people with acquired brain injury, or a degenerative neurological or physical disorder: this increases the mortality rate.

Areas mapped

The areas mapped for the estimates in this section, referred to as Burden of Disease (BoD) areas, are groupings of SLAs – some grouped to LGAs – as the number of cases at the SLA level is often too small to be reliable.

Summary of results

Premature death was estimated to be responsible for 68.1 YLL per 1,000 population over the period 1999 to 2001; the equivalent figures for males and females were 77.2 and 59.1, respectively. Years of life lost to disability (non-fatal diseases and injuries) were estimated to be responsible for 64.0 years per 1,000 population. Table 6.57 shows the leading causes of the mortality and morbidity burden in South Australia.

Table 6.57: Burden of disease from mortality and disability, 1999 to 2001

Category	YLL		YLD	
	Rate[1]	%	Rate[1]	%
Malignant neoplasms	21.1	30.9	4.7	7.3
Mental disorders	1.3	1.9	16.8	26.3
Nervous system disorders	2.5	3.7	12.0	18.7
Cardiovascular disease	20.8	30.5	6.2	9.7
Chronic respiratory disease	3.5	5.2	5.5	8.7
Musculoskeletal diseases	0.4	0.6	4.7	7.4
Unintentional injuries	4.2	6.2	1.7	2.7
Other	14.3	21.0	12.4	19.2
Total	**68.1**	**100.0**	**64.0**	**100.0**

[1]Rate is the number of Years of Life Lost (YLL) or Years of Life Lost to Disability (YLD) per 1,000 population; rates are directly age standardised to the Australian population in 2000

Source: DH 2004

Table 6.58 shows life expectancy by age and sex, for selected ages. It also shows the number of years expected to be lived in 'full health' (HALE) and the proportion of years of healthy life lost to disability at each of the ages. The proportion of years of life lost to disability by males was greater than for females, from the age of 30 to 45 years onwards.

[1] For example, accommodation used by people with psychiatric conditions (hostels, boarding houses, shelters); or community houses for those with an intellectual disability.

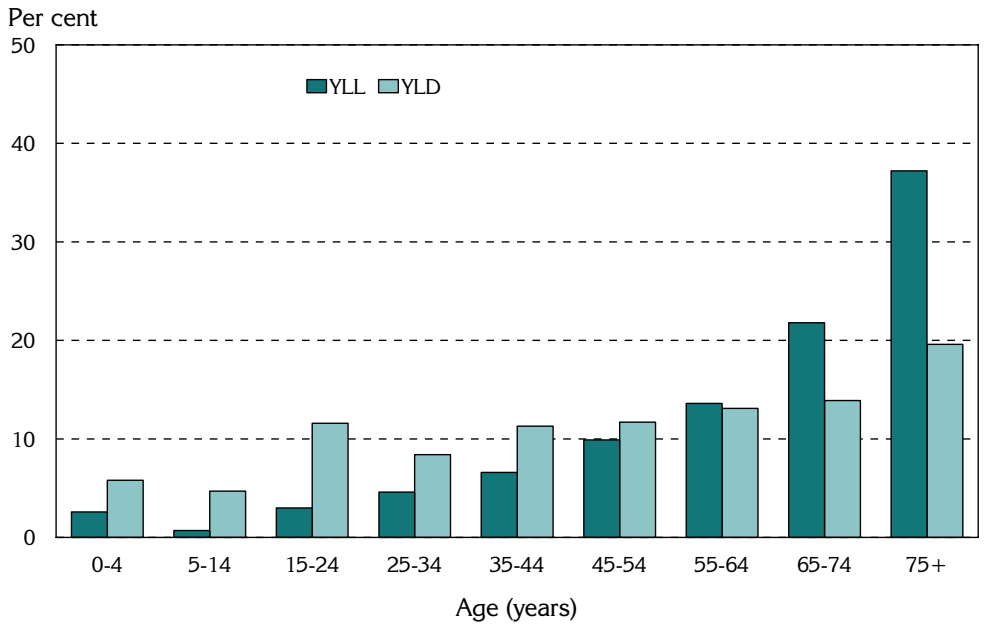
Table 6.58: Total life expectancy, health adjusted life expectancy and expected years lost to disability, by age and sex, South Australia, 1999 to 2001

Age (years)	Males			Females		
	LE (years)	HALE (years)	ELD/LE (%)	LE (years)	HALE (years)	ELD/LE (%)
0	77.3	69.8	9.8	83.0	74.9	9.8
15	62.9	55.7	11.4	68.4	60.6	11.4
30	48.7	42.1	13.5	53.7	46.7	13.0
45	34.7	28.8	17.2	39.3	33.0	15.9
60	21.4	16.3	23.6	25.5	20.2	20.9
75	10.6	7.2	31.6	13.4	9.7	27.3

Note: LE - Life expectancy; HALE – Health-adjusted life expectancy; ELD - Expected years lost to disability
Source: DH 2004

The estimated proportion of years of life lost to mortality and to morbidity varies by age, with the latter estimated to have a greater impact at younger and middle ages, and mortality to have the greater impact at older ages (Figure 6.4).

Figure 6.4: Estimated years of life lost to mortality (YLL) and disability (YLD), by age and sex, South Australia, 1999 to 2001



Source: DH 2004

Conditions responsible for premature mortality

The Department of Health's Burden of Disease study provides details of the conditions contributing most to premature mortality in South Australian males and females aged 0 to 4, 5 to 14 and 15 to 24 years:

"Death in very young ages is relatively rare in South Australia and often due to quite uncommon causes compared to the population overall. Over one-third of premature mortality in 0 to 4 year old children results from the conditions of Low birth weight, Other neonatal causes (for example newborns affected by maternal hypertension) and Other congenital anomalies (such as multiple congenital malformations).

Among the 5 to 14 year group, road traffic accidents emerged as the greatest cause of premature life loss. Road traffic accidents were also the leading cause of death in the 15 to 24 year group, accounting for over one-third of loss. Premature death associated with risk taking behaviour and potentially avoidable causes becomes increasingly apparent in this age group. Deaths by suicide, violence and illicit drug use accounted for over three quarters of premature death among males and almost 60% in females" (DH 2004).

Conditions responsible for loss of healthy years of life due to disability caused by illness or injury

The study also provides details of the conditions contributing most to the loss of healthy years of life due to disability caused by illness or injury in young South Australian males and females aged 0 to 4, 5 to 14 and 15 to 24 years.

"Asthma is the leading cause of morbidity for both the 0 to 4 and 5 to 14 year age groupings and for both sexes, responsible for over 25% of life lived with illness. Mental disorders become prominent as leading causes of morbidity in the youngest age group, initially in the form of Attention-deficit hyperactivity disorder and disorders within the Autistic spectrum, with markedly higher rates among males.

Depression emerges as a leading condition for both sexes in the 5 to 14 year age group. Rates increase further in the 15 to 24 age group with depression being the leading cause of life lived with disability among young women, and at a rate almost 3.5 times that of males. Mental health conditions, including substance use, dominate the Top 10 causes of loss and are responsible for over 70% of the loss borne by the 15 to 24 year age group" (DH 2004).

Variables mapped

The variables mapped in this section include Years of Life Lost (YLL) among people aged 0 to 74 years, Years of Life Lost to Disability (YLD) among people aged 0 to 74 years and Health-Adjusted Life Expectancy (HALE) at birth for males and females (Table 6.59).

Table 6.59: Variables mapped by region, South Australia, 1999 to 2001

Region	YLL (0 to 74 yrs)	YLD (0 to 74 yrs)	DALY[2] (0 to 74 yrs)	HALE – males (at birth)	HALE – females (at birth)
Central Northern	35,028	40,636	75,664	69.7	74.7
Southern	13,300	16,444	29,744	70.4	75.6
Metropolitan regions	**48,328**	**57,080**	**105,408**	**69.9**	**75.0**
Hills Mallee Southern	5,094	5,645	10,739	70.8	76.1
Wakefield[1]	4,822	5,135	9,957	69.9	74.7
South East	2,955	3,234	6,189	69.5	75.0
Northern & Far Western	3,110	3,478	6,588	66.3	71.1
Eyre	1,797	1,942	3,739	68.8	74.4
Mid North	1,787	1,909	3,696	68.6	73.6
Riverland	2,007	1,777	3,784	68.2	74.0
Country SA	**21,570**	**23,121**	**44,692**	**69.2**	**74.5**
South Australia	**69,898**	**80,201**	**150,100**	**69.8**	**74.9**

[1] **Gawler is included in Wakefield region**

[2] **DALYs have not been mapped**

Health-Adjusted Life Expectancy, males, 1999 to 2001

Health-Adjusted Life Expectancy (HALE) is an indicator of the number of years a newborn can expect to live in good health, if current population trends of disease and disability persist. HALE is useful in making comparisons over time, as it takes into account changes in the extent of disability within the population (Manuel et al. 2000).

HALE was lower for males than for females in both metropolitan regions and country South Australia, although there were only minimal differences, by sex, within the metropolitan regions and country South Australia (Table 6.60).

Table 6.60: Health-Adjusted Life Expectancy, 1999 to 2001

Years

Area	Males	Females
Metropolitan regions (excl. Gawler)	69.9	75.0
Country	69.2	74.5
South Australia	69.8	74.9

Readers should note the caution on page 301 regarding limitations of these area-level estimates.

Metropolitan regions

The HALE of males who were usual residents of the metropolitan regions in 1999 to 2001 was 69.9 years, 5.1 years lower than for females. There was little variation between regions, with a HALE of 70.4 years calculated for Southern and 69.7 years for Central Northern.

Health-Adjusted Life Expectancy for males was strongly correlated with female labour force participation, using the Internet at home, participating in fulltime education at 16 years of age and high income families. These results, together with a very strong correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the Burden of Disease area level between high HALE of males and socioeconomic advantage (Table A12).

Central Northern Adelaide

The HALE for males in Central Northern was 69.7 years, with a variation of 7.4 years between Burden of Disease areas within the region.

The Burden of Disease areas with the highest HALEs in the region were in Tea Tree Gully - Central/ Hills/ North (73.1 years), Tea Tree Gully - South (71.7 years), Campbelltown (71.3 years) and Burnside (71.0 years).

Males living in Playford - West Central/ Elizabeth had the lowest HALEs in the region (and in South Australia) being four years lower than the regional average (65.7 years). There were also low HALEs in Port Adelaide Enfield - Coast/ Port (66.9 years) and Port Adelaide Enfield - East/ Inner (67.1 years).

Southern Adelaide

Overall, in 1999 to 2001, there was a HALE of 70.4 years for males in the Southern region and less variation in HALEs within the region, with a difference of 4.1 years between the highest and lowest HALE (see graph opposite).

The highest HALE in the south was calculated for Mitcham (72.6 years), followed by Onkaparinga - Hackham/ Morphett/ Hills (71.1 years).

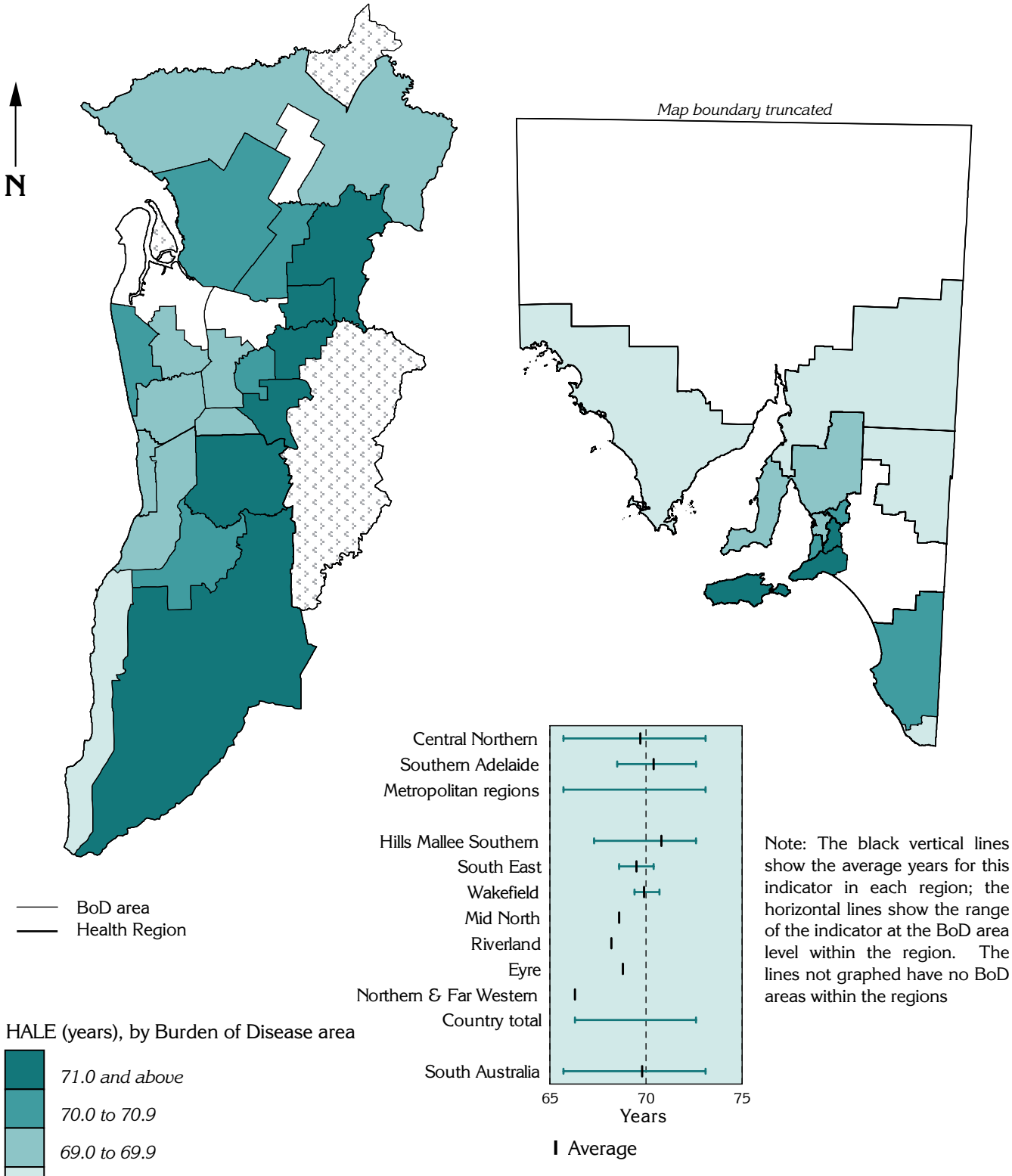
Males living in Onkaparinga - North Coast/ South Coast had the lowest HALE of 68.5 years, with 69.1 years for males in Marion and 69.7 years in Holdfast Bay.

Country South Australia

The HALE for males living in country South Australia was 0.7 years lower than for their counterparts in the metropolitan regions. Across the State, there were large regions with particularly low HALEs (Map 6.50). However, the Burden of Disease areas with the lowest scores are less densely populated than other areas, and contain relatively large Indigenous populations.

The lowest HALE in country South Australia was calculated for **Northern and Far Western** region (66.3 years), being 2.9 years lower than that for country South Australia overall (Table 6.61). This was followed by **Riverland** (68.2 years), **Mid North** (68.6 years), **Eyre** (68.8 years), **South East** (69.5 years), **Wakefield** (69.9 years) and **Hills Mallee Southern** (70.8 years).

Map 6.50
Health-Adjusted Life Expectancy, males, 1999 to 2001



Note: The black vertical lines show the average years for this indicator in each region; the horizontal lines show the range of the indicator at the BoD area level within the region. The lines not graphed have no BoD areas within the regions

#*Data were not mapped for Torrens Island, or because the population was of insufficient size: Gawler has been mapped in the State map*

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Health-Adjusted Life Expectancy, females, 1999 to 2001

Health-Adjusted Life Expectancy (HALE) is an indicator of the number of years a newborn can expect to live in good health, if current population trends of disease and disability persist. HALE is useful in making comparisons over time, as it takes into account changes in the extent of disability within the population (Manuel et al. 2000).

Readers should note the caution on page 301 regarding limitations of these area-level estimates.

Metropolitan regions

The HALE for metropolitan females was 75.0 years, 5.1 years higher than that for males in the metropolitan regions (Table 6.61).

Health-Adjusted Life Expectancy for females was strongly correlated with female labour force participation, with strong inverse correlations with a number of the indicators of disadvantage. These results, together with a strong correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the Burden of Disease area level between high HALE of females and socioeconomic advantage (Table A12).

Central Northern Adelaide

There was considerable variation between Burden of Disease areas in this region for females (as there was for males), with 6.5 years difference between the highest and lowest HALE calculations. Overall, HALE for Central Northern was 74.7 years. This was slightly lower than for females in Southern region (75.6 years), where there was also less variation (see graph opposite).

The highest HALEs for females in South Australia was calculated for Tea Tree Gully - Central/ Hills/ North (78.2 years), Burnside (77.2 years), West Torrens (76.8 years), Playford - East Central/ Hills/ West (76.1 years) and Campbelltown (76.1 years).

As was the case for males, the lowest HALEs in this region were for females living in Playford - West Central/ Elizabeth (71.7 years). Other low HALEs were found in Unley (72.2 years), Port Adelaide Enfield - East/ Inner (72.7 years) and Port Adelaide Enfield - Coast/ Port (73.2 years).

Southern Adelaide

The highest HALE calculated for the Southern region was 76.2 years, in both Onkaparinga - Hackham/ Morphett/ Hills and in Marion. There was a variation of two and a half years in this region, with Onkaparinga - North Coast/ South Coast recording the lowest HALE of 73.7 years.

Country South Australia

HALE scores were consistently higher for females than males throughout the Burden of Disease areas (Table 6.61). The highest HALE for females in country regions was calculated for **Hills Mallee Southern** (76.1 years). Within this region, Hills had a HALE of 76.6 years, followed by Southern (76.1) and Mallee (75.2).

South East had the second highest HALE of 75.0 years. Upper South East had a HALE of 75.1 years and Mount Gambier and Grant had a HALE of 74.9 years.

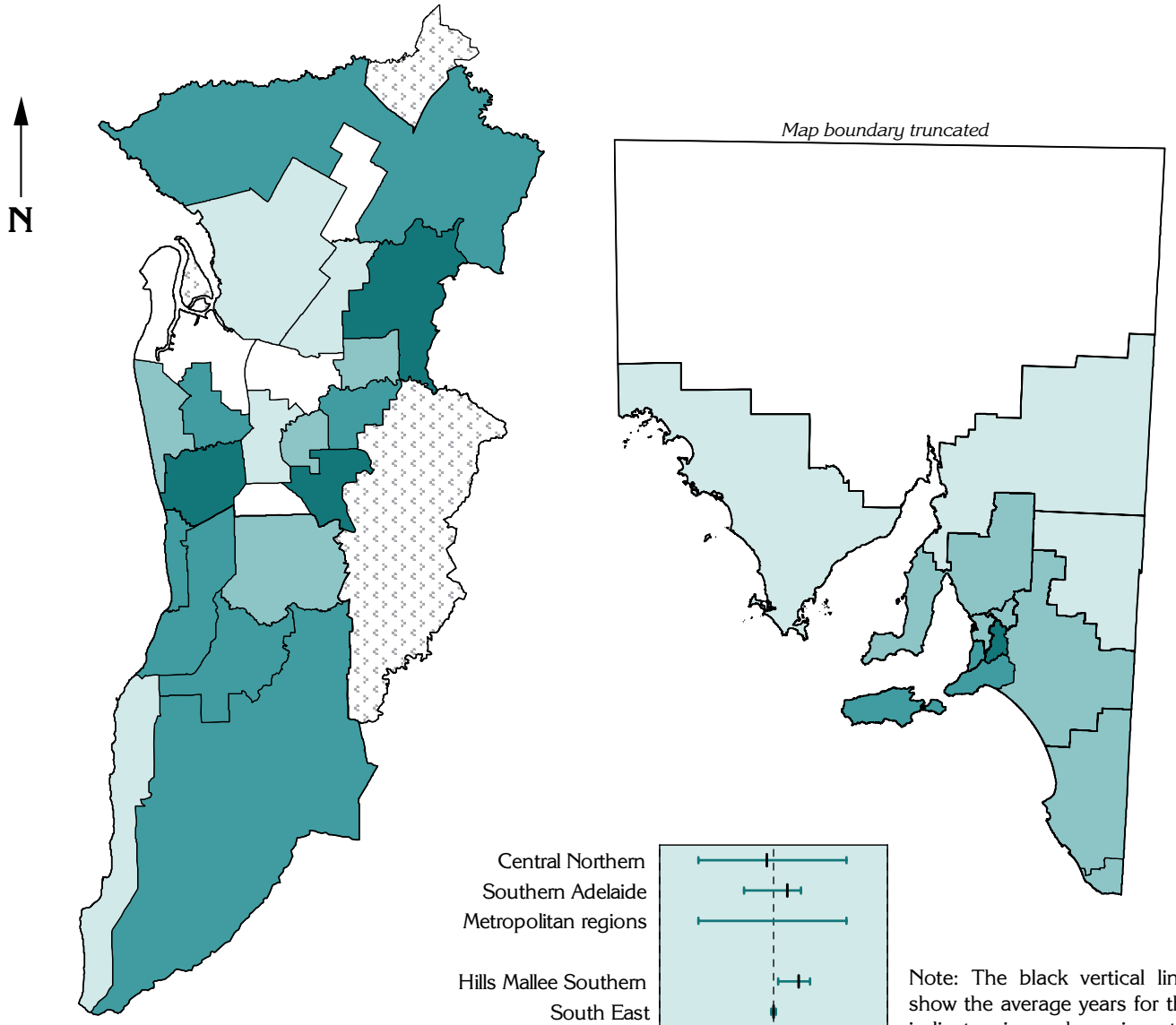
There was a variation of five years in the country, with the lowest HALE for females being 71.1 years in **Northern and Far Western** (compared to **Hills Mallee Southern**, 76.1 years) (see graph opposite).

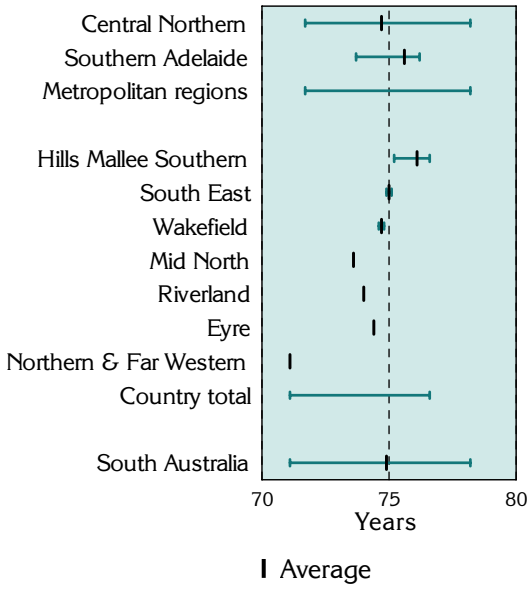
Table 6.61: Regional totals, HALE, 1999 to 2001

Region	HALE	
	Males	Females
Hills Mallee Southern	70.8	76.1
Hills	72.6	76.6
Southern	72.5	76.1
Mallee	67.3	75.2
Wakefield[1]	69.9	74.7
Gawler & Barossa	70.7	74.8
Balance of Wakefield	69.4	74.6
South East	69.5	75.0
Mount Gambier & Grant	68.6	74.9
Upper South East	70.4	75.1
Northern & Far Western	66.3	71.1
Eyre	68.8	74.4
Mid North	68.6	73.6
Riverland	68.2	74.0
Country SA	**69.2**	**74.5**
Central Northern	69.7	74.7
Southern	70.4	75.6
Metropolitan regions	**69.9**	**75.0**
South Australia	**69.8**	**74.9**

[1] **Gawler is included in Wakefield region**

Map 6.51
Health-Adjusted Life Expectancy, females, 1999 to 2001





Note: The black vertical lines show the average years for this indicator in each region; the horizontal lines show the range of the indicator at the BoD area level within the region. The lines not graphed have no BoD areas within the region.

#Data were not mapped for Torrens Island, or because the population was of insufficient size: Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Years of Life Lost, 0 to 74 years, 1999 to 2001

One measure of the impact of premature death is the number of potential years of life lost as a result of death before a certain age, in this case, 75 years. This measure is calculated as the sum of all the years of life that could potentially have been lived had people not died before the age of 75 years. The total number of years of life lost (YLL) is calculated by assuming that people who died at 17 years of age would have otherwise lived to the age of 75 years (i.e. 75 minus 17 years), and that 58 years of life were lost.

In this analysis, deaths included were of people aged from 0 to 74 years. The rates per 100,000 population, age standardised to the Australian population, are expressed as an index with a base of 100.

Table 6.62: Years of Life Lost, 0 to 74 years, 1999 to 2001

Age-standardised rate per 100,000

Area	Years	Rate
Metropolitan regions (excl. Gawler)	48,328	4,832
Country	21,570	5,430
South Australia	69,898	4,982

Metropolitan regions

There were 48,328 years of life lost for residents of the metropolitan regions in 1999 to 2001, three per cent fewer than expected from the State rates (Table 6.62). The Central Northern region had the expected number of 35,028 YLL (a standardised ratio (SR) of 100). Southern had eleven per cent fewer years of life lost than expected (an SR of 89**, 13,300 YLL) (Table 6.63).

The Burden of Disease areas with the most highly elevated ratios of years of life lost were located in the typically disadvantaged areas in the north-west and outer north (Map 6.52).

This variable was very strongly correlated with unemployment; Housing Trust rented dwellings; the Indigenous population; jobless, low income and single parent families; and dwellings without a motor vehicle. It was also strongly correlated with unskilled and semi-skilled workers. These results, together with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the Burden of Disease area level between YLL and socioeconomic disadvantage (Table A12).

Central Northern Adelaide

Playford - West Central/ Elizabeth had the most highly elevated ratio in the metropolitan regions with nearly 60% more years of life lost than expected (an SR of 157**, 2,818 YLL). There were also highly elevated ratios in Port Adelaide Enfield - Coast/ Port (128**, 3,280), Port Adelaide Enfield - East/ Inner (124**, 2,912), Charles Sturt - Inner East/ North-East (110**, 2,486) and Salisbury - Central/ Inner North/ Balance (109**, 2,408).

There were also large numbers of years of life lost in Salisbury - North-East/ South-East (2,592 YLL, an SR of 101) and West Torrens (2,378 YLL, 91). Tea Tree Gully - Central/ Hills/ North had the lowest ratio of all the Burden of Disease areas in South Australia, with 32% fewer years of life lost than expected (an SR of 68**, 1,857 YLL). There were also lower than expected ratios in Burnside (an SR of 82**, 1,695 YLL), Tea Tree Gully - South (85**, 1,330), Charles Sturt - Coastal/ Inner West (86**, 2,508), Campbelltown (88**, 2,066) and Playford - East Central/ Hills/ West (89**, 1,048).

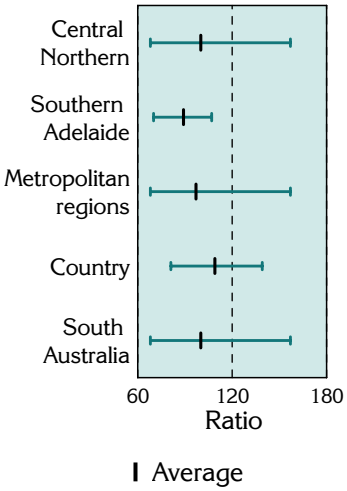
Southern Adelaide

The standardised ratios for years of life lost in Southern were lower than in Central Northern, with the highest ratio of 107** calculated for Onkaparinga - North Coast/ South Coast (2,018 YLL). There were 3,834 years of life lost in Marion (an SR of 99).

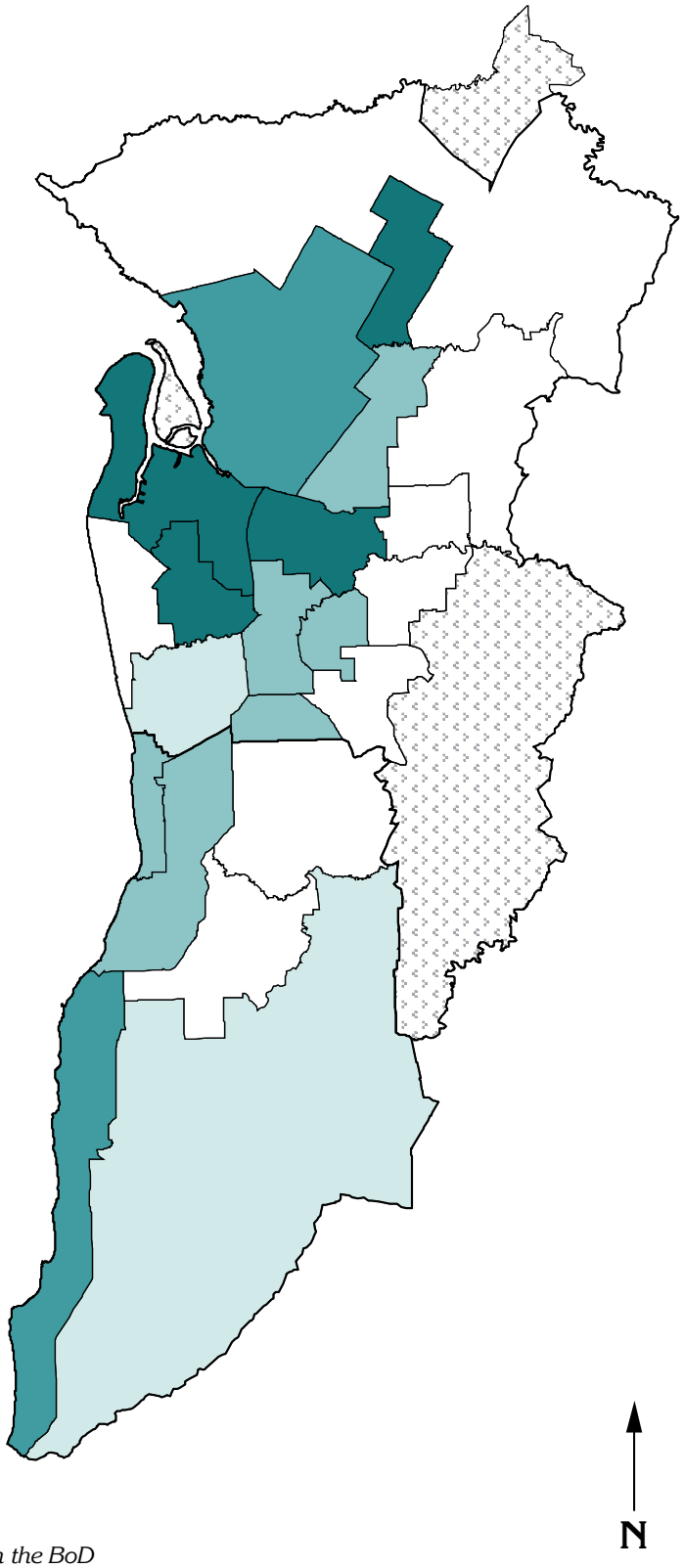
There were also areas with low ratios, with 30% fewer than expected YLL in Onkaparinga – Reservoir/ Woodcroft (70**, 1,628) and Mitcham (71**, 2,090).

* **indicates statistical significance: see page 24**

Map 6.52
Years of Life Lost, 0 to 74 years, metropolitan regions, 1999 to 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the BoD area level within the region.



BoD area
Health Region

Standardised Ratio (as an index)*, by BoD area

- *110 and above*
- *105 to 109*
- *95 to 104*
- *90 to 94*
- *below 90*
- *data not mapped#*

*Index shows the Years of Life Lost from deaths of people in the BoD area, compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island, or because the population was of insufficient size: Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

There were 21,570 years of life lost in country South Australia, nine per cent more than expected from the State rates (a standardised ratio (SR) of 109**).

Table 6.63: Regional totals, Years of Life Lost, 0 to 74 years, 1999 to 2001

Region	Years	SR
Hills Mallee Southern	5,094	95**
Hills	1,316	81**
Southern	1,791	87**
Mallee	1,986	117**
Wakefield[1]	4,822	102
Gawler & Barossa	1,605	92**
Balance of Wakefield	3,217	107**
South East	2,955	105*
Mount Gambier & Grant	1,529	111**
Upper South East	1,426	98
Northern & Far Western	3,110	139**
Eyre	1,797	117**
Mid North	1,787	113**
Riverland	2,007	128**
Country SA	**21,570**	**109****
Central Northern	35,028	100
Southern	13,300	89**
Metropolitan regions	**48,328**	**97****
South Australia	**69,898**	**100**

[1]**Gawler is included in Wakefield region**

This variable was very strongly correlated with dwellings rented from the SA Housing Trust, unemployment, dwellings without a motor vehicle, and the Indigenous population. There were strong correlations with jobless families, poor proficiency in English and single parent families. These results, together with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the Burden of Disease (BoD) area level between YLL and socioeconomic disadvantage (Table A13).

The Regions

Northern and Far Western had the most highly elevated ratio, with 39% more years of life lost than expected (an SR of 139**, 3,110 YLL).

Riverland also had a highly elevated ratio with 28% more years of life lost than expected from the State rates (an SR of 128**, 2,007 YLL).

An elevated ratio was also evident for **Eyre** with 17% more YLL than expected from the State rates (an SR of 117**), representing 1,797 years of life lost.

Similarly, there were 1,787 years of life lost in **Mid North**, representing 13% more YLL than expected (an SR of 113**).

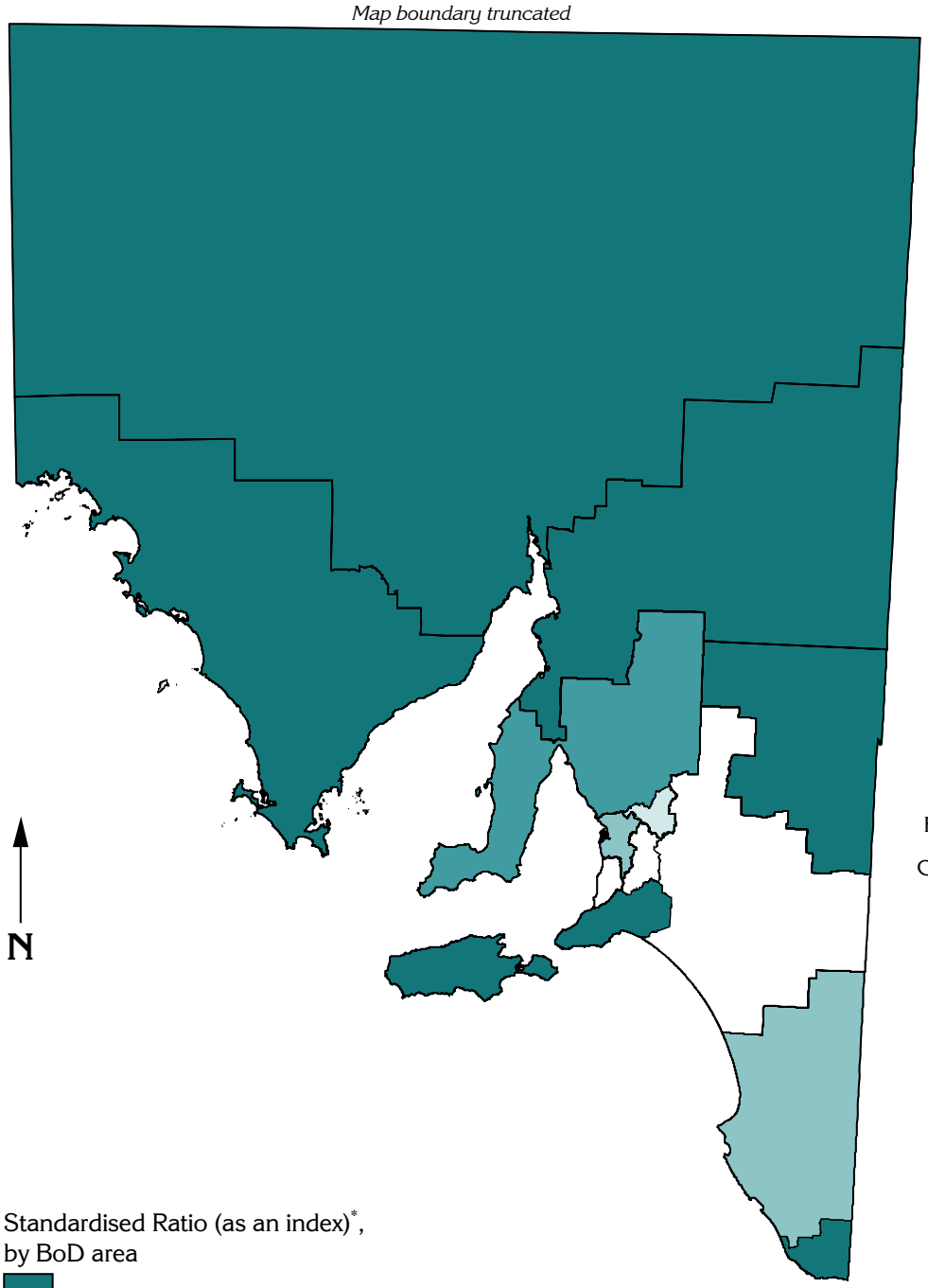
South East also had an elevated ratio (an SR of 105**) with five per cent more years of life lost than expected, comprising 2,955 years. Within this region, Mount Gambier and Grant had a higher SR of 111** (1,529 YLL), and the ratio for Upper South East was lower than expected (an SR of 98, 1,426 YLL).

Wakefield had a slightly elevated ratio of 102, representing two per cent more YLL than expected (4,822 YLL). Within this region, Balance of Wakefield had seven per cent more YLL than expected (an SR of 107**, 3,217 years); and Gawler and Barossa had eight per cent fewer YLL than expected (with an SR of 92**, 1,605 YLL).

There were 5,094 years of life lost in **Hills Mallee Southern**. However, this represented five per cent fewer years of life lost than expected from the State rates (an SR of 95**). Within this region, there was an elevated ratio in the Burden of Disease areas of Mallee (an SR of 117**, 1,986 YLL). Both Hills (with an SR of 81**, 1,316 YLL) and Southern (87**, 1,791) had low ratios, of 19% and 13% lower than expected, respectively.

* **indicates statistical significance: see page 24**

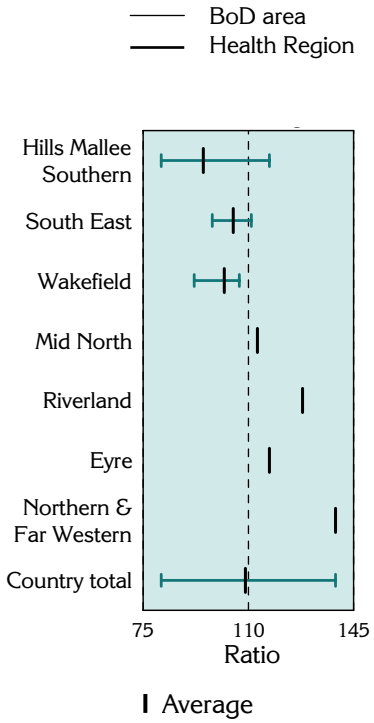
Map 6.53
Years of Life Lost, 0 to 74 years, South Australia, 1999 to 2001



Standardised Ratio (as an index)*, by BoD area

- *110 and above*
- *105 to 109*
- *95 to 104*
- *90 to 94*
- *below 90*

*Index shows the Years of Life Lost from deaths of people in the BoD area compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the BoD area level within the region. The lines not graphed have no BoD areas within the region.

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Years of Life Lost to Disability, 0 to 74 years, 1999 to 2001

The determination of years of life lost due to a disability are based on calculations of time lived in less than full health, and the severity of the condition. The cause of the reduced level of health is used as a weighting so that, for example, poor health due to cancer contributes more to a year lost due to disability than does poor health due to a cold. The greatest proportion of years of life lost to disability (YLD) across all age groups in South Australia is due to mental disorders (26%). This is followed by nervous system and sense organ disorders (20%) (DH 2004). The rates per 100,000 population, age standardised to the South Australian population, are expressed as an index with a base of 100.

The rate of YLD was higher in country South Australia, at 5,887 per 100,000 compared to a rate of 5,657 in the metropolitan regions. The total number of years of life lost to disability in South Australia in 1999 to 2001 in 0 to 74 year old people was 80,201 (Table 6.64).

Table 6.64: Years of Life Lost to Disability, 0 to 74 years, 1999 to 2001

Age-standardised rate per 100,000

Area	Years	Rate
Metropolitan regions (excl. Gawler)	57,080	5,657
Country	23,121	5,887
South Australia	80,201	5,716

Metropolitan regions

There were 57,080 years of life lost to disability in the metropolitan regions, one per cent fewer than expected from the State rates (a standardised ratio (SR) of 99*). The ratio in Southern was four per cent lower than expected, with 16,444 years of life lost, while Central Northern had 40,636 years of life lost to disability, a ratio of 100 (Table 6.65).

YLD were very strongly correlated with the Indigenous population, low income families, dwellings rented from the Housing Trust, jobless families, single parent families and unemployment. YLD was also strongly correlated with unskilled and semi-skilled workers. These results, together with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the Burden of Disease area level between YLD and socioeconomic disadvantage (Table A12).

Central Northern Adelaide

Port Adelaide Enfield - East/ Inner had the most highly elevated ratio, with 25% more years of life lost to disability than expected from the State rates (an SR of 125**, 3,196 YLD). There were also highly elevated rates in Playford - West Central/ Elizabeth (116**, 2,406), and Port Adelaide Enfield - Coast/ Port (115**, 3,323). Salisbury - Central/ Inner North/ Balance (105**, 3,088), Salisbury - North-East/ South-East (105**, 3,190), West Torrens (104*, 2,941), Charles Sturt - Coastal/ Inner West (103, 3,174) and Charles Sturt - Inner East/ North-East (102, 2,551) all had slightly elevated ratios.

There were a large number of years of life lost to disability in Tea Tree Gully - Central, Hills, North (3,103 YLD, an SR of 90**).

The lowest ratios, with fewer years lost to disability than expected from the State rates, were calculated for Tea Tree Gully - South (an SR of 82**, 1,478 YLD), Norwood Payneham St Peters (86**, 1,539) and Burnside (87**, 1,962).

Southern Adelaide

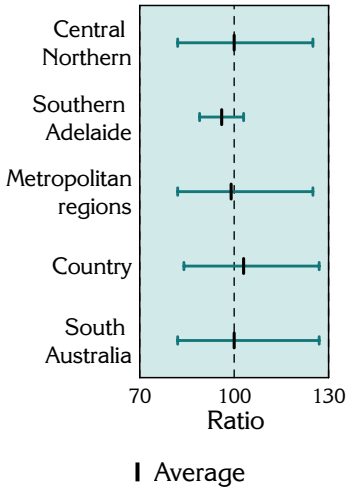
Onkaparinga - North Coast/ South Coast had a slightly elevated ratio of 103 (2,231 YLD).

Marion had the largest number of years of life lost to a disability with 4,165; however, this was two per cent fewer than expected and not statistically significant (an SR of 98).

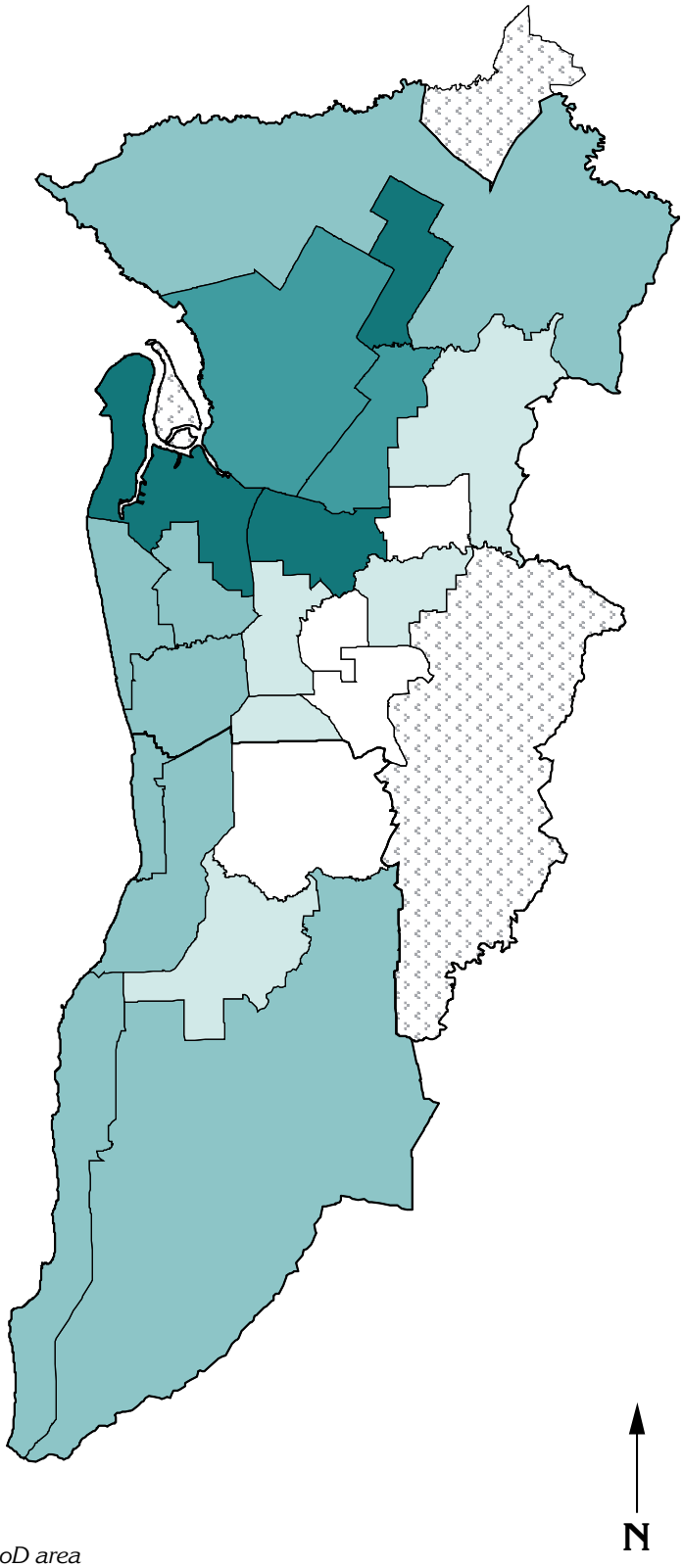
There were lower than expected ratios in Mitcham (an SR of 89**, 2,955 YLD) and Onkaparinga - Reservoir/ Woodcroft (91**, 2,742).

* **indicates statistical significance: see page 24**

Map 6.54
Years of Life Lost to Disability, 0 to 74 years, metropolitan regions, 1999 to 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the BoD area level within the region.



BoD area
Health Region

Standardised Ratio (as an index)*, by BoD area

- *110 and above*
- *105 to 109*
- *95 to 104*
- *90 to 94*
- *below 90*
- *data not mapped#*

*Index shows the Years Lost to Disability of people in the BoD area compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island, or because the population was of insufficient size: Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Years of Life Lost to Disability, 0 to 74 years, 1999 to 2001

Country South Australia

There were 23,121 years of life lost to disability in country regions, three per cent more than expected from the State rates (a standardised ratio (SR) of 103**). The regional totals ranged from an SR of 127** in **Northern and Far Western** (3,478 YLD) to 95** in **Hills Mallee Southern** (5,645 YLD).

Table 6.65: Years of Life Lost to Disability, 0 to 74 years, 1999 to 2001

Region	Years	SR
Hills Mallee Southern	5,645	95**
Hills	1,680	84**
Southern	1,876	91**
Mallee	2,090	111**
Wakefield[1]	5,135	98
Gawler & Barossa	1,928	98
Balance of Wakefield	3,207	99
South East	3,234	97
Mount Gambier & Grant	1,609	98
Upper South East	1,625	97
Northern & Far Western	3,478	127**
Eyre	1,942	109**
Mid North	1,909	111**
Riverland	1,777	99
Country SA	**23,121**	**103****
Central Northern	40,636	100
Southern	16,444	96**
Metropolitan regions	**57,080**	**99***
South Australia	**80,201**	**100**

[1]**Gawler is included in Wakefield region**

YLD were very strongly correlated with unemployment, dwellings without a motor vehicle, the Indigenous population, dwellings rented from the Housing Trust and jobless families. It was also strongly correlated with the variable for single parent families. These results, together with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the Burden of Disease (BoD) area level between YLD and socioeconomic disadvantage (Table A13).

The Regions

Northern and Far Western had the most highly elevated ratio with 27% more years lost to disability than expected (an SR of 127**, 3,478 YLD).

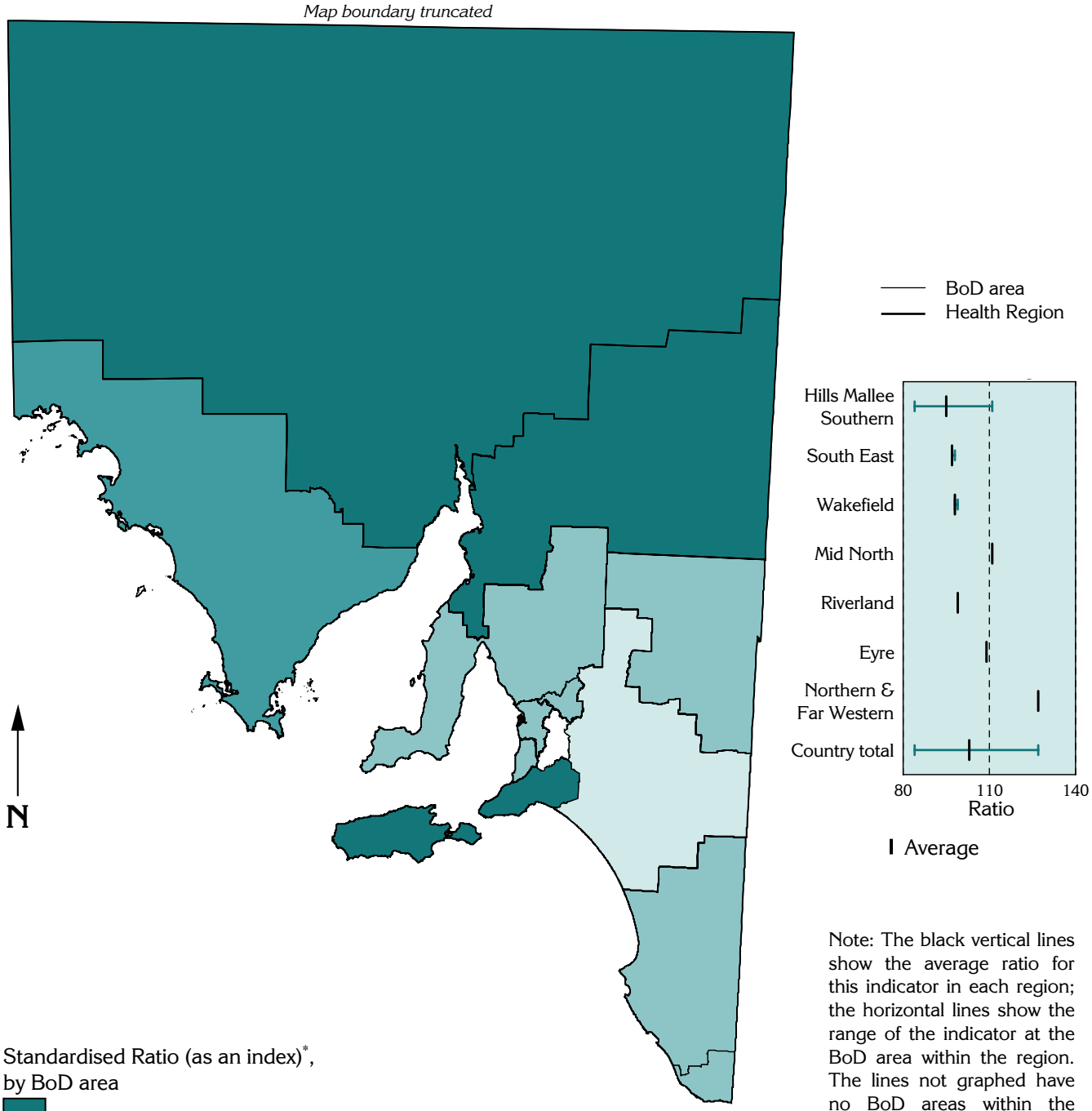
Mid North had an elevated ratio of 111** (1,909 YLD), indicating eleven per cent more years of life lost to disability than expected from the State rates. The next highest regional ratio was in **Eyre** (109**, 1,942).

Hills Mallee Southern had the lowest regional ratio of 95**, although a large number of years (5,645) lost to disability. Within this region, there was an elevated ratio in Mallee (an SR of 111**, 2,090 YLD), and lower than expected ratios in Hills (84**, 1,680) and Southern (91**, 1,876).

The remaining regions of **Wakefield, Riverland** and **South East** had lower than expected ratios, of 98 (5,135 YLD), 99 (1,777 YLD) and 97 (3,234 YLD) respectively, all of which were not statistically significant.

* **indicates statistical significance: see page 24**

Map 6.55
Years of Life Lost to Disability, 0 to 74 years, South Australia, 1999 to 2001



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the BoD area within the region. The lines not graphed have no BoD areas within the region.

*Index shows the Years of Life Lost from Disability of people in the BoD area compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

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7 Use of services

Introduction

Health services take many forms and are offered in a variety of settings. They are provided in institutions such as hospitals and nursing homes, and within the community (for example, in community health centres, home nursing and support services, general practice and specialist medical services, mental health services, migrant health centres and Aboriginal-controlled health services). Such services can be focused on health promotion, disease and injury prevention, early intervention, treatment, rehabilitation and palliative care. Other services, such as those offered by the Department for Families and Communities (DFC), have a specific focus on those who are socioeconomically disadvantaged.

The patterns of service use in South Australia are relevant and important. Firstly, they are useful in themselves – as measures of differential use of services and the implications of this for the individual (potential loss of function, time away from family, time off from work, cost) and the health and welfare sectors (resource implications). Secondly, patterns of health service use are indicators of illness (morbidity) in the community, at levels requiring admission to a hospital, attendance at an outpatient clinic or an emergency department; or use of primary health care services from a general medical practitioner or a community-based health service. Patterns of use of services provided by the Department for Families and Communities indicate levels of need by those who are disadvantaged in the community.

Data are presented for the first time on a number of primary health care services, including breast screening and cervical screening participation rates (and diagnostic outcomes), as well as community mental health services. Services provided to those attending outpatient departments (last available some 20 years ago) and Accident and Emergency departments of public acute hospitals (not previously available) are also included, as are attendances for consultations with specialist medical practitioners, either in their private capacity or in an outpatient department.

The geographic distribution of the population by private health insurance cover in 2001 is also provided, illustrating the divide between those whose access is limited to public health services, and those who can also afford to use private health services.

Data mapped

In addition to the new datasets noted above, this chapter includes details of admissions to public and private hospitals, services provided by general medical practitioners (GPs), people on a booking list for elective surgery, those who are clients of the Department for Families and Communities, and attendances at a range of community health services and community-based services delivered in the home (by Domiciliary Care services, Royal District Nursing Service and Meals on Wheels). These are services for which data necessary for the analysis at the small area level can be obtained: such data includes the age, sex and Statistical Local Area (SLA) of the address of usual residence of the patient or client.

Details of the supply of GPs are also included; this indicator is important in describing regional variations in the supply of GPs.

A comparison of the geographic distribution of the population's service use with the data mapped in the other chapters indicates the extent of any association at the small area level between health service use and socioeconomic status or health status. The extent of the association is also indicated by the results of the correlation analysis in Chapter 8.

The chapter has been organised under the following headings.

Community-based services:

- Community health services
- Community mental health services
- Child and Adolescent Mental Health Services
- Department for Families and Communities
- Screening services
- Home and Community Care

Medical services

- General medical practitioners
- Accident & Emergency department attendances
- Outpatient department attendances
- Specialist medical practitioner services
- Private health insurance
- Hospital admissions
- Hospital booking lists

Measures mapped

Age standardised ratios have been calculated (by the indirect method) and mapped for admissions to hospital and other services provided by place of usual residence of the patient or client, to illustrate the extent of variation in service use between the populations of these areas. The ratios are presented as an index, with ratios elevated above

the State rates expressed as index numbers of 101, or higher; and those below the State rates expressed as index numbers of 99, or lower[1]. Thus, an index number of 110 for hospital admissions from an area indicates that there were ten per cent more admissions of residents from that area than expected (compared with the rates for South Australia) for a population with the age and sex distribution of the area. An index number of 87 indicates 13% fewer admissions, and so on.

A description of the technique of standardisation, its purposes and method of calculation, is in Appendix 1.3.

Variables mapped

The variables mapped represent only a selection of the full range of variables that could potentially be mapped from each data set. Many potentially useful variables have not been included due to the relatively small numbers of cases available for analysis at the small area level. The number of variables mapped was also constrained by the size of the atlas and the desire to focus on information not previously published. Data for a number of additional variables can be found on the PHIDU website: www.publichealth.gov.au.

Gaps and deficiencies in the data

Data collections

Over the years since the first edition of the atlas was produced in1990, the range of data has increased, and its quality has improved. However, significant gaps remain in data that can be mapped. For example, details of services provided by GPs or specialist medical practitioners are generally limited to the age and sex of patients. There is, for example, limited information at a small area level which includes other client characteristics, such as reason for attendance (e.g. patient is unwell and the nature of the illness, has an injury, or is seeking advice), type of services provided (e.g. patient referred to another health practitioner, pharmaceutical drugs prescribed), or outcome (e.g. counselling undertaken, course of treatment initiated). The lack of information on GP services represents a major gap in our ability to describe the work of these important primary health care providers, to understand the appropriateness of the services provided, and to assess the outcomes achieved.

Another important gap is the lack of data describing the geographic distribution of the dispensing of prescribed pharmaceutical items.

Other data issues

As discussed in Chapters 1 and 2, the lack of data items, such as income or education, in health statistics collections and the consequent inability to identify and analyse socioeconomic status directly is a major deficiency in the Australian data. Therefore, the socioeconomic status of the area of usual residence of the client or patient is used as a proxy for the socioeconomic status of the client or patient.

The limitations of this approach are discussed in Chapter 2, *Methods* under the heading *Usual residence*.

An over-riding deficiency in the hospital inpatient data is the lack of a unique identifier, which would allow for the analysis of data for individuals rather than for events (admissions). A number of initiatives are under way to address this deficiency. The results of an analysis of one of these approaches are described under *Individuals and events*, page 389.

[1] Variables where data are only available for metropolitan regions are standardised to the population in the metropolitan regions.

Community-based services

Introduction

Community-based services covered in this section include services provided by:

- community health centres and services on a one-to-one basis (excluding group sessions);
- community mental health services;
- Child and Adolescent Mental Health Services;
- Department for Families and Communities;
- centre-based and in-home services provided by the four metropolitan Domiciliary Care services;
- home nursing provided by the Royal District Nursing Service of SA Incorporated (RDNS) in Metropolitan Adelaide; and
- details of meals delivered to eligible people at home by the voluntary Meals on Wheels organisation in Metropolitan Adelaide.

Data mapped

Data for community health centres and services and community mental health services in Metropolitan Adelaide for 1999/2000 were largely provided from the Metropolitan Community Health Services System; data for residents of Adelaide attending Women's Health Statewide and Adelaide Hills Community Health Service were supplied directly by these services. The community health centres' and services' data are not available for country South Australia on a basis consistent with that used for metropolitan services. For example, some services provided from a community health (or domiciliary care) service in the metropolitan area are provided in the country by the local hospital, as an outreach service.

The data for the four metropolitan domiciliary care services were provided from the Home and Community Care (HACC) dataset for 2003. For community health services, data for services to residents of country South Australia, similar to those provided by the metropolitan domiciliary care services, were not available. The Royal District Nursing Service (RDNS) supplied client data for 2003/2004; and data for home-delivered meals were provided by Meals on Wheels; again, data for similar services provided in country areas were not available.

Each of these data sets – community health, domiciliary care and RDNS – depicts the number of individual clients (each client receiving a service in the period is included once only), rather than the total number of services provided in the period, as is the case for the hospital admissions and GP services.

The data for domiciliary care services has been standardised to the population aged 40 years and over, as over 95% of clients are of those ages.

Cautions

A number of factors should be borne in mind when reading the following commentaries and using the data and maps. These include that:

- the rate of use of services can be affected by the location of the services: this is particularly the case with the community-based services included in this chapter;
- the proportion of time spent in health promotion and education and other community development activities can differ significantly between services. Such activities generally require more time, meaning less 'activity' being reported in these head-count statistics for those services;
- similarly, the time spent with clients by staff of community health services can vary significantly. For example, a social worker or community health nurse is likely to have a much greater time involvement with each client than is a GP;
- the data do not cover all activities of these services – for example, details of group activities have not been reported.

Community health services (one-to-one clients), 2001/2002

Community health services offer early intervention, prevention, treatment, and health promotion and education services. Only clients attending for sessions on a one-to-one basis are included (that is, the data exclude group sessions). These data were not available for services in country South Australia on a basis consistent with that for Metropolitan Adelaide.

The age-standardised rate of clients in Metropolitan Adelaide has decreased over this ten-year period, from 1,320 per 100,000 in 1991/1992 to 1,102 in 2001/2002, a decline of 16.5% (Table 7.1). There was a greater decline in Central Northern region (14.0%) than in Southern (9.9%).

Table 7.1: Community health service clients

Age-standardised rate per 100,000

Region	1991/1992	2001/2002	Per cent change[1]
Central Northern (excl. Gawler)	1,311	1,128	-14.0
Southern	1,215	1,095	-9.9
Metropolitan Adelaide (incl. Gawler)	1,320	1,102	-16.5

[1]**Per cent change over ten years in the rate of community health services clients**

Metropolitan regions

There were 11,703 clients of community health services in the metropolitan regions (excluding Gawler) in 2001/2002, with a marked separation between areas with high, and those with low, client numbers (Map 7.1). This is due, in part, to the location and availability of these services, as well as to the limited ability of people in these areas to afford privately funded services of the kind offered at no cost through community health services.

This variable is consistently strongly correlated at the SLA level with variables of socioeconomic disadvantage (Table 8.1). These results, together with the strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level, of community health service clients with socioeconomic disadvantage.

Central Northern Adelaide

Some 8,333 people from the Central Northern region attended a community health centre or service in 2001/2002, two per cent more than expected from the rates for the metropolitan regions (a standardised client ratio (SCR) of 102*). There was a substantial variation in ratios mapped in this region, ranging from an SCR of 542** in Port Adelaide Enfield - Port (1,480 clients) down to 5** in Adelaide Hills - Central (six clients).

Very highly elevated ratios were recorded for community health service clients in a number of SLAs in the region. In addition to Port Adelaide Enfield - Port (with an SCR of 542**), these included Charles Sturt - North-East (with over three times the expected number of clients, an SCR of 324**, 902 clients), Port Adelaide Enfield - Coast (259**, 782) and - Inner (150**, 319), and Charles Sturt - Inner East (118**, 276) and - Inner West (112*, 291). The majority of the Playford SLAs had highly elevated ratios, including Playford - Elizabeth (an SCR of 154**, 428), - West (148**, 209), - East Central (131**, 275) and - Hills (117, 35). Salisbury - Central (an SCR of 116**, 345 clients) and - Inner North (114*, 310) also had elevated ratios.

Several SLAs in Central Northern had very low ratios with fewer community health service clients than expected. In addition to Adelaide Hills - Central (an SCR of 5**, six clients), these included Burnside - South-West (8**, 17) and - North-East (12**, 27), Adelaide Hills - Ranges (8**, nine clients), Unley - East (13**, 27), Walkerville (18**, 13), Norwood Payneham St Peters - West (20**, 38) and - East (22**, 39), Unley - West (25**, 45), Campbelltown - East (26**, 76) and - West (30**, 62), Adelaide (46**, 84), Tea Tree Gully - South (50**, 175), - Hills (51**, 67), - Central (53**, 151) and - North (61**, 171), Prospect (58**, 120) and West Torrens - West (60**, 179).

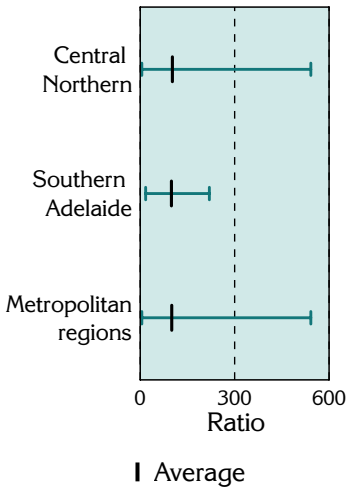
Southern Adelaide

There were one per cent fewer community health service clients in the Southern region than expected for a population of this size and age composition (a standardised client ratio of 99, 3,370 clients). Within the region, the highest ratios were recorded in the Onkaparinga SLAs of - North Coast (an SCR of 220**, 412), - Hackham (210**, 316), - Morphett (185**, 475), - South Coast (170**, 416) and - Woodcroft (128**, 476).

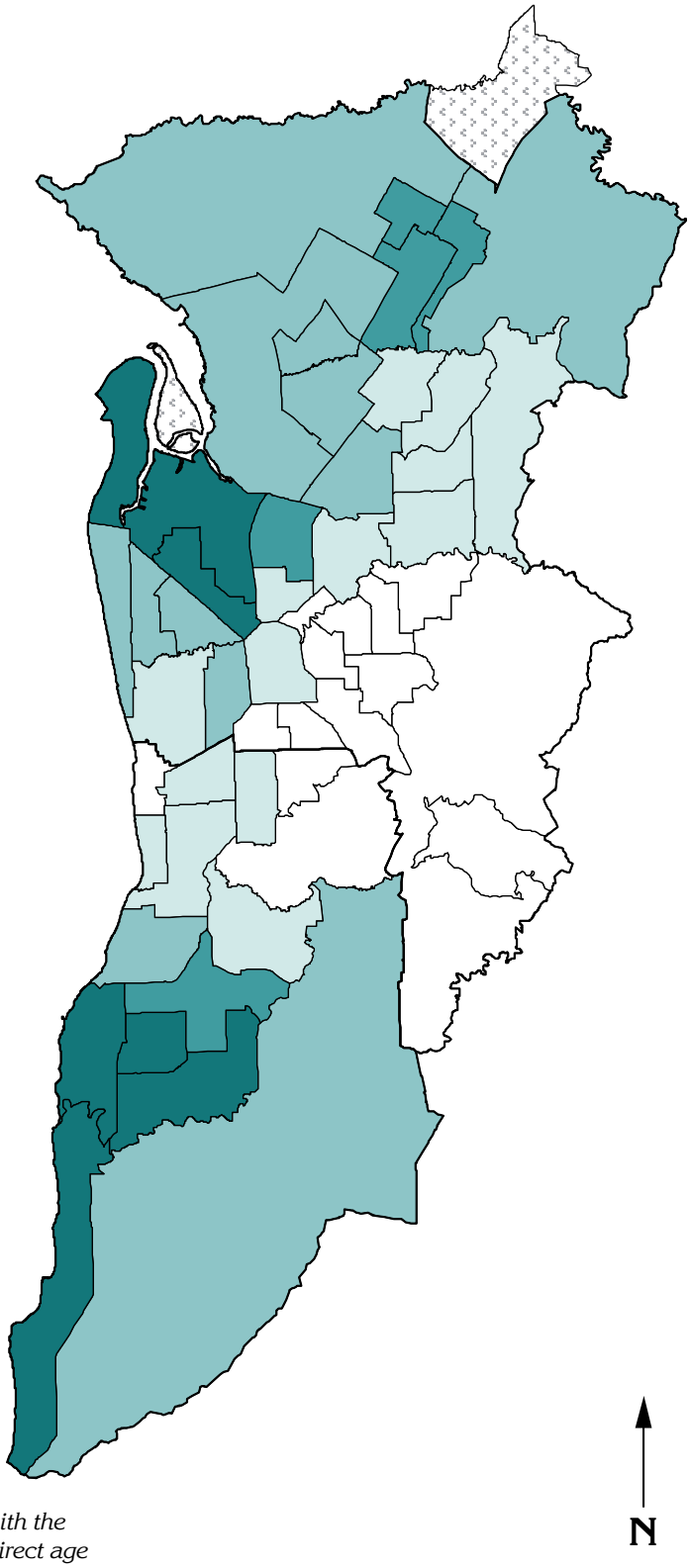
There was also a wide variation in ratios mapped in Southern, with the lowest SCR of 28** recorded for Mitcham - Hills (65 clients). This was followed by Holdfast Bay - North (an SCR of 33**, 68 clients) and Holdfast Bay - South (41**, 61), Mitcham - West (59**, 143), Onkaparinga - Reservoir (62**, 159) and Marion - North (69**, 186), - Central (79**, 271) and - South (an SCR of 89, 187).

[*] **indicates statistical significance: see page 24**

Map 7.1
Community health services (one-to-one clients), metropolitan regions, 2001/2002



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Client Ratio (as an index)*, by SLA

- *160 and above*
- *120 to 159*
- *80 to 119*
- *40 to 79*
- *below 40*
- *data not mapped#*

*Index shows the number of clients in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide), Gawler, or in areas with fewer than five clients

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Community mental health services (one-to-one clients), 1999/2000

Community mental health services offer a wide range of assistance and programs, ranging from acute crisis intervention and assessment, formal case management, rehabilitation and recovery programs, and peer and carer support networks. Community mental health services for adult clients are provided from a number of locations in Adelaide and country South Australia (see Appendix 1.6). Community mental health services for children and adolescents have been mapped separately (see page 326).

In 1999/2000, 13,419 South Australian adult residents were clients of a community mental health service, representing 896 clients per 100,000 population (Table 7.2). The rate was higher in country South Australia than in Metropolitan Adelaide, with 936 and 883 clients per 100,000 population respectively.

Table 7.2: Community mental health service clients, 1999/2000

Age-standardised rate per 100,000

Section of State	No.	Rate
Metropolitan Adelaide (incl. Gawler)	9,813	883
Country	3,606	936
South Australia	13,419	896

Metropolitan regions

There were 9,669 clients of community mental health services living in the metropolitan regions (excluding Gawler) in 1999/2000, slightly lower than expected from the State rates (a standardised client ratio (SCR) of 99) (Table 7.3).

As noted for community health services, there is a marked separation between areas with high, and those with low numbers of community mental health service clients (Map 7.2).

There are very strong correlations between high rates of community mental health service clients and socioeconomic disadvantage. These results, together with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level, between community mental health service clients and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

Central Northern had two per cent fewer clients than expected (an SCR of 98, with 6,823 clients). There was wide variation in the number of clients between SLAs (see graph opposite). For example, there were nearly two and a half times more clients than expected in Playford - Elizabeth (an SCR of 244**, 528 clients), but just over one quarter the number expected in Adelaide Hills - Central (27**, 29). There were high rates and large numbers of clients in Port Adelaide Enfield - Inner (an SCR of 199**, 368 clients), Playford - West Central (174**, 181), Adelaide (159**, 236), Port Adelaide Enfield - Coast (144**, 362), Charles Sturt - North-East (143**, 346), Port Adelaide Enfield - Port (143**, 340), Salisbury - Central (142**, 341), Campbelltown - West (120**, 215), Charles Sturt - Inner East (119**, 240), Norwood Payneham St Peters - West (119*, 217) and Salisbury - Inner North (an SCR of 112, 234).

There were also relatively large numbers of clients, but lower ratios, in the SLAs of Charles Sturt - Coastal (306 clients, an SCR of 105), Port Adelaide Enfield - East (267, 103), West Torrens - West (225, 84**) and Salisbury - South-East (215, 72**).

Several SLAs had at least 40% fewer clients of community mental health services than expected from the State rates. These were Adelaide Hills - Central (an SCR of 27**, 29 clients), Tea Tree Gully - Hills (31**, 35), Adelaide Hills - Ranges (39**, 34), Tea Tree Gully - Central (42**, 100), Burnside - North-East (44**, 86) and - South-West (50**, 92), Tea Tree Gully - South (50**, 150), Charles Sturt - Inner West (52**, 119), Campbelltown - East (53**, 132), Tea Tree Gully - North (59**, 133) and Playford - West (60**, 41).

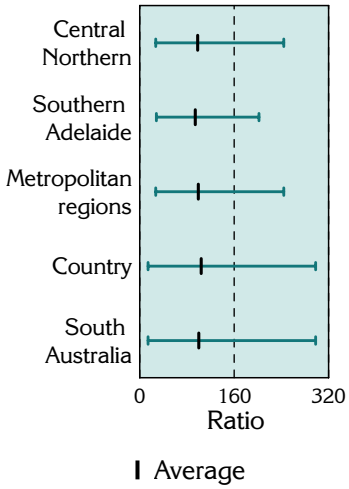
Southern Adelaide

There were six per cent fewer clients than expected in the south (an SCR of 94**, 2,681 clients). However, there were twice as many clients as expected in Onkaparinga - North Coast (an SCR of 202**, 315 clients), and 56% more clients than expected in Onkaparinga - Hackham (156**, 192) and Marion - North (156**, 374). There were also more clients than expected in Onkaparinga - Morphett (an SCR of 123**, 267 clients) and Marion - Central (119**, 363).

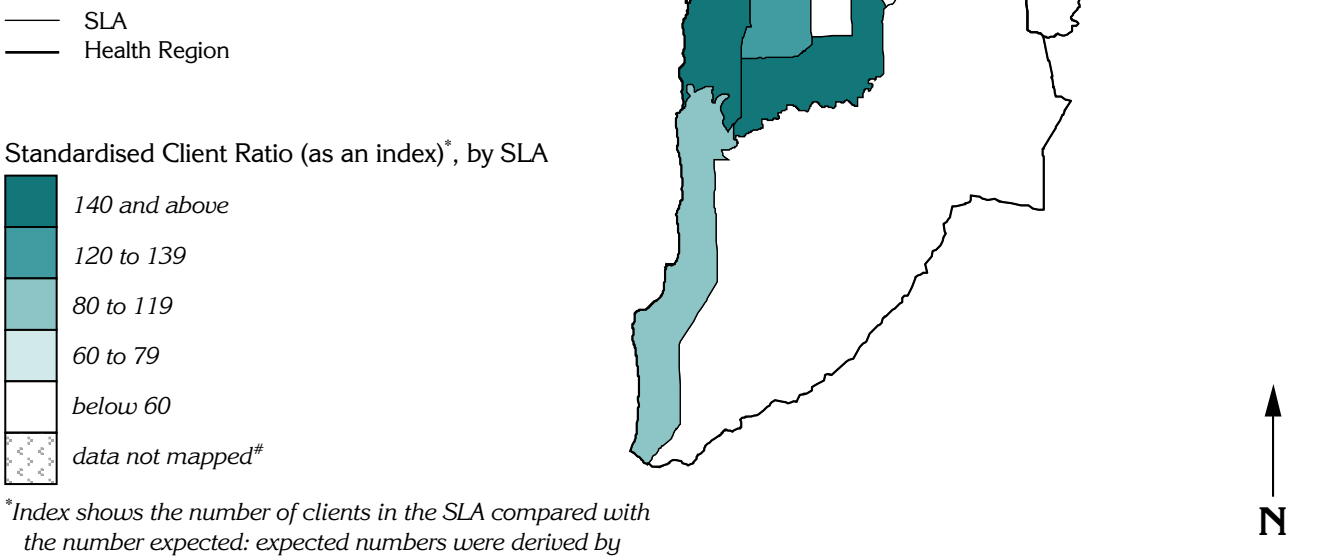
There were very low ratios in the SLAs of Onkaparinga - Hills (an SCR of 28**, 26 clients), - Woodcroft (41**, 119) and - Reservoir (42**, 86). There were also low ratios in Marion - South (47**, 78) and Mitcham - Hills (54**, 112).

* indicates statistical significance: see page 24

Map 7.2
Community mental health services (one-to-one clients), metropolitan regions, 1999/2000



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



*Index shows the number of clients in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide) or in areas with fewer than five clients: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Community mental health service clients (one-to-one clients), 1999/2000

Country South Australia

There were 3,750 country residents who were clients of community mental health services, four per cent more than expected from the State rates (a standardised client ratio (SCR) of 104**) (Table 7.3). SCRs varied across the State, with the highest rates generally in the towns mapped (Map 7.3).

Table 7.3: Regional totals, community mental health service clients, 1999/2000

Region	No.	SCR
Hills Mallee Southern	819	87**
Wakefield[1]	1,053	128**
South East	161	30**
Northern & Far Western	623	137**
Eyre	425	149**
Mid North	381	141**
Riverland	281	97
Country SA	**3,750**	**104***
Central Northern	6,823	98
Southern	2,681	94**
Metropolitan regions	**9,669**	**99**
South Australia	**13,419**	**100**

[1]**Gawler is included in the Wakefield region**

The correlation analysis shows a weak association at the SLA level between community mental health service clients and socioeconomic disadvantage (Table 8.2).

The Regions

Overall, there were 49% more community mental health service clients in **Eyre** than expected from the State rates, an SCR of 149** (425 clients). There were nearly two and a half times the number of clients from both Ceduna (249**, 74 clients) and Port Lincoln (243**, 277). In contrast, very low SCRs were recorded for Kimba (47, five clients), Streaky Bay (55, nine), Franklin Harbor (56, six), Elliston (58, six) and Tumby Bay (66, 15).

In **Mid North**, there were 41% more clients than expected (a standardised client ratio (SCR) of 141**, 381 clients). The SLAs within this region with elevated ratios included Peterborough (an SCR of 222**, 38 clients) and Port Pirie - City (189**, 234). The SLA with the lowest ratio in this region was Northern Areas (an SCR of 68*, 28 clients).

In **Northern and Far Western,** there was a standardised client ratio of 137** (623 clients), representing 37% more clients than expected from the State rates. Within this region, there were highly elevated ratios in Port Augusta (an SCR of 173**, 204 clients) and Whyalla (166**, 332). The SLAs with the lowest ratios were Unincorporated Far North (an SCR of 32**, 15 clients) and Roxby Downs (56**, 21).

There were 1,053 clients of community mental health services in **Wakefield**, 28% more than expected from the State rates (an SCR of 128**). There were many more clients than expected from the State rates in Copper Coast (an SCR of 202**, 185 clients), Goyder (187**, 70) and Yorke Peninsula - South (182**, 64). Large numbers of clients were recorded in Gawler (144 clients, 93) and Light (117 clients, 102).

There were three per cent fewer clients than expected in **Riverland** (an SCR of 97, 281 clients). The SLA with the lowest ratio in this region was Loxton Waikerie - West (56**, 23).

In **Hills Mallee Southern,** there were 13% fewer clients than expected (an SCR of 87**, 819 clients). There were three times as many clients of community mental health services as expected living on Kangaroo Island (298**, 113) and in Alexandrina - Coastal (167**, 137). There were also large numbers of clients in Murray Bridge (145 clients, 98) and Victor Harbor (115, 127*). There were a number of SLAs with fewer than 70% of the expected number of clients in 1999/2000 including Adelaide Hills Balance (34**, 25), Southern Mallee (36**, seven clients), Mount Barker Balance (39**, 26), Alexandrina - Strathalbyn (42**, 28), Adelaide Hills - North (45**, 25), The Coorong (49**, 25), Karoonda East Murray (64, seven clients), Yankalilla (65*, 22) and Mount Barker - Central (66**, 85).

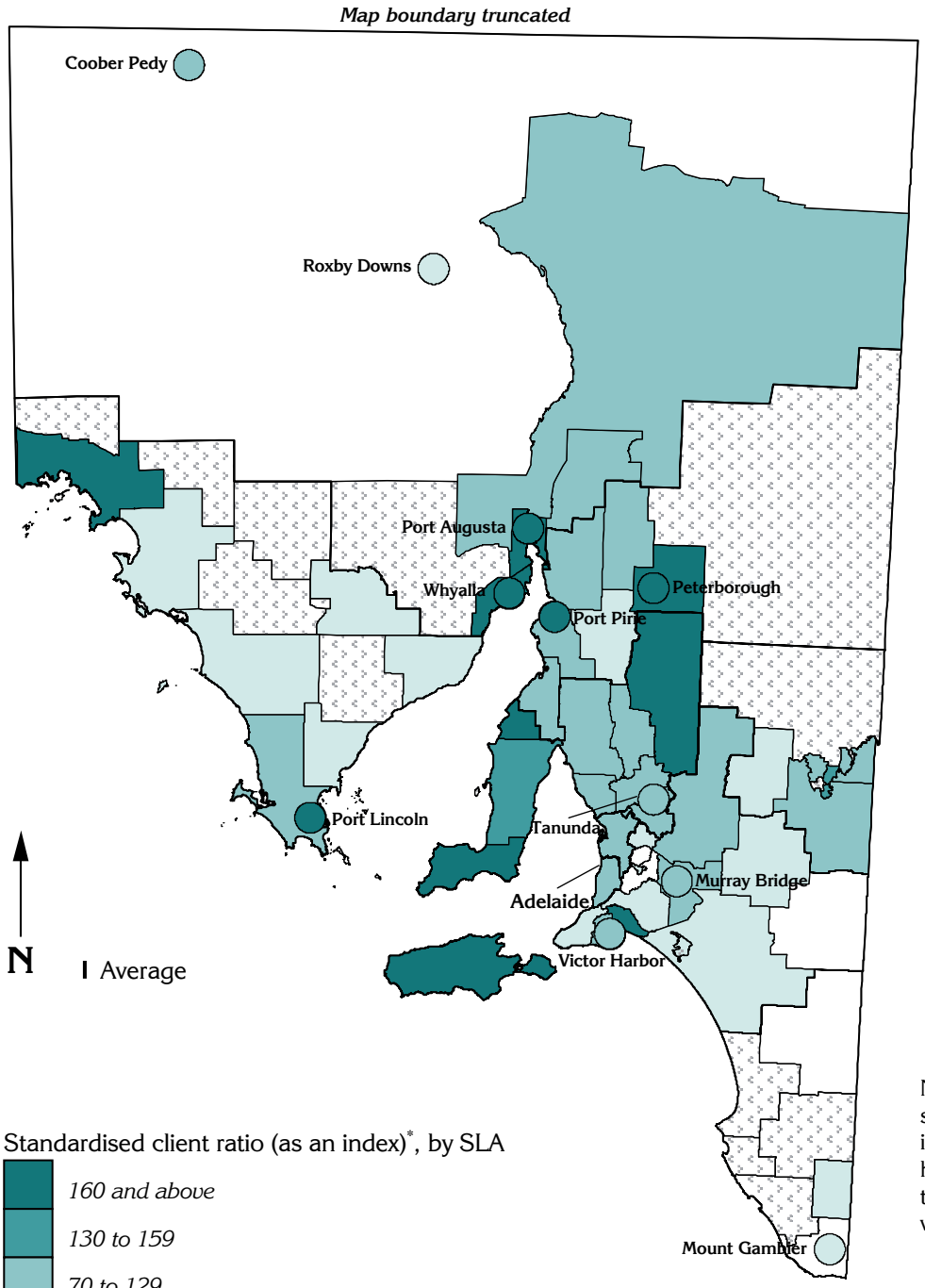
There were 70% fewer clients than expected in **South East** (an SCR of 30**, 161). Mount Gambier had 112 clients and a low SCR of 55**. The other SLAs in this region had very low ratios, including Grant (14**, ten clients), Tatiara (30**, 18) and Wattle Range - East (41**, 12).

ASGC Remoteness Classification

There was a variation in the number of clients of community mental health services living in the various remoteness classes, with similar levels of clients in the Major Cities (an SCR of 98*) and Very Remote (94) areas. Those in the Remote (an SCR of 145**) and Outer Regional (111**) areas had the largest numbers of clients per head of population.

* **indicates statistical significance: see page 24**

Map 7.3
Community mental health service (one-to-one clients), South Australia, 1999/2000



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

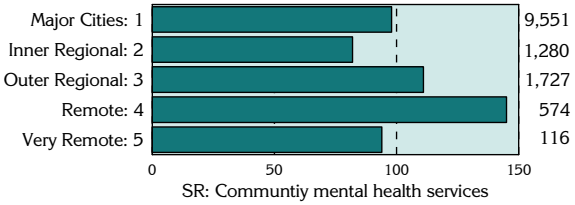
Standardised client ratio (as an index)*, by SLA

- *160 and above*
- *130 to 159*
- *70 to 129*
- *40 to 69*
- *below 40*
- *data not mapped#*

*Index shows the number of clients in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100 or there were fewer than five clients

ASGC Remoteness classification Clients



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Child and Adolescent Mental Health Services (one-to-one clients), 2001 to 2003

The Child and Adolescent Mental Health Services (CAMHS) provide a confidential counselling service for children and young people and their families: the majority (99.4%) are aged from 0 to 19 years. Services are provided by child and family specialists including psychologists, psychiatrists, social workers, nurses, occupational therapists and speech pathologists who are experienced in helping children with emotional, behavioural or mental health difficulties, and their families.

Details are available for individual children and young people attending at any one location of CAMHS: that is, while clients attending at more than one location will be counted at each location, multiple attendances at a single location will be recorded as being for one individual. Rates have changed little in Metropolitan Adelaide over recent years, but the number of country residents using these services has increased strongly over each period shown (Table 7.4).

Table 7.4: Child and Adolescent Mental Health Service clients

Age-standardised rate per 100,000 aged 0 to 19 years

Section of State	1997-99	1999-01	2001-03	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	924	1,034	910	-1.5
Country	948	1,274	1,558	64.3
South Australia	931	1,105	1,103	18.5

[1]**Per cent change over four years in the rate of Child and Adolescent Mental Health Services' clients**

Metropolitan regions

The number of CAMHS clients in the metropolitan regions (excluding Gawler) was 17% fewer than expected from the State rate (a standardised client ratio (SCR) of 83**, 7,489 clients) (Table 7.5).

As noted for other community-based services, there is a marked separation between areas with high, and those with low numbers of CAMHS clients (Map 7.4). There are very strong correlations between high rates of CAMHS clients and the variables for disability support pensioners, low income families and smoking during pregnancy. There were also strong correlations with other indicators of disadvantage. These results, together with a strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between CAMHS clients and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

There were 22% fewer clients than expected in Central Northern (an SCR of 78**, 4,866 clients). The SLAs in this region with elevated ratios included Port Adelaide Enfield - Coast (160**, 368), Port Adelaide Enfield - Port (138**, 281), Playford - Elizabeth (132**, 322) and Port Adelaide Enfield - Inner (123**, 179).

There were large numbers of clients, but low ratios, in Salisbury - South-East (230 clients, an SCR of 78**), - Central (222, 81**) and - Inner North (213, 76**), and Charles Sturt - Coastal (189 clients, 88).

Many SLAs in Central Northern had low rates of CAMHS clients, including Walkerville (an SCR of 10**, five clients), Burnside - South-West (21**, 35), Unley - East (25**, 34), Burnside - North-East (30**, 51), Norwood Payneham St Peters - West (31**, 36), Adelaide (34**, 20), Unley - West (37**, 43) and Adelaide Hills - Central (48**, 60).

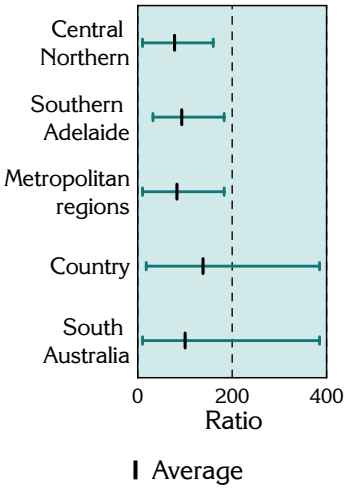
Southern Adelaide

In Southern, there were seven per cent fewer clients than expected from the State rates (an SCR of 93**, 2,623 clients). Elevated ratios were recorded for residents in the Onkaparinga SLAs of - North Coast (183**, 273), - Hackham (131**, 195), - South Coast (129**, 300) and - Morphett (127**, 286), as well as in Marion - Central (122**, 286) and - North (an SCR of 111, 190), and Holdfast Bay - South (an SCR of 108, 99).

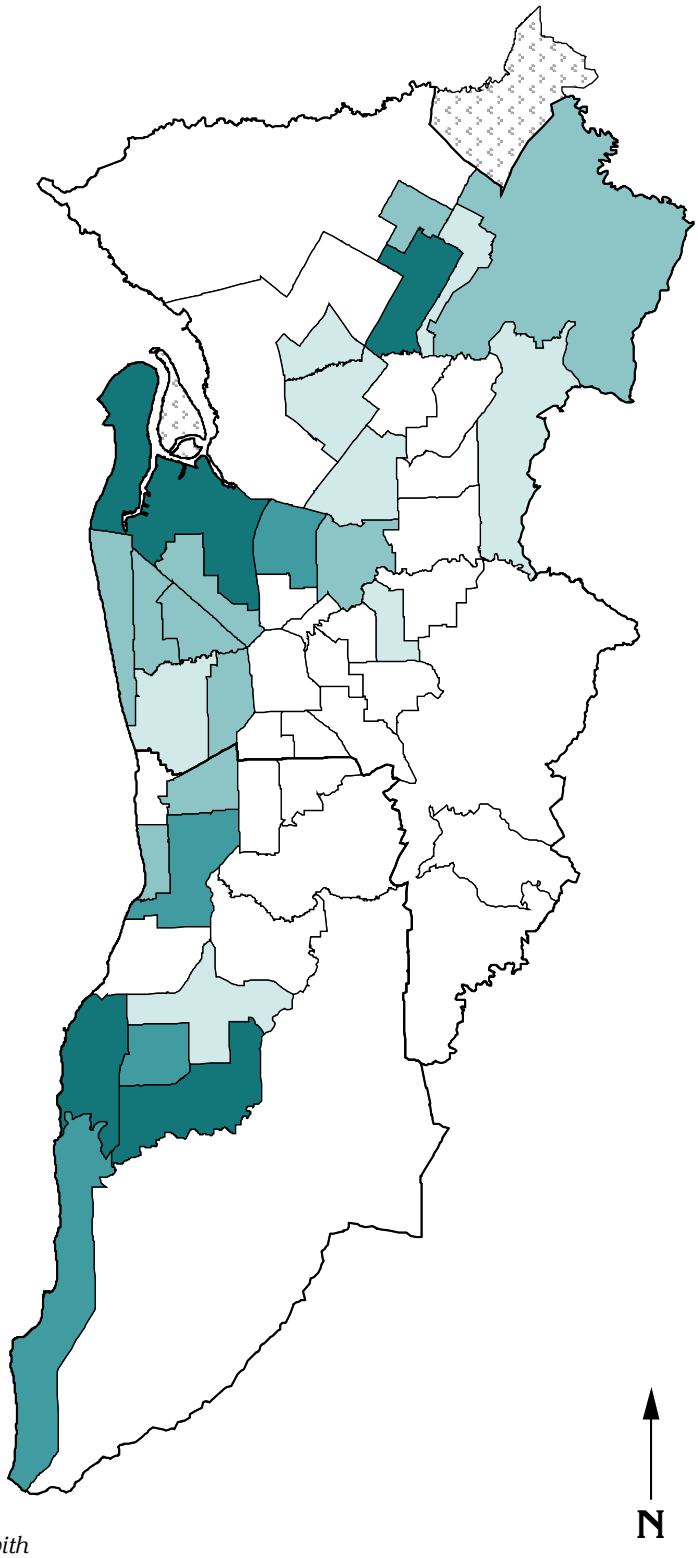
There were large numbers of clients in Onkaparinga - Woodcroft (284 clients, an SCR of 81). The SLAs in Southern with below average standardised client ratios included Mitcham - North-East (32**, 42) and - West (50**, 88), Holdfast Bay - North (54**, 62), Onkaparinga - Hills (63**, 71) and - Reservoir (65**, 170), Marion - South (66**, 149) and Mitcham - Hills (67**, 130).

* **indicates statistical significance: see page 24**

Map 7.4
Child and Adolescent Mental Health Services (one-to-one clients), metropolitan regions, 2001 to 2003



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Client Ratio (as an index)*, by SLA

- *130 and above*
- *115 to 129*
- *85 to 114*
- *70 to 84*
- *below 70*
- *data not mapped#*

*Index shows the number of clients in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Child and Adolescent Mental Health Services (one-to-one clients), 2001 to 2003

Country South Australia

The standardised client ratio (SCR) in country South Australia indicated that there were 38% more Child and Adolescent Mental Health Services (CAMHS) clients than expected from the State rates (a standardised client ratio (SCR) of 138**, 5,482 clients) (Table 7.5).

Riverland and **Northern and Far Western** both had highly elevated regional SCRs: the highest rates were generally in the towns mapped, and in the eastern parts of the State (Map 7.5).

Table 7.5: Regional totals, Child and Adolescent Mental Health Service clients, 2001-2003

Region	No. clients	SCR
Hills Mallee Southern	1,409	137**
Wakefield[1]	916	101
South East	790	133**
Northern & Far Western	876	175**
Eyre	347	105
Mid North	467	165**
Riverland	678	219**
Country SA	**5,482**	**138****
Central Northern	4,866	78**
Southern	2,623	93**
Metropolitan regions	**7,489**	**83****
South Australia	**13,013**	**100**

[1]**Gawler is included in the Wakefield region**

The correlation analysis shows a strong association between high rates of CAMHS clients and socioeconomic disadvantage. These results, together with a strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between CAMHS clients and socioeconomic disadvantage (Table 8.2).

The Regions

The SCR for **Riverland** was highly elevated, with more than twice the number of CAMHS clients than expected from the State rates (an SCR of 219**, 678 clients). All of the SLAs in this region had ratios in the highest range with most having SCRs over 200. The highest SCR was mapped for residents of Berri and Barmera - Berri (262**, 166) followed by Berri and Barmera - Barmera (228**, 91), Loxton Waikerie - East (216**, 149), Renmark Paringa - Renmark (205**, 159), Loxton Waikerie - West (192**, 83) and Renmark Paringa - Paringa (175**, 26).

Northern and Far Western also had a highly elevated SCR, of 175** (876 clients). The majority of SLAs were again in the highest range, with the ratio in Unincorporated Whyalla being particularly high, with nearly four times the expected number of clients (an SCR of 385**), but with just five clients. Whyalla (201**, 431), Port Augusta (201**, 266), Flinders Ranges (170**, 28), Coober Pedy (164**, 30), Unincorporated Flinders Ranges (148, 19) and Roxby Downs (142**, 59) all had elevated ratios. There was a low SCR in Unincorporated Far North (59**, 38 clients).

Mid North had 65% more clients than expected from the State rates, an SCR of 165** (467 clients). The SLAs of Peterborough (254**, 43) and Port Pirie - City (208**, 266) were both mapped in the highest range. There was a low SCR in Orroroo/Carrieton (68, six clients).

There were 1,409 CAMHS clients in **Hills Mallee Southern** (an SCR of 137**). There was a highly elevated ratio in Murray Bridge (242**, 390 clients), followed by The Coorong (179**, 98), Mount Barker - Central (157**, 256), Mid Murray (157**, 108), Karoonda East Murray (153, 18) and Victor Harbor (144**, 110). Mount Barker Balance had a large number of CAMHS clients (108 clients, an SCR of 124*). There was a low SCR in Adelaide Hills - North (45**, 32).

South East had an SCR of 133** (790 clients) with elevated ratios in Mount Gambier (163**, 362) and Wattle Range - West (130**, 112).

Eyre had just five per cent more clients than expected from the State rates (an SCR of 105, 347 clients); an elevated ratio of 177** was recorded in Port Lincoln (243 clients). There were low SCRs in the SLAs of Ceduna (18**, seven clients), Streaky Bay (29**, five), Kimba (44, five) and Cleve (62, eleven).

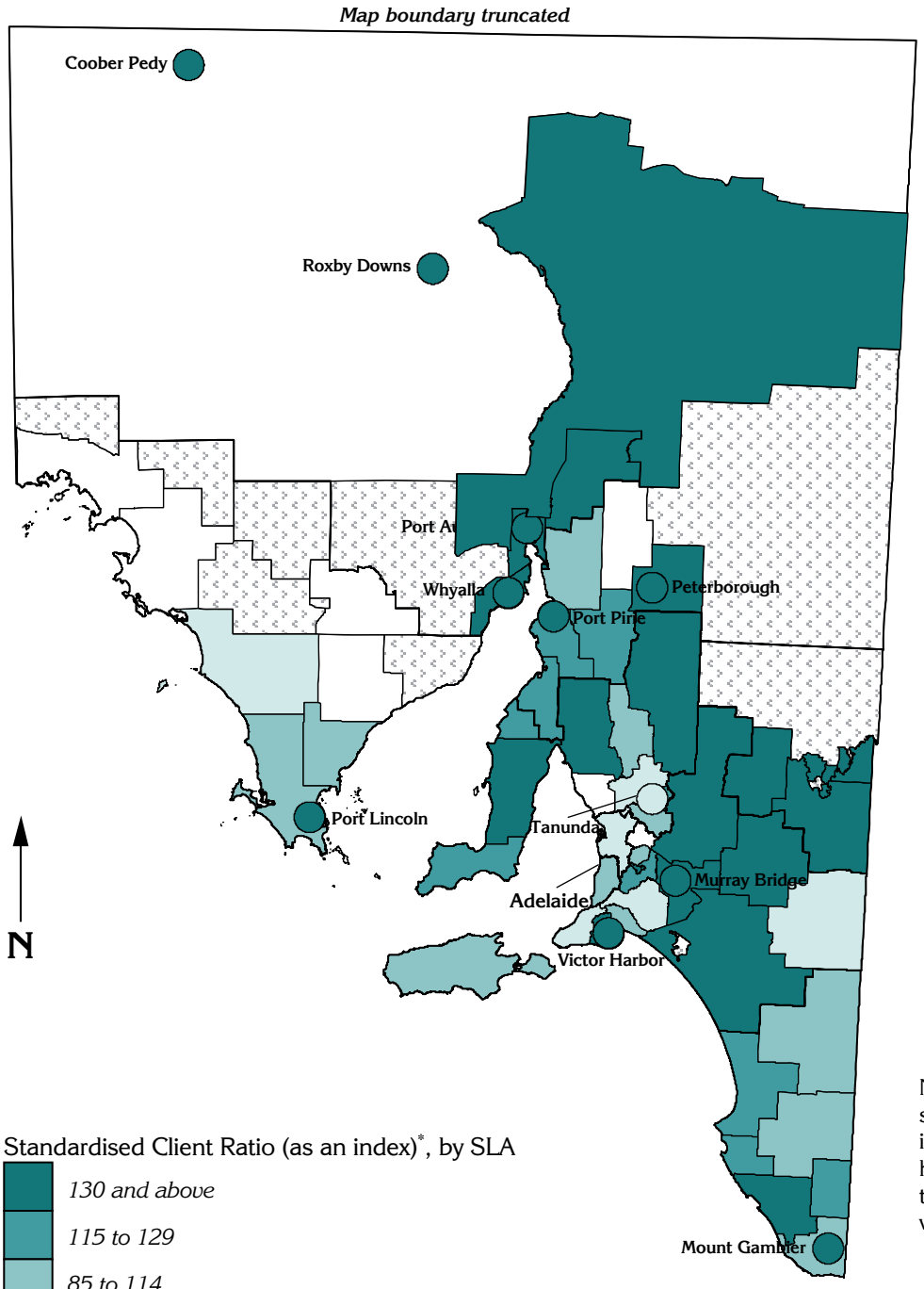
There were 916 clients in **Wakefield**, one per cent more than expected (an SCR of 101). Within this region, there were elevated ratios in Yorke Peninsula - North (146**, 88), Goyder (142**, 55) and Wakefield (140**, 88). There were large numbers of clients in Gawler (137 clients, 78**) and Copper Coast (118, 128**). There was a low SCR in Mallala (65**, 53).

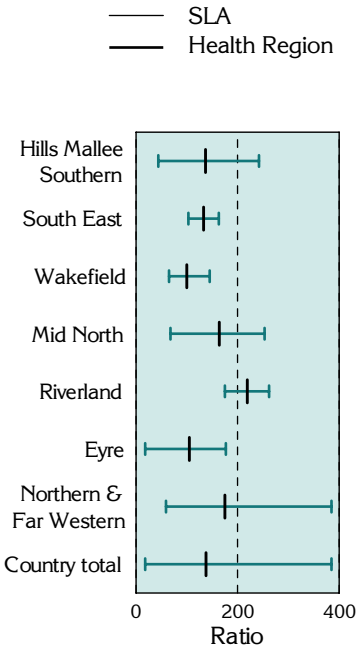
ASGC Remoteness classification

Ratios increased with increasing remoteness, from an SCR of 82 in Major Cities to 166 in Outer Regional. The ratios in both Remote and Very Remote were lower; however, this is likely to reflect the lack of accessible services for children and young people with mental health issues in remote areas, rather than a reduction in need.

* **indicates statistical significance: see page 24**

Map 7.5
Child and Adolescent Mental Health Services (one-to-one clients), South Australia, 2001 to 2003





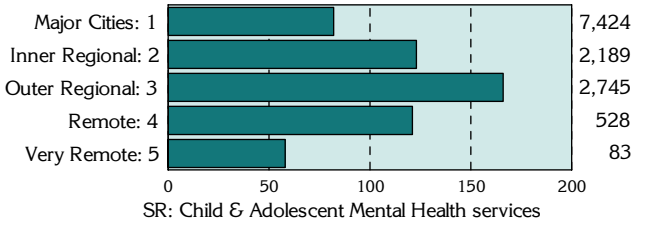
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Client Ratio (as an index)*, by SLA

- *130 and above*
- *115 to 129*
- *85 to 114*
- *70 to 84*
- *below 70*
- *data not mapped#*

*Index shows the number of clients in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100 or there were fewer than five clients



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Department for Families and Communities' clients, 2001 to 2002

The Department for Families and Communities (DFC) offers a range of services to people in the community, including emergency financial assistance, individual and family support, counselling (e.g. personal, financial), crisis care (including after hours care) and child protection. There were 60,158 clients of DFC in 2001 to 2002, a rate of 1,984 clients per 100,000 population. The rate was much higher in country South Australia (2,396 clients per 100,000 population) than in Metropolitan Adelaide (1,769) (Table 7.6).

Table 7.6: Department for Families and Communities' clients, 2001 to 2002

Age-standardised rate per 100,000[1]

Section of State	No.	Rate
Metropolitan Adelaide (incl. Gawler)	39,176	1,769
Country	19,592	2,396
South Australia	60,158	1,984

[1] **2,652 clients excluded from standardisation due to unknown age**

Metropolitan regions

In 2001 to 2002, there were 12% fewer clients in the metropolitan regions (excluding Gawler) than expected from the State rates (a standardised client ratio (SCR) of 88**). Both regions had fewer clients than expected, with a notably lower ratio in Southern than in Central Northern.

Highly elevated ratios were mapped in parts of the north-west, inner and outer north, and outer south, and in the city of Adelaide. SLAs with more clients than expected include some of the most disadvantaged in the metropolitan regions (see Chapters 4 and 5). The elevated ratio for the SLA of Adelaide is likely, in part, to reflect the allocation of Adelaide as the usual address for clients who live in supported accommodation in the city, or who are homeless.

High rates of DFC clients were very strongly correlated with unemployment (the unemployment rate, unemployment beneficiaries and jobless families); being Indigenous; renting from the South Australian Housing Trust; single parent and low income families, children under the age of 15 living in welfare-dependent or other low income families; disability support pensioners and female sole parent pensioners; Accident and Emergency department attendances; avoidable mortality, terminations of pregnancy, GP services, admissions to public acute hospitals and male deaths. These results, together with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest a strong association at the SLA level between DFC clients and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

Despite having a low overall SCR of 94** (28,615 clients), there was considerable variation in the region, with the number of clients ranging from over three times more, to fewer than one fifth, the expected number (see graph opposite). The most highly elevated ratio was in Playford - West Central (an SCR of 315**, 1,946 clients), with the SCR in Elizabeth similarly highly elevated (290**, 3,106). More than twice the expected number of clients were recorded in Adelaide (an SCR of 268**, 1,334 clients), and Port Adelaide Enfield - Inner (215**, 1,600) and - Port (203**, 2,020). Salisbury - Central (137**, 1,665) and - Inner North (130**, 1,578), and Charles Sturt - North-East (125**, 1,261) also had highly elevated ratios. Large numbers of clients were recorded in Salisbury - South-East (1,305 clients, an SCR of 93*), Port Adelaide Enfield - East (1,207, 112**) and - Coast (1,064 clients, 98), and Salisbury - North-East (908 clients, 94).

A majority of SLAs in the region had extremely low SCRs. Those with less than half the expected number of clients included Burnside - North-East (an SCR of 19**, 143 clients) and - South-West (29**, 218), Adelaide Hills - Central (25**, 134) and - Ranges (26**, 111), Unley - West (29**, 190), Playford - Hills (30**, 38), Campbelltown - East (31**, 336), Walkerville (38**, 93), Unley - East (39**, 284), and Tea Tree Gully - Hills (32**, 157), Central (48**, 553) and - North (49**, 604).

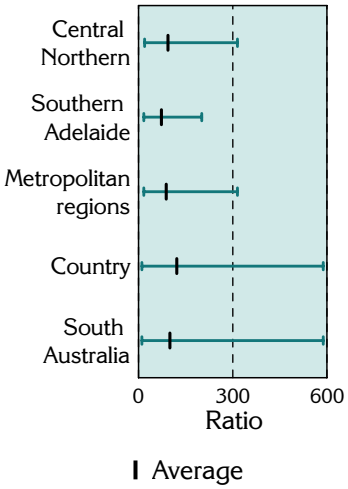
Southern Adelaide

The SCR for Southern was much lower than in Central Northern, with more than one quarter fewer clients than expected (an SCR of 73**, 9,363 clients). Highly elevated SCRs were mapped in the Onkaparinga SLAs of - North Coast (an SCR of 201**, 1,376 clients), - Hackham (181**, 1,157) and - Morphett (132**, 1,363). Marion - Central (1,157 clients, an SCR of 100) and Onkaparinga - South Coast (922, 92*) also had large numbers of clients.

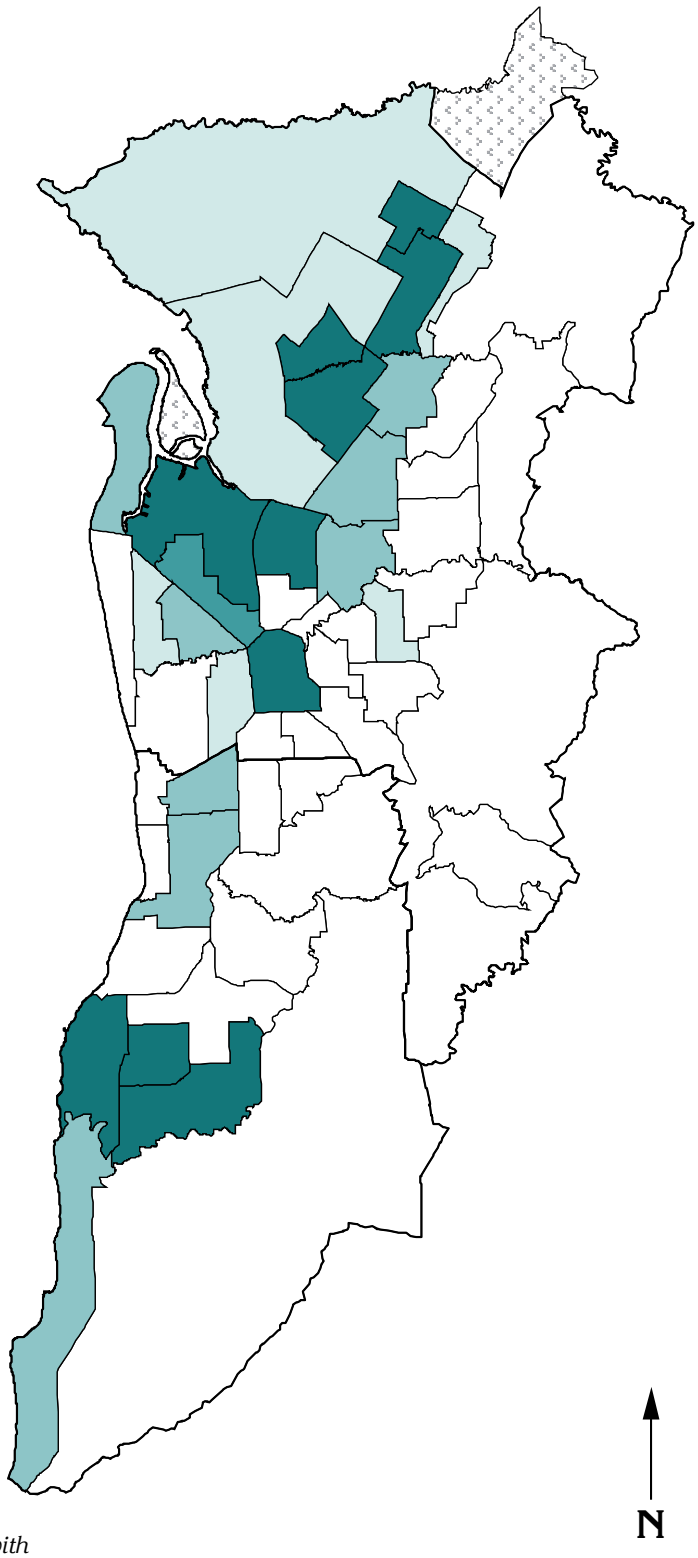
SLAs with low SCRs included Mitcham - North-East (an SCR of 17**, 100 clients), - Hills (22**, 199) and - West (33**, 277), Marion - South (29**, 275), Onkaparinga - Hills (31**, 137), - Reservoir (35**, 393) and - Woodcroft (44, 682), and Holdfast Bay - North (34**, 216) and - South (37**, 173).

* **indicates statistical significance: see page 24**

Map 7.6
Department for Families and Communities' clients, metropolitan regions, 2001 to 2002



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Client Ratio (as an index)*, by SLA

- *130 and above*
- *110 to 129*
- *90 to 109*
- *70 to 89*
- *below 70*
- *data not mapped#*

*Index shows the number of clients in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

The standardised client ratio (SCR) for country South Australia was 122**, 22% above the level expected from the State rates (20,790 clients). A number of regions had highly elevated ratios, the highest being in **Northern and Far Western**, with more than twice the expected number of clients (an SCR of 207**) (Table 7.7). In contrast, **South East** had 18% fewer clients than expected, an SCR of 82**. Within the regions, most SLAs had SCRs which were either highly elevated, or more than ten per cent below average: few areas had a ratio near the average (Map 7.7 and graph opposite).

Table 7.7: Regional totals, Department for Families and Communities' clients, 2001 to 2002

Region	No.	SCR
Hills Mallee Southern	3,900	89**
Wakefield[1]	3,773	99
South East	2,150	82**
Northern & Far Western	4,627	207**
Eyre	2,392	169**
Mid North	1,862	155**
Riverland	2,079	153**
Country SA	**20,790**	**122****
Central Northern	28,615	94**
Southern	9,363	73**
Metropolitan regions	**37,978**	**88****
South Australia	**60,158**	**100**

[1]**Gawler is included in the Wakefield region**

High rates of DFC clients were very strongly correlated with the unemployment rate, receiving an unemployment benefit, being Indigenous, children under the age of 15 living in welfare-dependent or other low income families, dwellings without a motor vehicle and admissions to public acute hospitals. These results, together with a strong inverse correlation with the Index of Relative Socio-Economic Disadvantage suggest a strong association at the SLA level between high rates of DFC clients and socioeconomic disadvantage (Table 8.2).

The Regions

Northern and Far Western had the largest number of clients in comparison to its population size, with an SCR of 207** (4,627 clients). Coober Pedy had a very highly elevated SCR of 464** (415 clients). In contrast, Roxby Downs had an SCR of just 37** (72 clients). Highly elevated SCRs were also recorded in Port Augusta (280**, 1,621 clients), the Unincorporated areas of Far North (208**, 639) and Whyalla (197**, 14), and Whyalla City (189**, 1,755). Flinders Ranges (88, 60 clients) and Unincorporated Flinders Ranges (89, 51 clients) had low ratios.

Eyre had over two-thirds more clients than expected from the State rates (an SCR of 169**, 2,392 clients). Unincorporated West Coast had nearly six times the expected number (an SCR of 588**, 180), with highly elevated ratios also in Ceduna (444**, 725) and Port Lincoln (195**, 1,167). The remaining SLAs had low SCRs.

Mid North had more than half as many clients as expected (an SCR of 155**, 1,862 clients). Both Peterborough (an SCR of 265**, 189) and Port Pirie - City (233**, 1,300) had more than twice the expected number of clients. The rest of the region had fewer clients than expected, including Orroroo/Carrieton (42**, 15), Port Pirie Balance (66**, 92) and Northern Areas (67**, 122).

Unlike the other regions, all of the SLAs within the **Riverland** had elevated SCRs, with a regional ratio of 153**, (2,079 clients). Very highly elevated SCRs were mapped in Unincorporated Riverland (an SCR of 426**, 28 clients), Berri and Barmera - Berri (261**, 761) and - Barmera (157**, 264), and Renmark Paringa - Renmark (124**, 415). The lowest SCR of 104 (311 clients) was recorded for Loxton Waikerie - East.

Wakefield had an SCR of 99 (3,773 clients). There was still wide variation within the region, with Copper Coast having an SCR of 168** (642 clients) and Barossa - Tanunda, an SCR of just 24** (41). There were also highly elevated SCRs in Gawler (161**, 1,198) and Yorke Peninsula - North (123**, 309). SLAs with low SCRs included Barossa - Angaston (39**, 118 clients), Yorke Peninsula - South (47**, 61) and Light (58**, 265).

There were 3,900 clients in **Hills Mallee Southern** (an SCR of 89**). Murray Bridge was the only SLA with a highly elevated ratio (202**, 1,412 clients). Victor Harbor also had an elevated SCR (116**, 383 clients). The majority of SLAs in this region had very low SCRs, including Adelaide Hills Balance (24**, 88 clients) and - North (36**, 102), Mount Barker Balance (36**, 130) and Alexandrina - Strathalbyn (44**, 148).

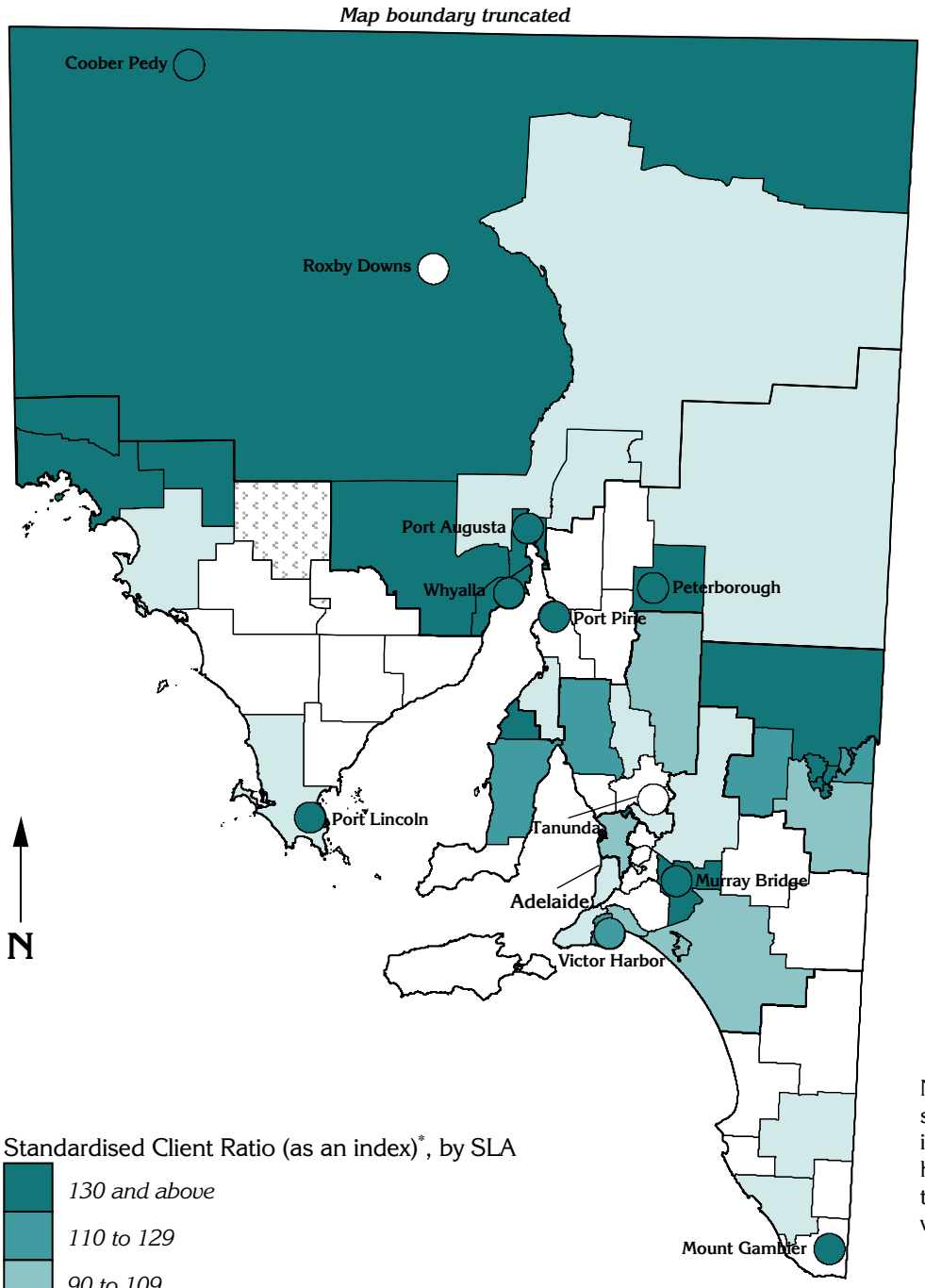
The lowest regional SCR (82**) was recorded for the **South East** (2,150 people). Mount Gambier was the only SLA in the region with an elevated SCR (130**, 1,298 clients). SLAs with low SCRs included Grant (29**, 94 clients), Robe (31**, 16), Tatiara (33**, 99), Lacepede (47**, 42) and Wattle Range - East (49**, 65).

ASGC Remoteness classification

The SCRs for people living in Outer Regional (139**) and Very Remote (288**) were very highly elevated. The remaining areas had either average, or below average numbers of DFC clients.

* **indicates statistical significance: see page 24**

Map 7.7
Department for Families and Communities' clients, South Australia, 2001 to 2002



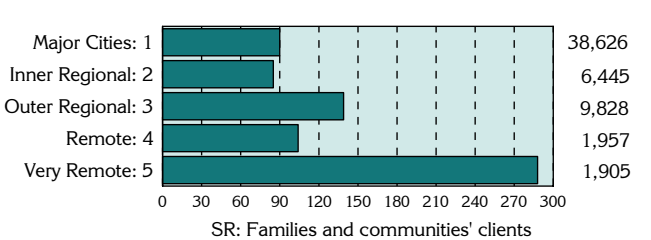
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Client Ratio (as an index)*, by SLA

- *130 and above*
- *110 to 129*
- *90 to 109*
- *70 to 89*
- *below 70*
- *data not mapped#*

*Index shows the number of clients in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Domiciliary Care service clients, 2003

Domiciliary Care service clients receive services which are either centre-based (e.g. podiatry) or are provided in the home, and without which clients would be at risk of institutionalisation. These data were not available for country South Australia.

The trend over time is of an increase in rates from 730 clients per 100,000 population in 1989, to 863 clients per 100,000 population in 2003 (Table 7.8). In 1989, the rates were similar in Central Northern and Southern; however, there was a decline of 14.3% in Southern, compared to an increase of one-third (33.4%) in Central Northern, resulting in lower rates in Southern in each period shown.

Table 7.8: Domiciliary Care service clients

Age-standardised rate per 100,000

Section of State	1989	1994	2003	Per cent change[1]
Central Northern (excl. Gawler)	743	816	991	33.4
Southern	726	615	622	-14.3
Metropolitan Adelaide (incl. Gawler)[2]	730	761	863	18.2

[1]Per cent change over 14 years in the rate of domiciliary care service clients

[2]Regional totals exclude Gawler

Metropolitan regions

In 2003, there were 9,656 domiciliary service clients in the metropolitan regions (excluding Gawler).

The geographic distribution of clients (Map 7.8) is highly consistent with the pattern of socioeconomic disadvantage described in Chapters 4 and 5. This association is supported by the correlation analysis, which shows very strong correlations between high rates of domiciliary care clients and the indicators of socioeconomic disadvantage. These results, together with the very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, suggest an association at the SLA level between domiciliary care clients and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

There were 15% more clients than expected in Central Northern (a standardised client ratio (SCR) of 115**, 7,521 clients), compared to 28% fewer clients than expected in Southern. There was considerable variation in the use of domiciliary care clients within Central Northern, as shown in the graph opposite.

The SLAs with the most highly elevated SCRs, with more than twice the expected number of clients, were Playford - West Central (237**, 138) and Playford - Elizabeth (231**, 534). There were also highly elevated ratios in Port Adelaide Enfield - Port (172**, 426) and - Inner (164**, 370), Salisbury - Inner North (155**, 137), Playford - West (149**, 64), Port Adelaide Enfield - East (148**, 387), Salisbury - Central (144**, 256), Charles Sturt - North-East (143**, 358), Prospect (141**, 234), Salisbury - North-East (133**, 169), Campbelltown - West (129**, 305), Charles Sturt - Inner East (125**, 305) and - Inner West (125**, 328), Salisbury - South-East (121**, 262), Port Adelaide Enfield – Coast (119**, 299) and Norwood Payneham St Peters - East (115**, 254).

There were also large numbers of clients, but lower ratios, in West Torrens - West (328 clients, 89*), Tea Tree Gully - South (287 clients, 107), Charles Sturt - Coastal (244 clients, 71**), West Torrens - East (238 clients, 102) and Campbelltown - East (231 clients, 104).

A number of SLAs had low SCRs: Adelaide Hills - Ranges (23**, 13), Unley - East (62**, 136), Burnside - South-West (69**, 176), Charles Sturt - Coastal (71**, 244), Unley - West (77**, 120), Walkerville (78*, 68), Adelaide (78*, 90), Burnside - North-East (80**, 197) and Tea Tree Gully - Hills (an SCR of 82, 59 clients).

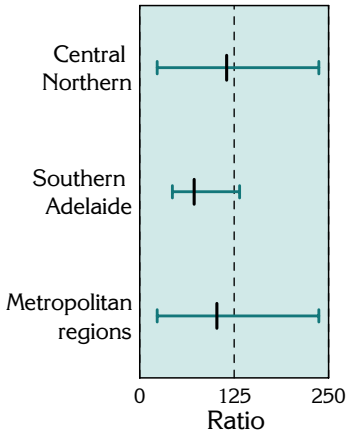
Southern Adelaide

There were 28% fewer clients than expected in the Southern region (an SCR of 72**, 2,127 clients). Within the region, there were elevated SCRs in the SLAs of Onkaparinga - Hackham (132**, 95) and - North Coast (an SCR of 115, 195). Large numbers of clients were recorded in Marion - North (332 clients, 97) and - Central (322 clients, 83**).

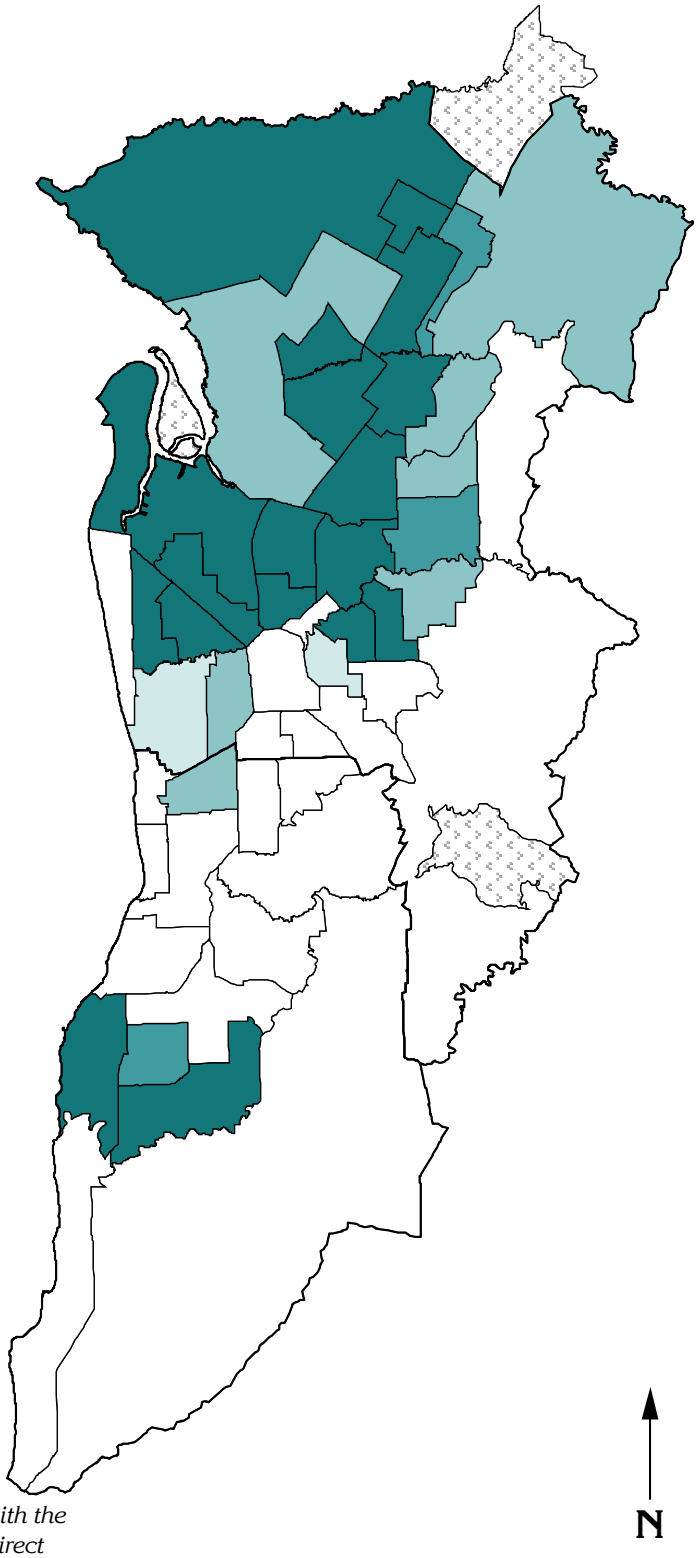
Lower than expected SCRs were recorded in Holdfast Bay - North (43**, 130), Mitcham - Hills (44**, 91), Onkaparinga - Reservoir (48**, 61), Mitcham - North-East (49**, 93), Onkaparinga - Hills (54**, 47), Marion - South (54**, 45), Holdfast Bay - South (55**, 115), Mitcham - West (61**, 160), Onkaparinga - Woodcroft (71**, 131) and - South Coast (82*, 132), and Marion - Central (83**, 322).

* **indicates statistical significance: see page 24**

Map 7.8
Domiciliary Care service clients, metropolitan regions, 2003



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Client Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

*Index shows the number of clients in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide) or in areas with fewer than five clients: Gawler has not been mapped

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Royal District Nursing Service clients, 2003/2004

The Royal District Nursing Service (RDNS) provides a range of health care services, including general and specialised nursing, to clients with the dual objectives of improving their health status whilst also enabling them to enjoy the benefits of remaining at home, thus retaining independence and an active role in their health care. There were 14,285 clients in Metropolitan Adelaide in 2003/2004, a rate of 1,276 clients per 100,000 population. The rates in both Central Northern and Southern were similar (Table 7.9).

Table 7.9: Royal District Nursing Service clients, 2003/2004

Age-standardised rate per 100,000

Section of State	No.	Rate
Central Northern (excl. Gawler)	8,867	1,186
Southern	4,334	1,277
Metropolitan Adelaide (incl. Gawler)	14,285	1,276

Data were not mapped for the SLA of Adelaide, because clients who contact Healthcare Access (the RDNS call centre) can choose to remain anonymous, resulting in their suburb being recorded as Adelaide. Further, all homeless clients seen by RDNS are allocated to the SLA of Adelaide.

Metropolitan regions

There were 14,102 clients in the metropolitan regions (excluding Gawler) in 2003/2004 (an SCR of 100). The most highly elevated SCRs were in the northern, western and southern SLAs, with relatively low ratios to the east and south-east of the city (Map 7.9).

High rates of Royal District Nursing Service clients are strongly correlated at the SLA level with indicators of disadvantage. These results, together with a strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between socioeconomic disadvantage and being a client of the Royal District Nursing Service (Table 8.1).

Central Northern Adelaide

There were 901 RDNS clients attributed to the SLA of Adelaide (a SCR of 510**). These clients include those who wish to remain anonymous and all homeless RDNS clients, and so do not reflect the number of RDNS clients who are residents in this SLA. Excluding the large number of clients recorded for Adelaide, there were seven per cent fewer clients in the Central Northern region than expected, based on the rates in the metropolitan regions (93**, 8,867).

The SLA with the most highly elevated SCR (other than Adelaide) was Salisbury - Inner North (133**, 226), with elevated ratios also in Playford - West Central (128**, 127), Port Adelaide Enfield - Coast (127**, 472), - Port (127**, 450) and - Inner (118**, 368), Playford - Elizabeth (114**, 374), Charles Sturt - Inner West (113**, 417) and - Inner East (106, 350), West Torrens - East (an SCR of 105, 356) and Charles Sturt - North-East (an SCR of 105, 382).

Large numbers of RDNS clients, but lower ratios, were found in Charles Sturt - Coastal (443 clients, 92), West Torrens - West (438, 87**), Port Adelaide Enfield - East (358 clients, 94), Burnside - South-West (339 clients, 95), Tea Tree Gully - South (306, 76**) and Salisbury - South-East (302, 87*).

Low SCRs were recorded for Adelaide Hills - Central (an SCR of 4**, six clients) and - Ranges (36**, 33), Tea Tree Gully - Hills (55**, 65), Walkerville (71**, 87), Tea Tree Gully - North (72**, 136), Unley - East (73**, 229), Campbelltown - West (73**, 239), Burnside - North-East (76**, 265), Tea Tree Gully - South (76**, 306) and - Central (77**, 188), Playford - Hills (79, 18), Campbelltown - East (79**, 265) and Salisbury - Central (81**, 227).

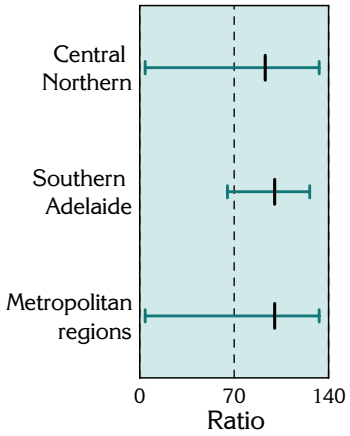
Southern Adelaide

There were 4,334 RDNS clients in Southern (an SCR of 100). Within the region, there were elevated ratios in Holdfast Bay - North (126**, 514 clients), Marion - North (121**, 563), Mitcham - West (113*, 421), Onkaparinga - South Coast (an SCR of 110, 275) and - North Coast (an SCR of 108, 265), and Marion - Central (an SCR of 105, 565).

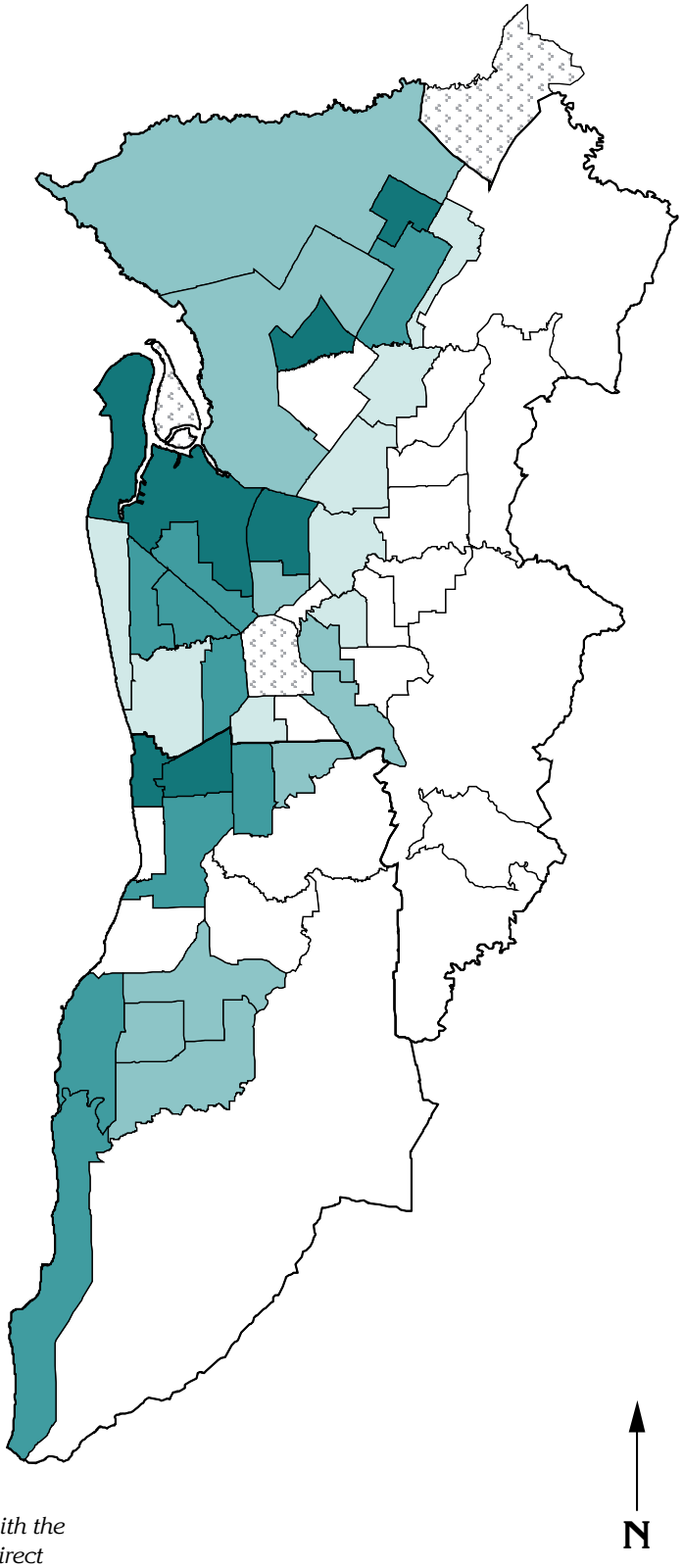
Onkaparinga - Hills (65**, 87 clients), Mitcham - Hills (66**, 205), Marion - South (71**, 109), Onkaparinga - Reservoir (74**, 162) and Holdfast Bay - South (80**, 229) all had below average rates.

* **indicates statistical significance: see page 24**

Map 7.9
Royal District Nursing Service clients, metropolitan regions, 2003/2004



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Client Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

*Index shows the number of clients in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide) or in Adelaide due to allocation of non-resident clients (see text page 336): Gawler has not been mapped

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Meals on Wheels clients, 2003

Each weekday, approximately 5,000 meals are delivered to homes throughout South Australia, by people from a pool of 10,000 volunteers. Meals are prepared in 31 kitchens owned and operated by Meals on Wheels Incorporated. Meals are provided to people on a short-term basis (after surgery or illness, as carer support or respite) and on a long-term basis (for people who are aged, chronically ill or disabled). Recurrent funding of Meals on Wheels is derived from the sale of meals (80%), and from the Home and Community Care program (20%). The price of a meal can be kept low ($4.50) because of the assistance of volunteers.

The rate of clients per 100,000 population was notably higher in Southern (1,669) than in Central Northern (1,326) (Table 7.10).

Table 7.10: Meals on Wheels clients, 2003

Age-standardised rate per 100,000

Region	No.	Rate
Central Northern	2,541	1,326
Southern	1,465	1,669
Metropolitan Adelaide (incl. Gawler)	4,085	1,437

Metropolitan regions

There were 4,006 Meals on Wheels clients in the metropolitan regions in 2003 (excludes 79 clients in Gawler).

The geographic distribution of clients (Map 7.10) is different from that in the two previous maps, with the highest rates found in a number of inner and middle SLAs.

This variable is consistently weakly correlated with the indicators of disadvantage. Together with the inverse correlation with the Index of Relative Socio-Economic Disadvantage, this suggests an association at the SLA level between Meals on Wheels clients and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

Central Northern had a larger number of Meals on Wheels clients (2,541 clients) than Southern (1,465). However, there were eight per cent fewer clients in Central Northern (a standardised client ratio (SCR) of 92**) than expected from the metropolitan regional rate. The two SLAs in this region with 25% more clients than expected were Adelaide Hills - Ranges (125, 26 clients) and Salisbury - Inner North (125, 37 clients). There were also more clients than expected in the SLAs of Playford - West Central (an SCR of 120, 24 clients), Norwood Payneham St Peters - East (an SCR of 116, 118), Charles Sturt - North-East (an SCR of 113, 125), West Torrens - East (an SCR of 113, 115), West Torrens - West (an SCR of 113, 185), and Charles Sturt - Coastal (an SCR of 112, 166) and - Inner East (an SCR of 111, 112).

No Meals on Wheels clients were recorded in Salisbury Balance. Several SLAs had fewer clients than expected: these included Campbelltown - East (30**, 27 clients), Tea Tree Gully - Hills (33**, nine clients) and - North (35**, eleven), Campbelltown – West (39**, 40), Salisbury - Central (39**, 28), Tea Tree Gully - South (47**, 51), Playford - West (47**, seven clients), Salisbury - North-East (49**, 23), Tea Tree Gully - Central (51**, 28) and Salisbury - South-East (55**, 45).

Southern Adelaide

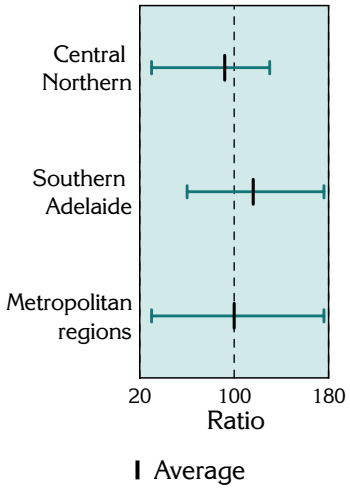
There were 16% more Meals on Wheels clients than expected in the Southern region (an SCR of 116**, 1,465 clients). Onkaparinga - North Coast in the south had the highest ratio of clients (an SCR of 176**, 126 clients) compared to Campbelltown - East in Central Northern which had the lowest ratio (30**, 27 clients) (see graph opposite).

Other SLAs with high ratios of clients included Onkaparinga - Hackham (an SCR of 146*, 39 clients) and Marion - Central (141**, 233). There were also elevated ratios in Holdfast Bay - South (121*, 116), Mitcham - West (an SCR of 117, 142 clients), Mitcham - North-East (an SCR of 112, 98), Marion - South (an SCR of 112, 30) and Onkaparinga - Morphett (an SCR of 111, 75).

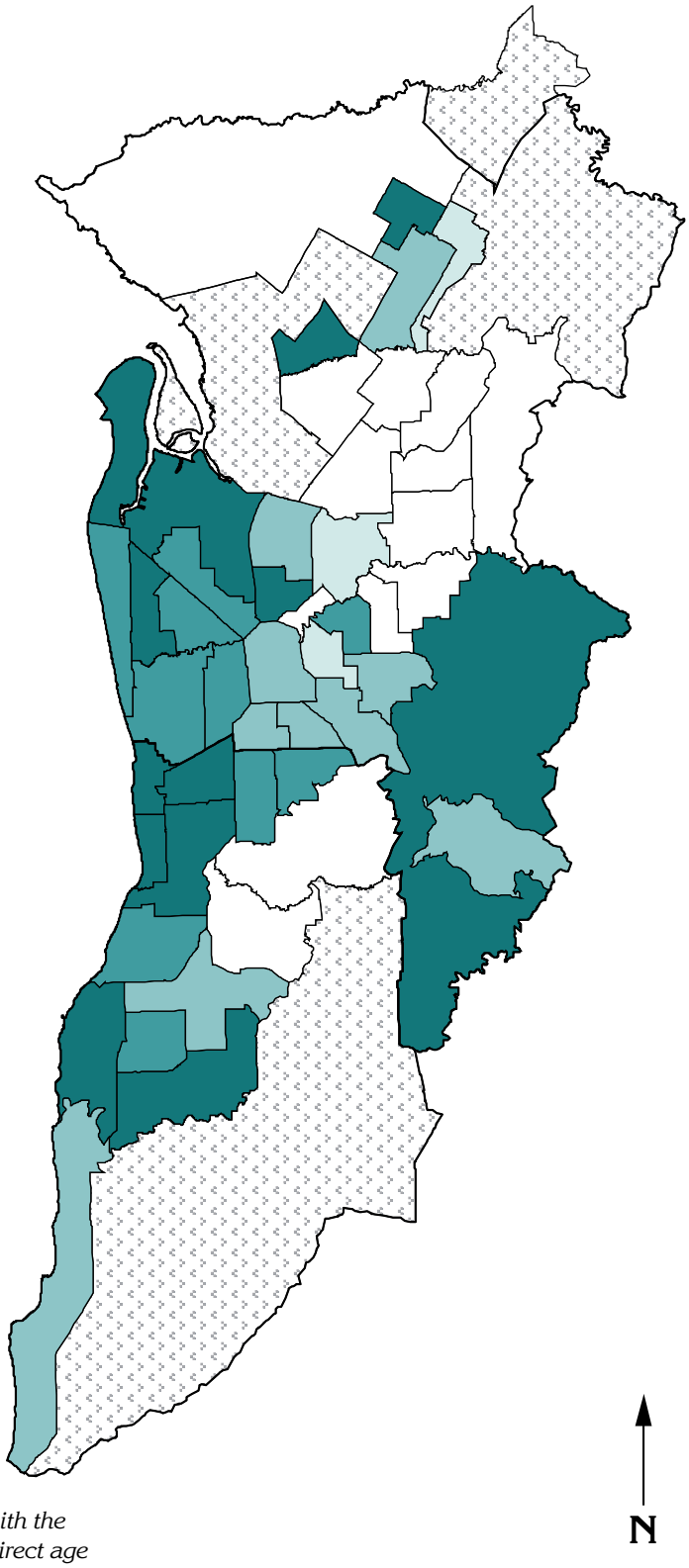
There were no Meals on Wheels clients in Onkaparinga - Hills, with 40% fewer clients than expected in Onkaparinga - Reservoir (60**, 28) and 36% fewer in Mitcham - Hills (64**, 56).

* **indicates statistical significance: see page 24**

Map 7.10
Meals on Wheels clients, metropolitan regions, 2003



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Client Ratio (as an index)*, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped#*

*Index shows the number of clients in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data were not mapped for Torrens Island (mapped with Port Adelaide) or in areas with fewer than five clients: Gawler has not been mapped

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Breast screening participation, 2001 to 2002

Early detection of breast cancer may improve prognosis. The aim of the BreastScreen Australia program is to facilitate early detection through regular screening of the target population of women aged 50 to 69 years. BreastScreen SA is the South Australian component of BreastScreen Australia, the national breast cancer screening program. The program provides a free screening mammography service on a state-wide basis, with fixed and mobile clinics.

The 24 month screening participation rate is higher among women in country South Australia (68,044 screenings per 100,000 female population aged 50 to 69 years) than in Metropolitan Adelaide (63,511 per 100,000 females) (Table 7.11). The data do not include women who undergo private screening; the extent to which women use alternatives is unknown (Zorbas 2003).

Table 7.11: Breast screening participation, 2001 to 2002

Age standardised rate per 100,000 females aged 50 to 69 years

Section of State	No.	Rate
Metropolitan Adelaide (incl. Gawler)	74,260	63,511
Country	29,453	68,044
South Australia	103,781	64,778

The data shown are the number of attendances for breast screening at any of the six clinics in Adelaide or the three mobile clinics operating across the State. In any two-year period, a small number of women would have had annual screens (about 7.5% per year). The service primarily targets women aged 50 to 69 years (on which the analysis is based), who accounted for over three quarters (77.6%) of the screenings undertaken in 2001 and 2002 (Table 7.12).

Table 7.12: Age of women attending for breast screening, South Australia, 2001 to 2002

Age (yrs)	No.	Per cent
40-44	6,394	4.8
45-49	12,850	9.6
50-54	33,594	25.1
55-59	28,254	21.1
60-64	22,969	17.2
65-69	18,964	14.2
70-74	6,915	5.2
75+	3,969	2.9
Total	**133,909**	**100.0**

Metropolitan regions

The 24 month participation rate of women aged 50 to 69 years in the breast screening program in the metropolitan regions (excluding Gawler) was slightly lower than expected (when compared with state-wide participation rates), with a standardised participation ratio (SPR) of 98** (73,078 participants) (Table 7.13).

The distribution of participation rates across the metropolitan regions (Map 7.11) is not typical of the patterns generally seen in this atlas: where low rates occur in the north-western and outer-northern SLAs, these are usually offset by higher rates in the inner eastern, southern and south eastern SLAs. In this map, very low rates are common in many of these areas, whereas the highest rates are further out, covering much of the southern region. The correlation analysis shows a consistently weak association at the SLA level between participation in breast screening and variables of socioeconomic advantage (Table 8.1).

Central Northern Adelaide

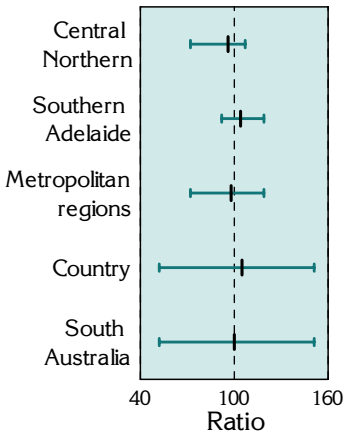
The ratio in Central Northern was four per cent lower than expected (an SPR of 96**, 49,793 participants). The highest level of participation was in Playford - East Central (an SPR of 107*, 946 participants). SLAs with large numbers of women participating included Charles Sturt - Coastal (2,624 participants, an SPR of 100), Salisbury - South-East (2,535, 96*), Tea Tree Gully - South (2,477, 95*), Campbelltown - East (2,182, 99) and West Torrens - West (2,031, 94**). SLAs with notably fewer women participating than expected from the State rates included Playford - Hills (an SPR of 72**, 134 participants) and - Elizabeth (86**, 1,527), Salisbury - Central (78**, 1,334) and Salisbury Balance (86*, 209).

Southern Adelaide

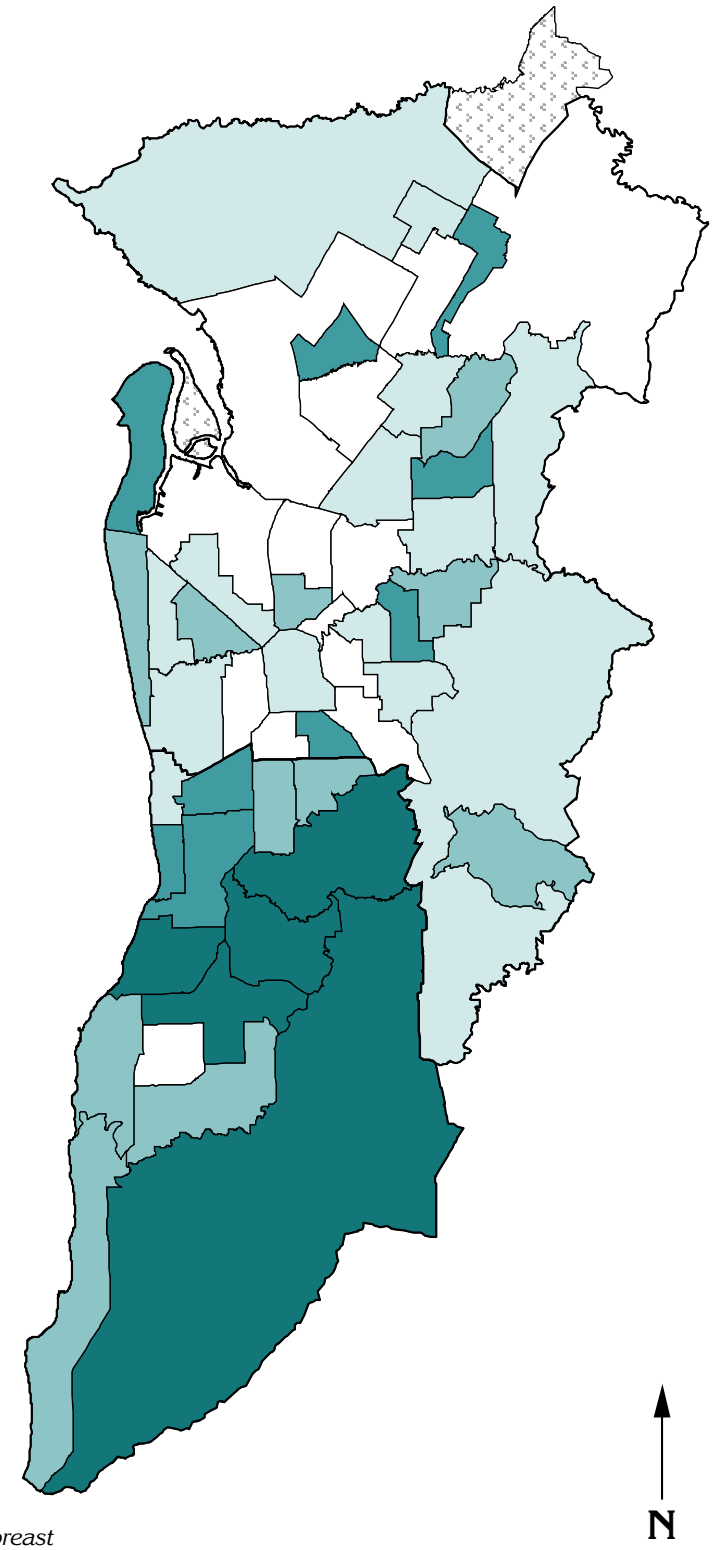
The participation ratio in Southern was higher than in Central Northern (an SPR of 104**, 23,285 participants). There were elevated ratios in Marion - South (an SPR of 119**, 1,258), Onkaparinga - Woodcroft (114**, 2,299), - Hills (112**, 929) and - Reservoir (109**, 1,673), Mitcham - Hills (108**, 2,199) and Holdfast Bay - South (107*, 1,202). Marion - Central (2,779 participants, an SPR of 102) had a large number of participants. Onkaparinga - Morphett had the lowest SPR in the region (an SPR of 92**, 1,536 participants).

* **indicates statistical significance: see page 24**

Map 7.11
Breast screening participation, females aged 50 to 69 years, metropolitan regions, 2001 to 2002



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Participation Ratio (as an index) *, by SLA

- *106 and above*
- *102 to 105*
- *98 to 101*
- *94 to 97*
- *below 94*
- *data not mapped#*

*Index shows the number of women in the SLA having a breast screen compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

Some 30,635 women from country areas participated in the breast screening program in 2001 and 2002, five per cent more than expected from the State rates (a standardised participation ratio (SPR) of 105**). All of the regions had elevated participation rates, except for **Northern and Far Western** with 14% fewer participants than expected.

Table 7.13: Regional totals, breast screening participation, 2001 to 2002

Region	No.	SPR
Hills Mallee Southern	8,811	104**
Wakefield[1]	7,482	105**
South East	4,455	113**
Northern & Far Western[2]	2,595	86**
Eyre	2,341	109**
Mid North	2,539	108**
Riverland	2,412	109**
Country SA	30,635	**105****
Central Northern	49,793	96**
Southern	23,285	104**
Metropolitan regions	73,078	98**
South Australia	**103,781**	100

[1]Gawler is included in the Wakefield region

[2]See text under Northern and Far Western, below

High rates of participation in breast screening were strongly correlated with participation in cervical screening; however, there was no consistent relationship at the SLA level between participation in breast screening and socioeconomic status evident from the correlation analysis (Table 8.2).

The Regions

The most highly elevated ratio in country South Australia was recorded for women in **South East** (an SPR of 113**, 4,455 participants). All SLAs within this region had greater participation ratios than expected. The most highly elevated SPR was recorded for Naracoorte and Lucindale (an SPR of 121**, 603 participants), followed by Grant (118**, 597), Wattle Range - West (114**, 693) and - East (111, 231), and Tatiara (113**, 478). In Mount Gambier, there were 1,529 participants (109**).

In **Riverland**, there were nine per cent more participants than expected from the State rates, an SPR of 109** (2,412 participants). SLAs with the most highly elevated ratios were Renmark Paringa - Paringa (123**, 165), Loxton Waikerie - West (115**, 365), and Berri and Barmera - Berri (112*, 467) and - Barmera (108, 340).

Eyre also had an SPR of 109** (2,341 participants), with almost all SLAs mapped in the highest range. There was a highly elevated ratio in Unincorporated West Coast (an SPR of 151*, 36 participants), with other elevated ratios in Lower Eyre Peninsula (117**, 336), Port Lincoln (110**, 927), Streaky Bay (108, 126), Cleve (108, 142), Le Hunte (107, 90), Tumby Bay (105, 224) and Kimba (105, 86).

The SPR in **Mid North** was 102** (10,874 participants) with elevated ratios in Barunga West (an SPR of 124**, 284 participants), Northern Areas (115**, 400) and Port Pirie Balance (112, 275). In Port Pirie - City, 1,095 women participated in breast screening (an SPR of 106). Fewer women than expected were screened in Unincorporated Pirie (an SPR of 91, 15 participants) and Mount Remarkable (92, 218).

In **Wakefield**, there were 7,482 participants (an SPR of 105**). SLAs in this region with the highest participation ratios were Barossa - Tanunda (an SPR of 119**, 360 participants), Yorke Peninsula - North (117**, 807), Barossa - Angaston (117**, 601), Clare and Gilbert Valleys (116**, 720) and Copper Coast (111**, 1,100). There were 1,183 participants in Gawler (an SPR of 96). Mallala (an SPR of 82**, 347 participants) and Wakefield (92, 417) had fewer participants than expected.

There were 8,811 participants in **Hills Mallee Southern** (an SPR of 104**), with elevated ratios in Victor Harbor (an SPR of 120**, 1,319 participants), Southern Mallee (an SPR of 109, 166) and Murray Bridge (107*, 1,276). Large numbers of women participated in screening in Alexandrina - Coastal (975 participants, an SPR of 104), Mid Murray (729, 102) and Alexandrina - Strathalbyn (671, 100). Fewer participants than expected were recorded in the SLAs of Mount Barker Balance (83**, 472) and Karoonda East Murray (an SPR of 96, 87 women).

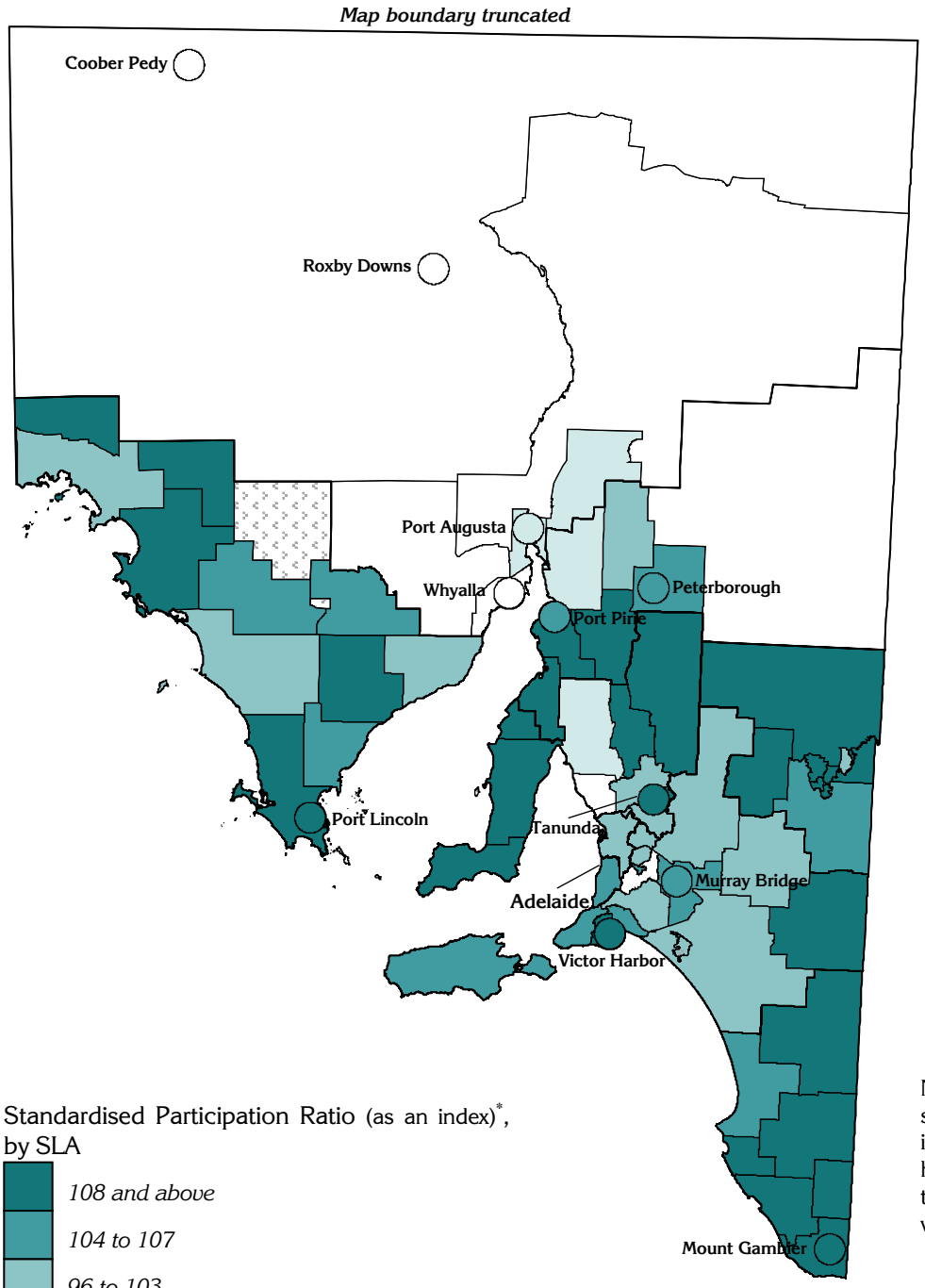
Northern and Far Western was the only region with fewer participants than expected (an SPR of 86**, 2,595) with all SLAs within the region having low ratios. Unincorporated Far North had half the expected number of participants (an SPR of 52**, 116 participants) followed by Unincorporated Flinders Ranges (65*, 36), Coober Pedy (75**, 123) and Unincorporated Whyalla (81, 19 participants). Participation in Whyalla was recorded as being 13% lower than expected (an SPR of 87, 1,301): however, BreastScreen SA has indicated that there is relatively high participation in Whyalla through the mobile unit, which visited this SLA outside of the time frame included here.

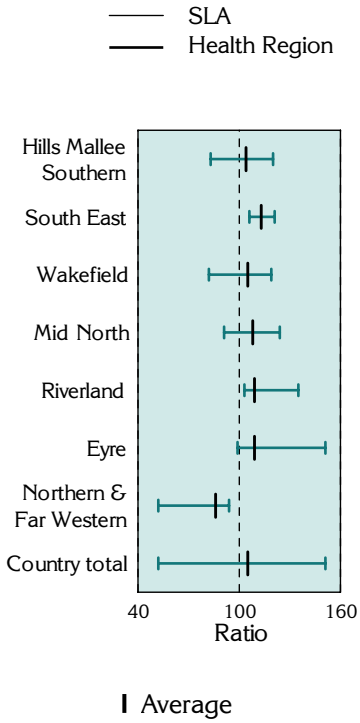
ASGC Remoteness Classification

Participation increases across the remoteness areas, from a standardised participation ratio of 98** in Major Cities, up to 107** in the Remote areas. Women in the Very Remote areas had the lowest SPR of 86**.

* indicates statistical significance: see page 24

Map 7.12
Breast screening participation, females aged 50 to 69 years, South Australia, 2001 to 2002





Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

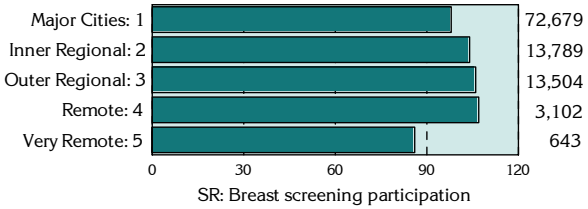
Standardised Participation Ratio (as an index)*, by SLA

- *108 and above*
- *104 to 107*
- *96 to 103*
- *92 to 95*
- *below 92*
- *data not mapped#*

*Index shows the number of women in the SLA having a breast screen compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100

ASGC Remoteness classification Women



Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Breast screening outcomes, females aged 50 to 69 years: cancer, 2001 to 2002

In South Australia, over the two years 2001 and 2002, 659 women were diagnosed with breast cancer following screenings undertaken through the BreastScreen SA program (Table 7.14). The rate of cancer diagnosis was higher in Metropolitan Adelaide (636.6 per 100,000) than in country South Australia (632.8).

Table 7.14: Breast screening outcomes: cancer, 2001 to 2002
Age standardised rate per 100,000 females aged 50 to 69 years

Section of State	No.	Rate
Metropolitan Adelaide (incl. Gawler)	475	636.6
Country	184	632.8
South Australia	659	635.0

Metropolitan regions

In 2001 to 2002, 464 women in the metropolitan regions (excluding Gawler) aged 50 to 69 years were diagnosed with breast cancer as a result of screening, two per cent more than expected from the State rates (a standardised ratio (SR) of 100). The most highly elevated ratios were in SLAs in the inner and outer north, and the inner and outer south and south-west (Map 7.13). There was no consistent relationship in the correlation analysis at the SLA level between cancer detected through screening and socioeconomic status (Table 8.1).

Central Northern Adelaide

In Central Northern, 318 women were diagnosed with breast cancer following screening (an SR of 100). Despite having the expected number for the region's population size and structure, there was considerable variation between SLAs, with highly elevated SRs in Unley - West (an SR of 214**, 14 women) and - East (173*, 14) (see graph opposite). The remaining SLAs in the region did not have statistically significant SRs. Other SLAs with high SRs included Salisbury - North-East (an SR of 147, 14) and - South-East (129, 20), Walkerville (146, five), Prospect (138, nine), Playford - Elizabeth (127, 13), Adelaide Hills - Ranges (118, five) and Port Adelaide Enfield - Port (118, eleven).

Tea Tree Gully - South (14 women, an SR of 90) and - Central (13, 109), Port Adelaide Enfield - Coast (14, 108) and West Torrens - West (13, 98), each had higher numbers of women diagnosed with breast cancer through screening, although none of the ratios were statistically significant.

Campbelltown - East had half the expected number of women diagnosed with breast cancer (an SR of 53*, seven women). Other SLAs with low SRs included Burnside - South-West (an SR of 66, six women), Salisbury - Central (72, six), Norwood Payneham St Peters - West (76, five), Charles Sturt - Coastal (82, 14), Campbelltown - West (83, eight), Tea Tree Gully - North (86, seven) and West Torrens - East (89, eight).

Southern Adelaide

In Southern, 146 women were diagnosed with cancer through breast screening (an SR of 100). There was also considerable variation in Southern, with Onkaparinga - Hills having two-thirds more women diagnosed with cancer than expected from the State rate (an SR of 167, ten women), followed by Holdfast Bay - South (159, 12), Mitcham - North-East (128, nine), Onkaparinga - Morphett (124, 12) and - North Coast (123, eleven), Marion - South (117, nine), Onkaparinga - Woodcroft (109, 15) and - South Coast (105, ten), and Holdfast Bay - North (106, nine). None of these SRs were statistically significant.

Mitcham - Hills had less than half the expected number of women diagnosed with breast cancer (an SR of 42*, six women). Other SLAs with low SRs included Onkaparinga - Reservoir (67, seven), Marion - North (81, nine) and - Central (85, 15), and Mitcham - West (86, eight).

Country South Australia (not mapped)

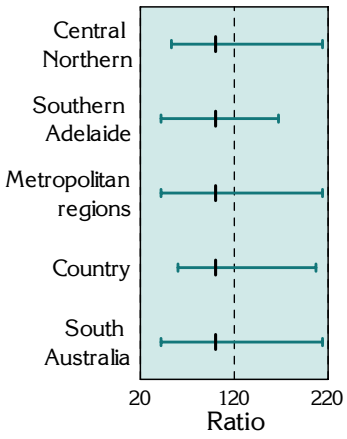
In country South Australia, 195 women were diagnosed with breast cancer through screening (an SR of 100). The highest ratio of 123 was recorded for **Riverland** and the lowest, for **Mid North** (79). None of the regional totals were statistically significant (Table 7.15).

Table 7.15: Regional totals, breast screening outcome: cancer, 2001 to 2002

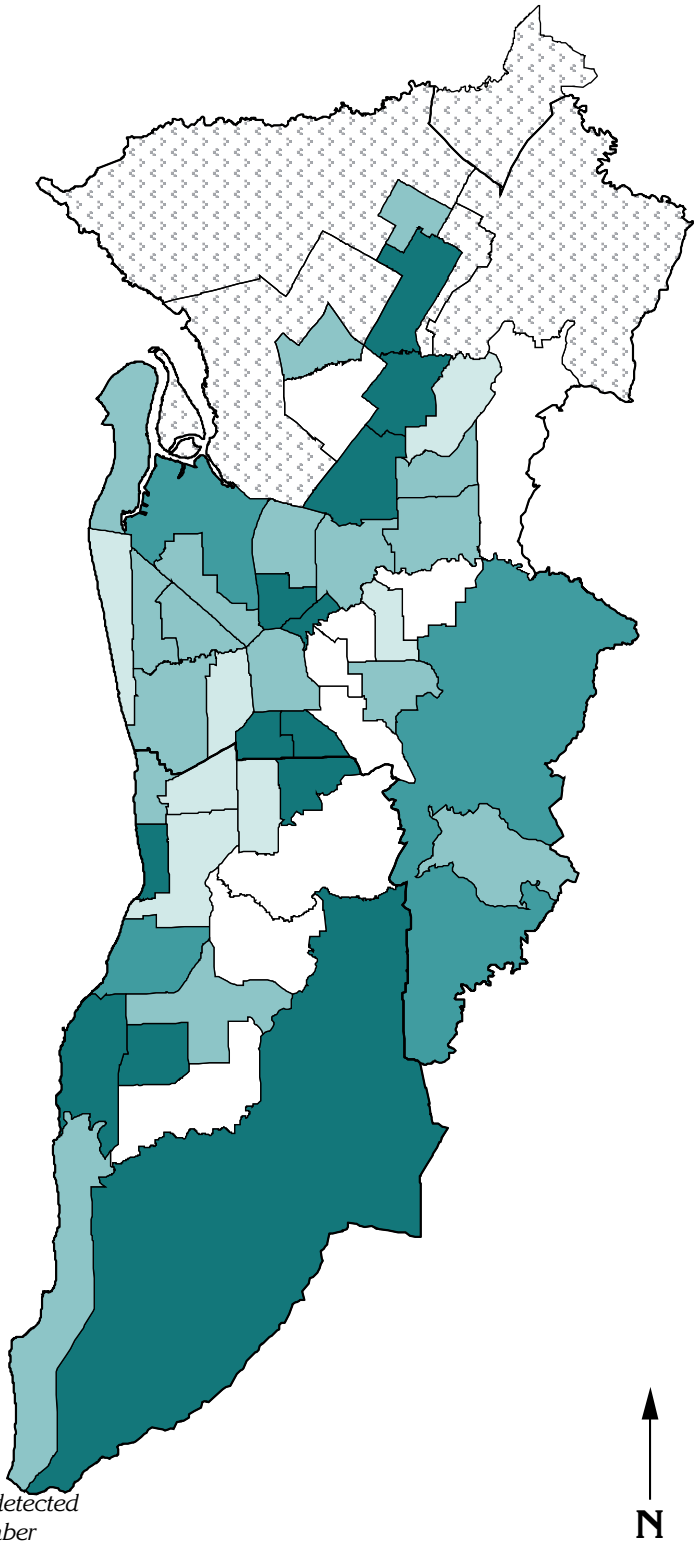
Region	No.	SR
Hills Mallee Southern	66	116
Wakefield[1]	43	90
South East	25	88
Northern & Far Western	16	99
Eyre	13	88
Mid North	13	79
Riverland	19	123
Country SA	**195**	**100**
Central Northern	318	100
Southern	146	100
Metropolitan regions	**464**	**100**
South Australia	**659**	**100**

[1]**Gawler is included in the Wakefield region**

Map 7.13
Breast screening outcomes, females aged 50 to 69 years: cancer, metropolitan regions, 2001 to 2002



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index) *, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped*#

*Index shows the number of women in the SLA who were detected with cancer from a breast screen compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide) or in areas with fewer than five cases: Gawler has not been mapped

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Cervical screening participation, 2001 to 2002

Cervical cancer is one of the most preventable and curable cancers. It is the eighteenth most frequent cause of cancer deaths in Australian women; and it is estimated that up to 90% of the commonest type of cervical cancer may be prevented, if cell changes are detected and treated early (AIHW 2003). In 1991, Australia adopted an 'organised approach' to preventing cervical cancer, the National Cervical Screening Program, which recommends and encourages women under 70 years of age who have ever been sexually active to have Pap smears every two years. The key objectives of the Program are to reduce mortality and minimise morbidity from these cancers, and to maximise the efficiency of program delivery and its equity.

Data were provided by the South Australian Cervix Screening Program for women screened in 2001 or 2002 (each woman was counted only once in this two-year period). The data presented are for women aged 20 to 69 years; the denominator population has been adjusted to reflect variations between age groups in hysterectomy rates. The participation rate was similar in both metropolitan and country areas, with an overall rate of 64,597 per 100,000 females aged 20 to 69 years (Table 7.16). Details of the outcomes of cervical screening are shown from page 350, and the number of women participating in such screening is shown in Table 7.21, on page 352.

Table 7.16: Cervical screening participation, 2001 to 2002

Age standardised rate per 100,000 females aged 20 to 69 years

Section of State	No.	Rate
Metropolitan Adelaide (incl. Gawler)	199,557	64,739
Country	67,051	64,189
South Australia	266,634	64,597

Metropolitan regions

The majority of women attending for screening were aged between 20 and 55 years of age (Table 7.21). In 2001 to 2002, 196,432 women participated in cervical screening (an SPR of 100).

The most highly elevated standardised participation ratios (SPRs) were in SLAs covering the city centre and much of the region to the east, south and south-east. Low ratios were found in the outer north, north-west and some outer southern SLAs (Map 7.14). The correlation analysis shows a very strong association between high rates of cervical screening and indicators of socioeconomic advantage, including a very strong positive association with the Index of Relative Socio-Economic Disadvantage. These results suggest an association at the SLA level between socioeconomic advantage and participation in cervical screening (Table 8.1).

Central Northern Adelaide

The SPR for Central Northern (excluding Gawler) was close to average, being one per cent lower than expected from the State rates (an SPR of 99**, 136,931 women). The SLA of Adelaide had the most highly elevated ratio, with nearly one third more women participating in cervical screening than expected (an SPR of 130**, 3,214 women). Other SLAs with elevated ratios included Adelaide Hills - Central (an SPR of 118**, 2,845 women), Walkerville (116**, 1,400), Unley - East (115**, 4,229) and - West (109**, 3,574), Burnside - North-East (114**, 4,317) and - South-West (111**, 4,091), Adelaide Hills - Ranges (110**, 2,068) and Norwood Payneham St Peters - West (107**, 3,733). Large numbers of women in Salisbury - South-East (6,446 women, an SPR of 101), Charles Sturt - Coastal (5,795, 102), Campbelltown - East (5,314, 103*), and Tea Tree Gully - Central (5,217, 104), - South (6,275, 104*) and - North (5,196, 101) participated in cervical screening.

The lowest SPRs in Central Northern were recorded throughout Playford, with the lowest in Playford - Elizabeth (an SPR of 80**, 3,360 women), followed by - East Central (83**, 2,851), - West Central (84**, 1,797), - West (87**, 1,248) and - Hills (89**, 463). Port Adelaide Enfield - Inner (89**, 2,915) also had a low participation ratio.

Southern Adelaide

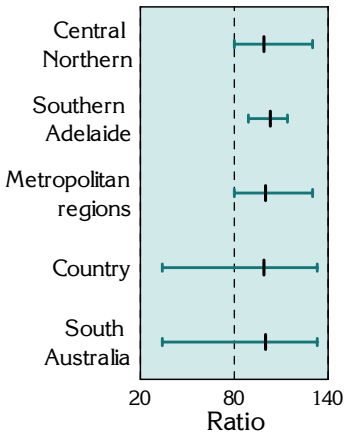
The participation rate in Southern was three per cent higher than expected from the State rates, an SPR of 103** (59,501 women). Elevated ratios were mapped in the SLAs of Mitcham - Hills (an SPR of 114**, 4,979 women), Onkaparinga - Reservoir (111**, 5,099) and - Hills (111**, 2,126), Marion - South (109**, 4,126), Mitcham - North-East (107**, 2,900), and Holdfast Bay - North (107**, 3,523) and - South (107**, 2,666).

Large numbers of women participating in screening lived in Onkaparinga - Woodcroft (6,534 women, an SPR of 101) and Marion - Central (5,941, 102).

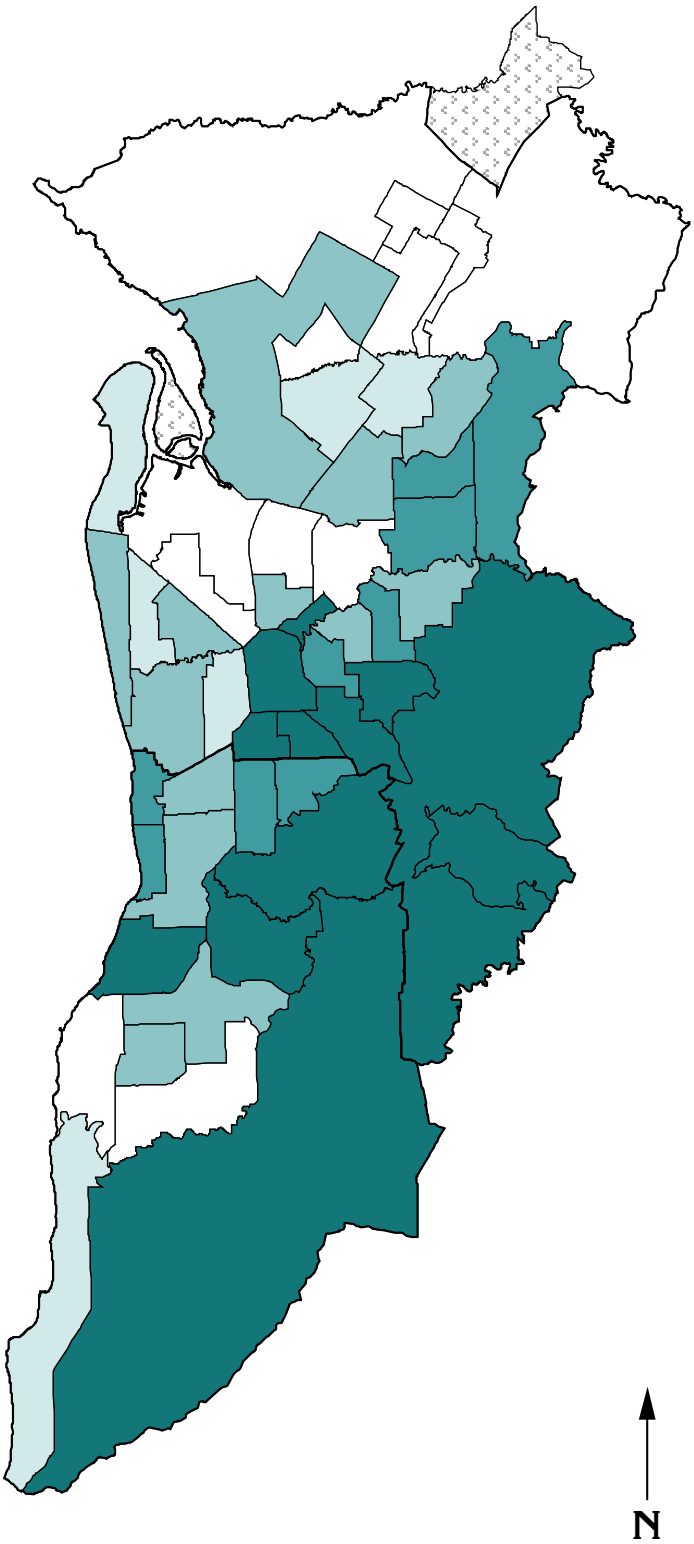
The lowest participation ratios were mapped in the Onkaparinga SLAs of - Hackham (an SPR of 89**, 2,268 women), - North Coast (91**, 2,758), - South Coast (92**, 3,852) and - Morphett (96*, 4,283).

* **indicates statistical significance: see page 24**

Map 7.14
Cervical screening participation, females aged 20 to 69 years, metropolitan regions, 2001 to 2002



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Participation Ratio (as an index) *
by SLA

- *108 and above*
- *104 to 107*
- *96 to 103*
- *92 to 95*
- *below 92*
- *data not mapped#*

*Index shows the number of women in the SLA undergoing screening compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has been mapped in the State map

Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

Some 70,176 women in country South Australia aged 20 to 69 years participated in cervical screening over 2001 and 2002 (a standardised participation ratio (SPR) of 99). The majority of regions had marginally elevated ratios. The lowest SPR, of 83**, was in **Northern and Far Western**; however, this participation rate (and that in the Very Remote areas) are considered to under-estimate participation due to use of services in the Northern Territory by South Australian residents. In addition, hysterectomy rates in the region are believed to be high, and women who have undergone a hysterectomy do not require screening.

Table 7.17: Regional totals, Cervical screening participation, 2001 to 2002

Region	No.	SPR
Hills Mallee Southern	19,223	101
Wakefield[1]	16,445	100
South East	10,897	103**
Northern & Far Western	7,087	83**
Eyre	5,948	107**
Mid North	4,650	92**
Riverland	5,926	107**
Country SA	**70,176**	**99**
Central Northern	136,931	99**
Southern	59,501	103**
Metropolitan regions	**196,432**	**100**
South Australia	**266,634**	**100**

[1]**Gawler is included in the Wakefield region**

There is a weak correlation at the SLA level in country South Australia between high rates of participation in cervical screening and socioeconomic advantage (Table 8.2).

The Regions

Eyre had the highest SPR, with a seven per cent higher rate of participation in cervical screening than expected from the State rates (an SPR of 107**, 5,948 women). Other elevated ratios were evident for Kimba (an SPR of 133**, 252 women), Cleve (119**, 352), Unincorporated West Coast (113, 113) and Streaky Bay (112*, 348). A large number of women from Port Lincoln participated in screening (2,485 women, an SPR of 106**). Tumby Bay had a lower participation rate than expected (an SPR of 93, 383 women).

The **Riverland** also had an SPR of 107** (5,926 women), with elevated ratios in Berri and Barmera - Barmera (114**, 800) and - Berri (109**, 1,304), and Renmark Paringa - Paringa (112**, 337). A large number of women in Renmark Paringa - Renmark were screened (1,430, 105). Loxton Waikerie - West was the only SLA with fewer women participating than expected (an SPR of 99, 754 women).

South East had a three per cent higher rate of participation in cervical screening than expected (an SPR of 103**, 10,897 women). Elevated ratios were calculated for Wattle Range - East (an SPR of 110*, 600 women) and Mount Gambier (109**, 4,463). Large numbers of women were screened in Naracoorte and Lucindale (1,471 women, an SPR of 106*) and Wattle Range - West (1,454, 96). There were fewer women participating in screening than expected in Grant (an SPR of 87**, 1,128).

Hills Mallee Southern had an SPR elevated by just one per cent (101, 19,223 women). The SLAs of Southern Mallee (an SPR of 111*, 390 women) and Mount Barker - Central (110**, 3,112) both had elevated SPRs. Murray Bridge (2,830 women, an SPR of 100) and Victor Harbor (1,783, 102) recorded large numbers of women participating in screening. Fewer women than expected from Karoonda East Murray (an SPR of 91, 178 women) and Yankalilla (an SPR of 94, 622) participated in screening.

In **Wakefield**, 16,445 women participated in screening, an SPR of 100. Elevated ratios were recorded in the SLAs of Barossa - Tanunda (an SPR of 122**, 923 women) and - Angaston (120**, 1,544 women), and Clare and Gilbert Valleys (110**, 1,547). A large number of women from Gawler (3,125 women, 99) participated in cervical screening. Fewer women than expected participated in screening in Mallala (an SPR of 85**, 1,123 women) and Wakefield (88**, 916).

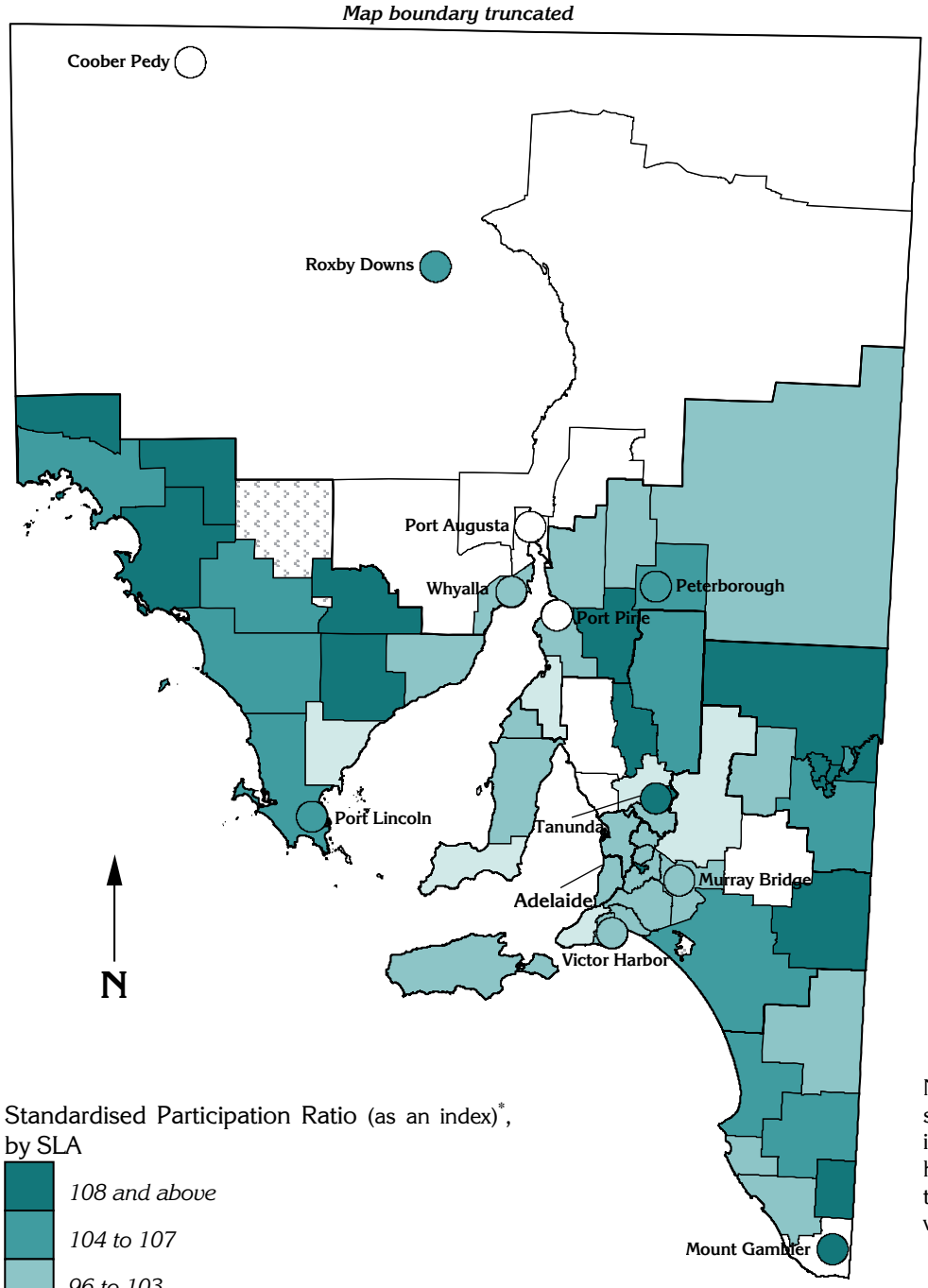
Mid North had eight per cent fewer women who participated than expected (an SPR of 92**, 4,650 women), with elevated ratios in Northern Areas (108*, 823) and Peterborough (an SPR of 107, 340). Both Port Pirie Balance (558 women, an SPR of 101) and Mount Remarkable (472 women, 98) had large numbers of women who participated in screening. Low ratios were recorded in Port Pirie - City (an SPR of 80**, 1,891 women) and Barunga West (92, 375).

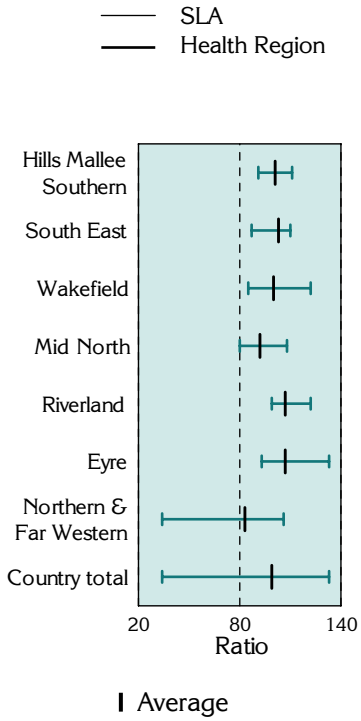
Northern and Far Western had the lowest regional participation rate, with 17% fewer women screened than expected (an SPR of 83**, 7,087 women). Roxby Downs was the only SLA in this region with an elevated SPR (106, 643 women). Whyalla had 3,602 residents who participated in screening (an SPR of 96*). Unincorporated Far North had the lowest SPR, at one third the expected level (an SPR of 34**, 314 women), followed by Unincorporated Flinders Ranges (74**, 166), Flinders Ranges (75**, 219), Port Augusta (77**, 1,796), Coober Pedy (81**, 317) and Unincorporated Whyalla (85, 29).

The AGSC remoteness data are on page 352.

* **indicates statistical significance: see page 24**

Map 7.15
Cervical screening participation, females aged 20 to 69 years, South Australia, 2001 to 2002





Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

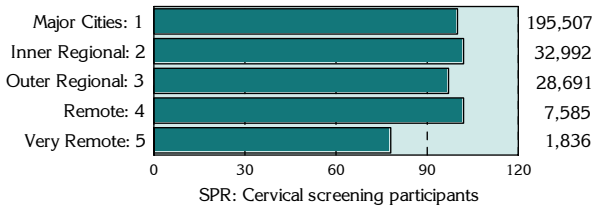
Standardised Participation Ratio (as an index)*, by SLA

- *108 and above*
- *104 to 107*
- *96 to 103*
- *92 to 95*
- *below 92*
- *data not mapped#*

*Index shows the number of women in the SLA having a cervical screen compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100

ASGC Remoteness classification Women



Source: See data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Cervical screening outcomes, 2001 to 2002

Changes in cervical cells are often repaired naturally by the body and rarely lead to cancer. Detection of an abnormality through pap smears is different to the detection of cancer, where abnormalities are often treatable or will heal on their own. Following detection of an abnormality, the course of action is usually to monitor any changes through more frequent pap smears (rather than the usual once every two years). When the abnormality is repaired, biennial screening can be resumed (SHine SA 2005).

Pathological results of cervical screening undertaken over 2001 and 2002 were reported as normal (94.9%), cancerous (less than 0.1%), high grade abnormality (0.6%, either definite or possible), low grade abnormality (3.2%, either definite or possible) or unsatisfactory and further assessment required (1.3%). Of the high grade abnormalities, over half were assessed as being definite abnormalities (58.3%, 1,032 women), the remainder were assessed as possible abnormalities (41.7%, 737 women). Over one third of low grade abnormalities were assessed as being definite low grade abnormalities (38.0%, 3,472 women) and nearly two thirds were assessed as possible (62.0%, 5,671 women). The data shown in the following pages are for the outcomes assessed as either high (with possible and definite abnormalities grouped) or low (with possible and definite abnormalities grouped).

Rates of high grade and low grade abnormalities detected for women in Metropolitan Adelaide and country South Australia were increased in each case in Metropolitan Adelaide (Table 7.18).

Table 7.18: Cervical screening outcomes: high grade abnormality and low grade abnormality, 2001 to 2002

Age standardised rate per 100,000 females aged 20 to 69 years

Section of State	High grade abnormality		Low grade abnormality	
	No.	Rate	No.	Rate
Metropolitan Adelaide (incl. Gawler)	1,292	641.2	6,263	3,099
Country	391	600.6	1,842	2,855
South Australia	1,683	631.2	8,105	3,040

High grade abnormality

Metropolitan regions

In 2001 and 2002, 1,273 women in the metropolitan regions (excluding Gawler) were assessed as having a high grade abnormality, a standardised ratio (SR) of 102.

SLAs with elevated ratios (Map 7.16a) generally followed the pattern of socioeconomic disadvantage shown in the maps in Chapters 4 and 5. Southern region (with an SR of 107) had a higher ratio than Central Northern (99), although neither ratio was statistically significant (Table 7.19).

The correlation analysis showed a strong association between high rates of high grade abnormalities and many of the indicators of socioeconomic disadvantage, including unemployment; jobless, low income and single parent families; people receiving an unemployment benefit, disability support pensioners and female sole parent pensioners; clients of community mental health services (both adult and CAMHS) and the Department for Families and Communities; poor pregnancy outcomes; attendance at Accident and Emergency and outpatient departments of public acute hospitals; female premature deaths, dwellings rented from the SA Housing Trust; children in welfare-dependent and other low income families; and Aboriginal and Torres Strait Islander people. These results, together with a strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between socioeconomic disadvantage and elevated rates of high grade cervical abnormalities (Table 8.1).

Central Northern Adelaide

In Central Northern, 875 women were assessed as having a high grade abnormality (an SR of 99). Elevated ratios were mapped in the SLAs of Port Adelaide Enfield - Coast (an SR of 155**, 45 women) and - Inner (144, 28); Playford - Elizabeth (151*, 34), - West Central (141, 18), - West (110, nine) and - East Central (123, 24); Unley - West (138, 33); Charles Sturt - Coastal (116, 40); Norwood Payneham St Peters - East (115, 21); and Salisbury Balance (111, eight) and - Inner North (110, 31).

Large numbers of women living in Tea Tree Gully - South (37 women, an SR of 94), West Torrens - West (34 women, 107), Port Adelaide Enfield - East (33 women, 106) and Salisbury - Central (31 women, 102) were assessed as having a high grade abnormality.

A large number of SLAs in the region had fewer women assessed as having a high grade abnormality than expected, although none of the SRs were statistically significant.

* **indicates statistical significance: see page 24**

The lowest ratio was recorded for Adelaide Hills - Ranges (an SR of 54, six women), followed by Norwood Payneham St Peters - West (an SR of 70, 18), Tea Tree Gully - Hills (70, eleven), Adelaide Hills - Central (74, 12), Campbelltown - West (74, 16) and - East (74, 24), Salisbury - North-East (81, 20), Tea Tree Gully - Central (82, 27) and - North (82, 28), and Burnside - South-West (84, 21).

Southern Adelaide

Southern region had seven per cent more women assessed as having a high grade abnormality than expected, an SR of 107 (397 women). A number of SLAs had highly elevated ratios, including Onkaparinga - South Coast (an SR of 161**, 40 women) and - North-Coast (159*, 27), and Marion - Central (137*, 50).

The SLA of Onkaparinga - Woodcroft had 39 women assessed as having a high grade abnormality (an SR of 94).

Fewer women than expected were assessed as having high grade abnormalities in the SLAs of Marion - South (an SR of 77, 20 women), Onkaparinga - Hills (83, ten women) and - Reservoir (84, 26), and Holdfast Bay - South (86, 14) and - North (87, 20).

Country South Australia (not mapped)

Country South Australia had a lower rate than expected of women who were assessed as having a high grade abnormality through cervical screening, with an SR of 95 (410 women); neither this ratio nor any of the regional ratios were statistically significant, in part reflecting the small numbers of cases in country South Australia.

The majority of country regions also had ratios below 100, with those that were elevated being only marginally so. The lowest SR of 78, was recorded for **Eyre** (29 women): and the highest SR of 107, was in **Northern and Far Western** (50 women) (Table 7.19).

Table 7.19: Regional totals, cervical screening outcomes: high grade abnormality, 2001 to 2002

Region	No.	SR
Hills Mallee Southern	110	96
Wakefield[1]	86	88
South East	72	104
Northern & Far Western	50	107
Eyre	29	78
Mid North	29	106
Riverland	34	92
Country SA	**410**	**95**
Central Northern	875	99
Southern	397	107
Metropolitan regions	**1,273**	**102**
South Australia	**1,683**	**100**

[1]**Gawler is included in the Wakefield region**

The data were not mapped, because of the small numbers of cases; the only SLA with a ratio of statistical significance was Robe, with an SR of 357**, for five women (Table 8.2).

Low grade abnormality

Metropolitan regions

In 2001 and 2002, 6,170 women in the metropolitan regions (excluding Gawler) were assessed as having a low grade abnormality, an SR of 102.

The geographic distribution of ratios across SLAs is somewhat different to that for high grade abnormalities, with the highest rates exclusively in the south-west and outer south (Map 7.16b). There was no consistent relationship between high rates of low grade abnormalities and socioeconomic status apparent from the correlation analysis. This is due, in part, to the small number of cases at the SLA level (Table 8.1).

Central Northern Adelaide

There were 4,199 women assessed as having a low grade abnormality in Central Northern, two per cent more than expected from the State rates, an SR of 102. Elevated ratios were mapped in the SLAs of Unley - West (an SR of 121*, 140 women); Adelaide (112, 138); West Torrens - East (an SR of 111, 152 women) and - West (108, 164); Tea Tree Gully - Hills (109, 82) and - Central (107, 172); Port Adelaide Enfield - Inner (an SR of 109, 100) and - East (107, 160); and Campbelltown - West (107, 112).

Large numbers of female residents diagnosed as having an abnormality were recorded in the SLAs of Salisbury - South-East (192 women, an SR of 98) and - Central (140, 96); Tea Tree Gully - South (184 women, 97) and - North (147, 91); Charles Sturt - Coastal (157, 93); and Campbelltown - East (151, 98).

Low SRs were mapped in the Playford SLAs of - West (an SR of 57**, 21 women), - Hills (78, 12) and - East Central (an SR of 82, 75); Salisbury Balance (80, 27); Adelaide Hills - Central (88, 73) and - Ranges (88, 53); and Burnside - South-West (89, 108).

Southern Adelaide

In Southern, nine per cent more women were diagnosed as having a low grade abnormality than expected from the State rates, an SR of 109** (1,970 women). Elevated SRs were recorded for Onkaparinga - South Coast (an SR of 131**, 152 women), - North Coast (123*, 104) and - Reservoir (118*, 182); Holdfast Bay - South (124*, 100) and - North (120*, 133); and Marion - Central (121**, 216) and - North (an SR of 116, 160).

Large numbers of women assessed as having a low grade abnormality were also recorded in the SLAs of Onkaparinga - Woodcroft (220 women, an SR of 108) and Mitcham - West (129 women, 104).

Fewer than expected low grade abnormalities following screening were found in women for the SLAs of Marion - South (an SR of 75**, 95 women), Onkaparinga - Morphett (93, 128), and Mitcham - Hills (93, 128) and - North-East (93, 80).

Country South Australia (not mapped)

The majority of regions in country South Australia had fewer women assessed as having a low grade abnormality than expected from the State rates. Overall, the SR was 94**, representing 1,936 women with low grade abnormalities. The only elevated SR, of 114*, was recorded for **South East** (378 women); in contrast, **Mid North** had a very low SR of 53** (69 women).

Table 7.20: Regional totals, cervical screening outcomes: low grade abnormality, 2001 to 2002

Region	No.	SR
Hills Mallee Southern	541	99
Wakefield[1]	428	91
South East	378	114*
Northern & Far Western	213	96
Eyre	153	86
Mid North	69	53**
Riverland	154	87
Country SA	**1,936**	**94****
Central Northern	4,199	102
Southern	1,970	109**
Metropolitan regions	**6,170**	**102**
South Australia	**8,105**	**100**

[1]**Gawler is included in the Wakefield region**

The data were not mapped for country South Australia, because of the small numbers of cases recorded for the majority of SLAs. However, Yankalilla (with an SR of 163*, 27 women), Naracoorte and Lucindale (145**, 63) and Mount Gambier (119*, 165) all had elevated ratios of statistical significance. Ratios of statistical significance, and fewer cases than expected, were recorded for Northern Areas (an SR of 37**, nine women), Yorke Peninsula - North (41**, 12), Port Pirie - City (51**, 29), Copper Coast (59**, 28), and Loxton Waikerie - East (63*, 23).

* **indicates statistical significance: see page 24**

Continued from page 346

Table 7.21: Age of women attending for cervical screening, South Australia, 2001 to 2002

Age (yrs)	No.	Per cent
15-19[1]	10,331	3.6
20-24	25,393	9.0
25-29	30,583	10.8
30-34	35,950	12.7
35-39	36,423	12.9
40-44	36,006	12.7
45-49	31,076	11.0
50-54	26,587	9.4
55-59	19,597	6.9
60-64	14,425	5.1
65-69	10,594	3.7
70+	6,240	2.2
Total	**283,205**	**100**

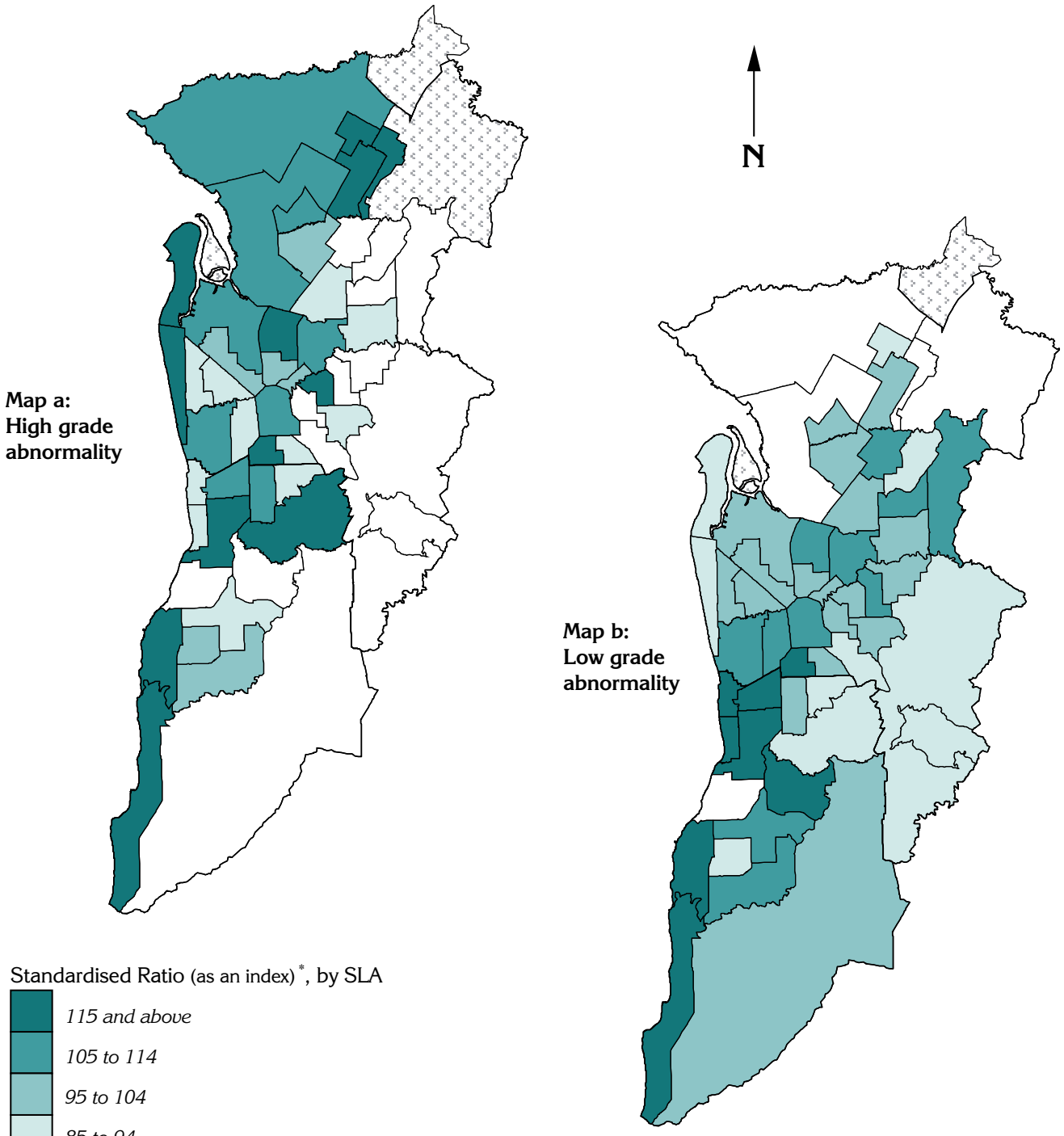
[1]**Includes 80 young women under 15 years of age**

Continued from page 348

ASGC Remoteness Classification

Cervical screening participation rates in the ASGC areas were close to 100, other than for the Very Remote areas, which had a much lower SPR, with 22.0% fewer women participating than expected from the State rates (an SPR of 78**). The notes on page 348 as to the reason for these very low ratios are relevant.

Map 7.16
Cervical screening outcomes, females aged 20 to 69 years, metropolitan regions, 2001 to 2002



*Index shows the number of women in the SLA who were detected with high grade or low grade abnormalities on cervical screening compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped for Torrens Island (mapped with Port Adelaide): Gawler has not been mapped

Source: See data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

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Medical services

Introduction

The intention of this and the previous section (on community-based services) is to provide information on services provided in what are generically called 'ambulatory care' settings. This terminology includes patients seen in hospital outpatient and Accident and Emergency departments (but not admitted), as well as by general and specialist medical practitioners in their practices.

The areas covered in this section are services by general medical practitioners (GPs) and specialist medical practitioners (including those in public acute hospitals), and attendances at Accident and Emergency departments (A & E) and outpatient departments of public acute hospitals. Data are also provided on the supply of GPs.

General medical practitioner services

GPs comprise the largest group of health professionals providing primary health care services in South Australia, with 7.7 million services provided under Medicare in 2002/2003. GPs are frequently the first point of contact with the health care system for the approximately 80% of the population who visit them each year (HIC 2005). As such, they are a significant group of providers of health care.

In addition, some people attending A & E departments in major public acute hospitals receive primary care services of a kind that could be provided by a GP: these are discussed below.

Data for the number of services by GPs funded through Medicare were provided by the Health Insurance Commission (HIC): they also include services for veterans or their dependants, who qualify for benefits under the Department of Veterans' Affairs' National Treatment Account.

Accident and Emergency departments

Details of the number of A & E attendances were provided from the Open Architecture Clinical Information System (Oacis) by postcode of usual residence, age and sex for public acute hospitals in Metropolitan Adelaide; Modbury Hospital is not included. The number of A & E attendances recorded in the Oacis database for Metropolitan Adelaide was 296,925, close to the total reported in the Monthly Management Summary System of 301,106.

The data required for analysis and mapping of country hospitals were not available.

Outpatient department and specialist medical practitioner services

Specialist medical practitioners are also major providers of health care, providing services both in the community (working in a private capacity) and in outpatient departments of public acute hospitals[2]. Specialist practitioner services under Medicare accounted for some 1.9 million services in 2002/2003 (HIC 2003); and those provided in outpatient departments of public acute hospitals accounted for approximately 1.0 million occasions of service in 2002/2003. Specialist services that qualify for benefits under the Department of Veterans' Affairs' National Treatment Account have been included in the data in this section.

In outpatient departments, specialist services are predominantly provided by practitioners acting as agents of (and paid by) the hospital; a small proportion, however, are 'privately' provided, and funded under Medicare (as described above). To avoid double-counting of these privately provided services, the HIC were asked to supply data only for specialist services provided outside a hospital. This also ensured that specialist services provided to inpatients were excluded.

Many other services are provided in outpatient departments of public acute hospitals: these include services by health professionals such as physiotherapists, occupational therapists and social workers (together referred to as 'allied health professionals'); as well as a range of medical specialties including pathology and radiology.

These data have been presented in two ways: one describes the geographic distribution of outpatient department attendances (to allied health professionals and specialist medical practitioners), and the other describes the geographic distribution of all specialist medical consultations, both in outpatient departments and outside a hospital.

The outpatient data were obtained from Oacis, as that is the only source of data of the kind required for analysis and mapping (that is, the postcode of address and age of the person attending outpatients is known). However, there are major limitations in the coverage of these clinics, in addition to the lack of data for Modbury Hospital and country hospitals – see *Data limitations*, below.

[2] Specialist medical services provided in a clinic associated with a private hospital would be billed by the practitioner (not the hospital) and are included in the Medicare data.

General medical practitioners

There has been considerable interest in the supply of GPs, and in particular, the historically low levels of provision in many country areas. With the overall ageing of the medical workforce, supply issues have become more acute in other areas that had not in the past been seen as under-supplied. For example, concern has been expressed at the relatively low levels of supply of GPs in the Southern region of Metropolitan Adelaide, and the impact on A & E services and hospital admissions. The effect on admissions can arise from a lack of adequate access by a patient to a GP for advice, or early management of an illness or condition. The effect on A & E departments can be broadly classified as issues of accessibility, and include the hours at which GPs are available and their cost.

The particular measure of the supply of GPs in this analysis is the full-time workload equivalent (FWE). This value is calculated for each GP location by dividing the GPs' total Medicare and DVA billing (Schedule fee value of services provided during the reference period) by the mean billing of full-time doctors in that derived major specialty for the Reference Period. Thus, a GP earning 20% more than the mean billing of full-time doctors is shown as 1.2 FWE: this differs from full-time equivalent (FTE) counts, where the FTE value of any GP cannot exceed 1.0.

FWEs are shown for the SLA of the location of the practice from which the service was provided. This is possible because practitioners have a provider number, with a separate number for each physical practice location.

Data limitations

General medical practitioner services

The following analysis for GP services uses Medicare statistics for the year 2002/2003. The data include services provided at a surgery or clinic, at the patient's home, or in selected institutions (hostel, nursing home, etc).

GP-type services not covered by Medicare are not available. These are mainly attendances at Accident and Emergency departments of public acute hospitals for GP type services (see comment above as to the likely number of these services) and medical services provided by private companies (e.g. mining companies), the Defence Forces and the Royal Flying Doctor Service (RFDS).

In the past, GP services at some community health services and Aboriginal Health Services were not billed through HIC and therefore not included in Medicare statistics: the number of these services is now very small. The exclusion of such services is unlikely to change the spatial patterns of distribution evident in the maps.

Outpatient department data

Although the data from Oacis provide information of the kind required for the analysis and mapping of outpatients – postcode of usual residence, age and sex – its coverage is incomplete and varies between hospitals. An estimate of the under-count in Oacis can be made by comparing the Oacis totals with those from the Monthly Management Summary System (MMSS), which provides a more complete count of activity in outpatient departments. Overall, Oacis has 30.9% fewer records, with the largest shortfalls at Flinders Medical Centre and the Women's and Children's Hospital (Table 7.22).

The data used in the two topics on pages 372 to 373 and from 374 have been inflated to represent 100% of the MMSS figures, to enable comparisons to be made between the data for specialist medical practitioner consultations in outpatient departments and private specialist consultations outside of a hospital. Note that the data in Table 7.22, on which this calculation is based, are for all outpatient department attendances, not just those with a specialist medical practitioner: the latter group comprise 83.6% of these attendances.

Table 7.22: Comparison of outpatient department activity recorded in Oacis and MMSS, public acute hospitals in Adelaide (excluding Modbury Hospital), 2003/2004

Collection	FMC	LMH	NHS	TQEH	RAH	RGH	WCH	Total
Oacis	102,248	67,489	13,511	121,747	249,671	120,331	111,033	786,030
MMSS	209,508	94,802	11,299	204,203	263,751	123,450	229,918	1,136,931
Difference : no.	107,260	27,313	-2,212	82,456	14,080	3,119	118,885	350,901
%[1]	51.2	28.8	-19.6	40.4	5.3	2.5	51.7	30.9

[1] Per cent is the difference between the MMSS and Oacis figures as per cent of MMSS figure

Note: FMC: Flinders Medical Centre; LMH: The Lyell McEwin Health Service; NHS: Noarlunga Health Service; TQEH: The Queen Elizabeth Hospital; RAH: Royal Adelaide Hospital; RGH: Repatriation General Hospital; WCH: Women's and Children's Hospital

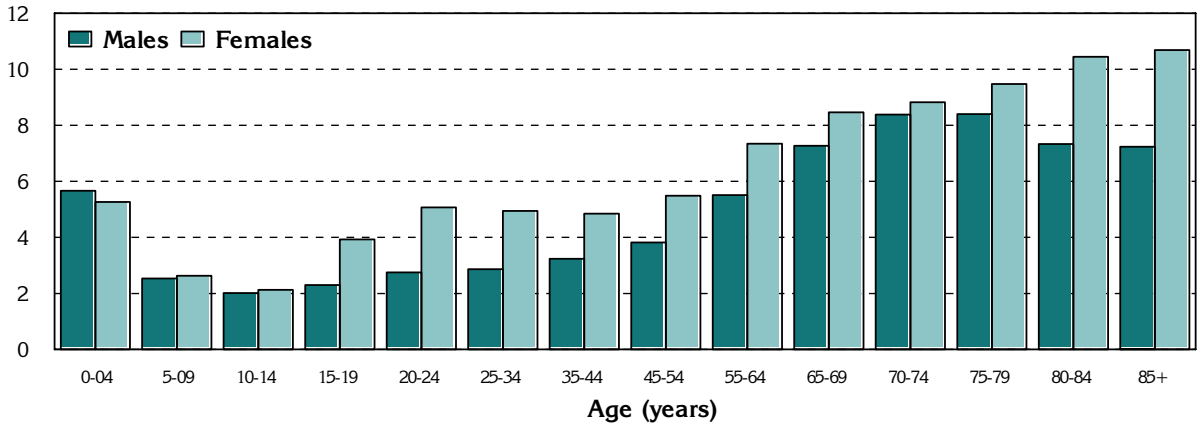
Patient characteristics

GP services

Females used GP services more than males, accounting for 58.9% of services in South Australia in 2002/2003. Overall, there were 5.6 services per head of population for females and 4.0 per head for males. Females were also responsible for more services per patient in each age group, from the 5 to 9 year age group through to 85 years and over, with males accounting for more services only in the 0 to 4 year age group (Figure 7.1).

Figure 7.1: General medical practitioner services, by age and sex, South Australia, 2002/2003

Services per head of population



Population per general medical practitioner, 2002/2003

The full-time workload equivalent (FWE) provides a measure of the supply of GPs and the level of their activity in each SLA. The data mapped are for the full-time workload equivalent GPs (FWE, defined on page 356). However, only full-time equivalent (FTE) data were available for the comparison over time (Table 7.23). Higher population numbers per GP indicate lower levels of supply of GPs.

The population per FTE GP in Metropolitan Adelaide has increased since 1996/1997, from 1,145 people per FTE GP to 1,259 people per FTE GP, an increase of 10.0% (representing a lower level of supply of GPs). Over the same period, the level of provision in country South Australia improved, with 1,339 people per GP in 2002/2003 compared to 1,517 in 1996/1997. The FWE for 2002/2003 was 1,090 people per GP, compared with a higher 1,238 people per GP in country South Australia.

Table 7.23: Population per general medical practitioner

Section of State	Per FTE			Per FWE
	1996/1997	2002/2003	Per cent change[1]	2002/2003
Metropolitan Adelaide (incl. Gawler)	1,145	1,259	10.0	1,090
Country	1,517	1,339	-11.7	1,238
South Australia	**1,225**	**1,280**	**4.5**	**1,126**

[1]**Per cent change over six years in the population per general medical practitioner**

Metropolitan regions

There were 1,005 FWE GPs in the metropolitan regions (excluding Gawler) in 2002/2003: 1,090 people per GP. Female GPs are under-represented in the metropolitan regions, with all but two SLAs having fewer than 50% female GPs. Female GPs comprised less than one-quarter of GPs in over half (58.5%) of all SLAs.

When using these data, readers should be mindful that people living in an SLA with a high rate of population per GP (low level of provision) may use a GP in an adjacent area with a lower rate of population per GP (high level of provision). In some cases, this may be quite close to their home; in others, access may be more difficult, involving travel to a GP. Caution should also be exercised in using the data for the City of Adelaide, where the relatively high supply results from the use in the calculation of the usual resident population, rather than the much larger day-time (working) population.

The overall impression from Map 7.17 is of high rates of provision (areas mapped white) of GPs across the inner, middle and some beachside suburbs, as well as in much of the outer north. Low rates (areas mapped in the darkest shade) are more common in outer SLAs. There was a weak association at the SLA level between rates of GP supply and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

In the Central Northern region, there were 1,039 people per GP, with 739 FWE GPs. Within this region, the SLAs with the largest populations per GP were Playford - West (2,883 people per GP, 2.9 FWE GPs), Tea Tree Gully - North (2,762, 9.8), Salisbury - North-East (2,529, 8.9), Port Adelaide Enfield - Inner (2,165, 9.1), Salisbury - South-East (2,126, 16.3), West Torrens - West (2,022, 14.2), Campbelltown - East (1,790, 15.5) and Playford - East Central (1,687, 11.6).

There were no GPs located in Salisbury Balance, despite a population of 5,805 people. In contrast, there were 5.1 FWE GPs in Walkerville (1,383 people per GP), an SLA with a similar population, of 7,052 people. The smallest population per GP occurred in Adelaide (347 people, 38.9 FWE).

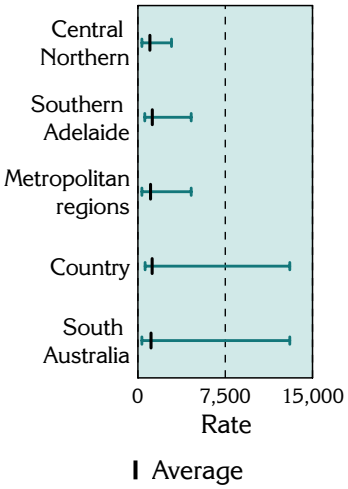
Other SLAs with relatively low population/GP ratios were Norwood Payneham St Peters - West (561 people per GP, 31.9 FWE GPs), Prospect (636, 30.3), Burnside - South-West (659, 32.1), Unley - East (712, 27.6), Salisbury - Inner North (714, 35), Norwood Payneham St Peters - East (714, 22.5), West Torrens - East (752, 31.7), and Charles Sturt - Inner East (757, 28.4) and - North-East (786, 32.9).

Southern Adelaide

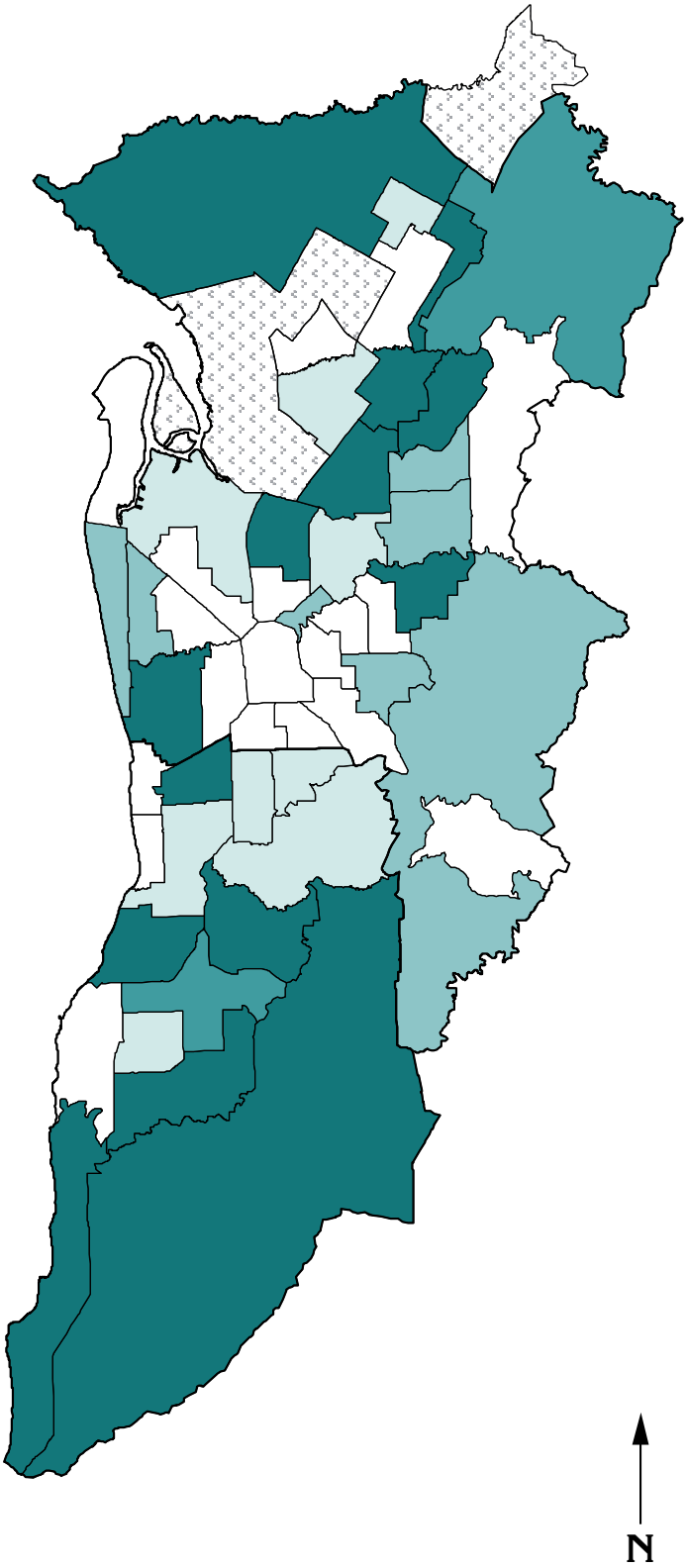
In the Southern region, there were 1,234 people per GP, an FWE of 265.8 GPs. The SLAs with the largest populations per GP were Onkaparinga - Hackham (4,585 people per GP, 3.1 FWE GPs) and - Reservoir (2,462, 10.3), Marion - South (2,142, 9.7), Onkaparinga - South Coast (1,701, 14.0) and - Hills (1,701, 6.6), and Marion - North (1,688, 15.1).

The lowest ratio of people per GP in the south was in the SLA of Holdfast Bay - North (600 people per GP, 32.1 FWE GPs) followed by Onkaparinga - North Coast (670, 26.7) and Holdfast Bay - South (731, 19.8).

Map 7.17
Population per general medical practitioner (GP), metropolitan regions, 2002/2003



Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA boundary
Health Region boundary

Population per GP, by SLA

- *1,600 and above*
- *1,400 to 1,599*
- *1,200 to 1,399*
- *1,000 to 1,199*
- *below 1,000*
- *data not mapped*[#]

[#]*Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Population per general medical practitioner, 2002/2003

Country South Australia

There were 345.6 FWE GPs in country South Australia in 2002/2003, or 1,229 people per GP (Table 7.24). This was notably higher than for the metropolitan regions (1,090 people per GP). Female GPs comprised less than one-quarter of GPs in over two thirds (68.8%) of all SLAs.

The population per GP varied across the State, with the highest populations (lowest supply) in the **South East** and **Northern and Far Western** regions.

At the SLA level (Map 7.18), much of the State had medium levels of provision. The exception is the far north, with a very low level of GP provision, despite the relatively large Indigenous population, a population group with a disproportionately high burden of disease.

Table 7.24: Regional totals, population per GP, 2002/2003

Region	Population per GP	FWE
Hills Mallee Southern	1,149	98.7
Wakefield[1]	1,162	84.9
South East	1,524	41.2
Northern & Far Western	1,303	39.1
Eyre	1,144	29.9
Mid North	1,207	25.8
Riverland	1,290	26.0
Country SA	**1,229**	**345.6**
Central Northern	1,039	739.0
Southern	1,234	265.8
Metropolitan regions	**1,090**	**1004.8**
South Australia	**1,126**	**1350.4**

[1]**Gawler is included in the Wakefield region**

There is no consistent evidence in the correlation analysis of an association at the SLA level between rates of GP supply and socioeconomic status (Table 8.2).

The Regions

Readers should note the caution on the previous text page, when using SLA-level data.

The largest regional population per GP in country South Australia was recorded in **South East** (1,524 people per GP, 41.2 FWE). The SLA of Grant had a very high 13,045 people per GP, with just 0.6 FWE. There were also large numbers of people per GP in Wattle Range - East (1,913, 1.7 FWE), Lacepede (1,557, 1.5), Naracoorte and Lucindale (1,483, 5.6) and Mount Gambier (1,425, 16.5).

There were 1,303 people per GP in **Northern and Far Western** region (FWE 39.1), with high ratios of people per FWE GP in Unincorporated Flinders Ranges (6,340 people per GP, 0.2 FWE GPs), Unincorporated Far North (5,153, 1.2) and Roxby Downs (1,681, 2.2). There were no GPs for the population of 226 in Unincorporated Whyalla. The City of Whyalla had an FWE of 17.7, with 1,237 people per GP. There were smaller populations per GP in Coober Pedy (893, 2.6) and Port Augusta (985, 13.8).

In **Riverland**, there were 1,290 people per GP, with an FWE of 26.0. Large populations per GP were found in the SLAs of Loxton Waikerie - East (1,705, 4.4 FWE) and Berri and Barmera - Berri (1,446, 4.8); with low numbers of people per GP in Berri and Barmera - Barmera (851, 5.1) and Renmark Paringa - Paringa (909, 1.9). Unincorporated Riverland had no GPs for a population of 143.

There were 1,207 people per GP in **Mid North**, with an FWE of 25.8 GPs. There were relatively small populations per GP in Barunga West (846, 3.1 FWE) and Orroroo/Carrieton (917, 1.1 FWE); and no GPs in Unincorporated Pirie, with a population of 265.

Wakefield had a population of 1,162 people per GP with an FWE of 84.9. Within this region, Mallala had a large population per GP ratio of 4,172 (1.8 FWE). There were also high ratios in Goyder (1,633, 2.6), Light (1,569, 6.9) and Barossa - Barossa (1,442, 5.2). There were smaller populations per GP in the SLAs of Copper Coast (749, 14.8), Barossa - Angaston (943, 8.2), and Yorke Peninsula - North (974, 7.7).

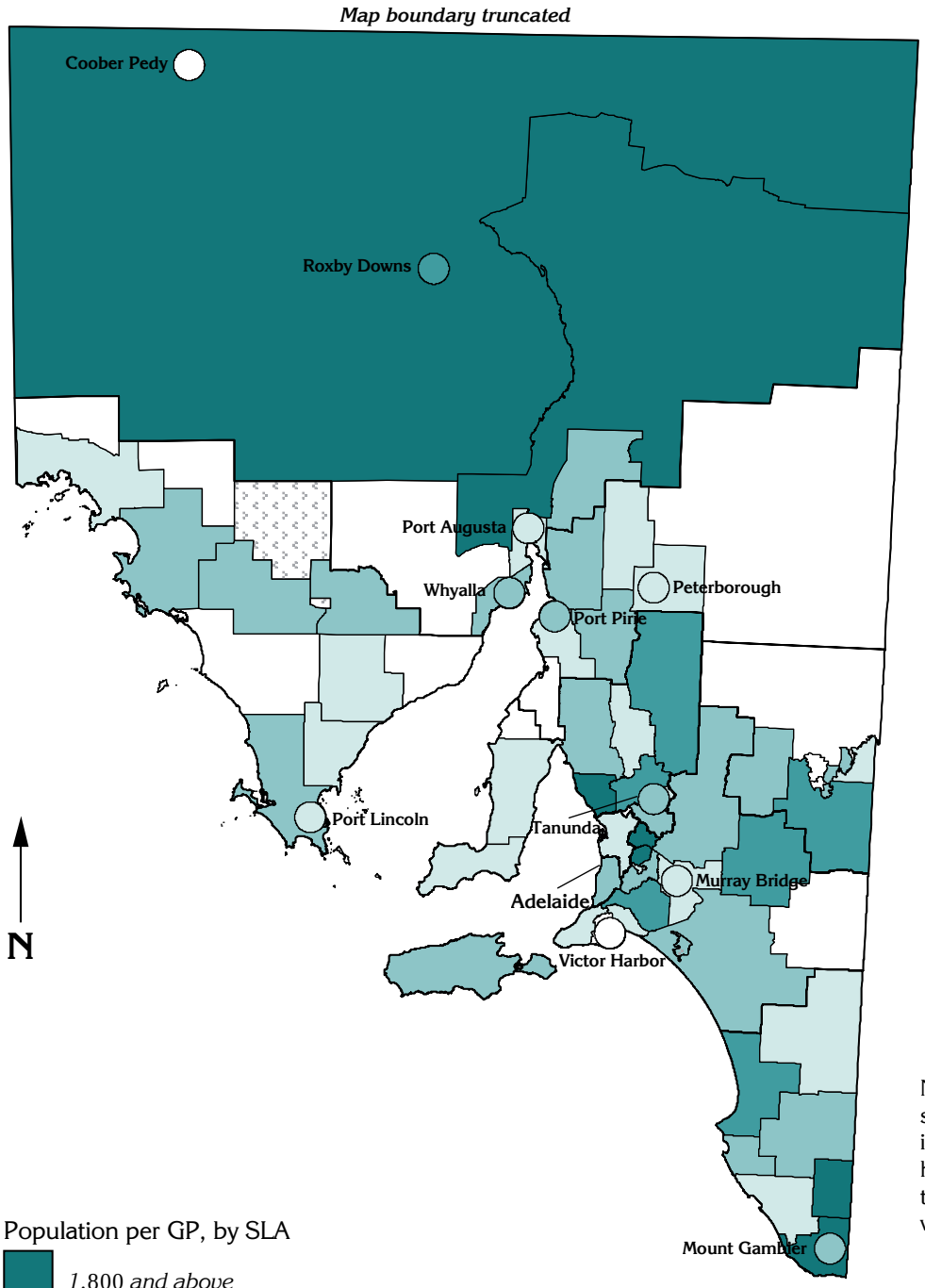
There were 1,149 people per GP in **Hills Mallee Southern** (an FWE of 98.7). There were large populations per GP in the SLAs of Adelaide Hills - North (1,831, 3.7), Adelaide Hills Balance (1,825, 4.8), Karoonda East Murray (1,790, 0.7), Alexandrina - Strathalbyn (1,605, 5.4), Mid Murray (1,479, 5.7) and Kangaroo Island (1,406, 3.1). Much smaller populations per GP were recorded for Victor Harbor (621 people, 18.4 FWE GPs) and Southern Mallee (830, 2.7).

In **Eyre**, there were 1,144 people per GP (29.9 FWEs). There were small populations per GP in the SLAs of Franklin Harbor (873, 1.5) and Ceduna (906, 4.0); and no full-time workload equivalent GPs in Elliston or Unincorporated West Coast.

ASGC Remoteness classification

The supply of GPs decreases with increasing remoteness, illustrated by the population per GP increasing, in a step-wise fashion, from 1082 (with 1,008 FWE GPs) in the Major Cities areas to 1,575 (with 9 FWE GPs) in the Very Remote areas.

Map 7.18
Population per general medical practitioner (GP), South Australia, 2002/2003



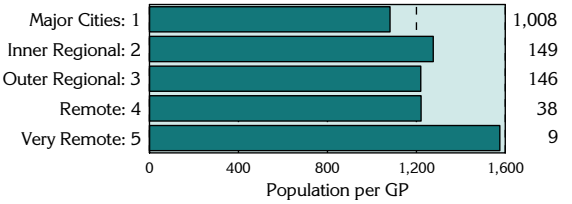
Note: The black vertical lines show the average rate for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Population per GP, by SLA

- *1,800 and above*
- *1,500 to 1,799*
- *1,200 to 1,499*
- *900 to 1,199*
- *below 900*
- *data not mapped*[#]

[#]*Data were not mapped because the SLA has a population of less than 100*

ASGC Remoteness classification FWE GPs



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

General medical practitioner services to males, 2002/2003

General practitioners offer a wide range of primary health care services and are the 'front line' of the Australian health care system. In metropolitan regions, low socioeconomic (SES) groups consult general practitioners more frequently than high SES groups. The primary reason is their poorer health and hence, greater medical need (however, distributional, operational and financial factors associated with the provision of general practice services are also important).

Between 1992/1993 and 1997/1998, the rate of GP services to males in South Australia increased from 452,995 services per 100,000 population to 484,750 (Table 7.25). By 2002/2003, the rate was a lower 400,594 per 100,000 population, representing a decline of 11.6% over the ten years. The same trend was observed for both Metropolitan Adelaide and country South Australia, although with a larger reduction in Metropolitan Adelaide (13.0%) compared with country South Australia (6.7%). Male rates in Metropolitan Adelaide were 18.5% higher than those in country South Australia in 2002/2003.

Table 7.25: General practitioner services to males

Age-standardised rate per 100,000

Section of State	1992/1993	1997/1998	2002/2003	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	485,340	522,134	422,359	-13.0
Country	368,966	391,149	344,337	- 6.7
South Australia	452,995	484,750	400,594	-11.6

[1]**Per cent change over ten years in the rate of general practitioner services to males**

Metropolitan regions

In 2002/2003, there were 2,240,162 GP services to males in the metropolitan regions (excluding Gawler). This was six per cent higher than expected from the State rates, with a standardised GP service ratio (SR) of 106** (Table 7.26). As noted for the maps of community-based services, there is a marked separation between areas with high, and those with low use of GP services by males (Map 7.19).

The correlation analysis shows a very strong association at the SLA level between high rates of GP services to males and many indicators of socioeconomic disadvantage. The strength of this association is summarised by the very strong inverse correlation (-0.81) with the Index of Relative Socio-Economic Disadvantage (Table 8.1).

Central Northern Adelaide

In the Central Northern region, there were 1,622,154 GP services to males, nine per cent higher than expected (an SR of 109**). A number of SLAs in the region had a higher than expected number of services for males, including Salisbury - Inner North (an SR of 140**, 62,044 services), Playford - East Central (138**, 47,087) and - Elizabeth (133**, 68,178), and Port Adelaide Enfield - Port (137**, 70,664). There were also elevated ratios in Charles Sturt - North-East (an SR of 129**, 65,680) and - Inner East (118**, 52,142), Adelaide (127**, 34,777 services), Salisbury - Central (126**, 65,507) and - South-East (118**, 77,505), Playford - West Central (125**, 30,299) and - West (120**, 19,600), Port Adelaide Enfield - East (121**, 59,112), and West Torrens - East (115**, 54,668).

The lowest rates of GP services for males were recorded for Burnside - South-West (an SR of 77**, 31,834 services) and - North-East (85**, 36,511), Tea Tree Gully - Hills (80**, 20,417), Walkerville (84**, 12,105), Unley - East (85**, 31,023), and Adelaide Hills - Ranges (85**, 17,430).

The SLAs with the largest numbers of GP services used by males were Port Adelaide Enfield - Coast (69,273 services, an SR of 105**) and - Inner (42,548, 104**); Charles Sturt - Coastal (63,869, 98**) and - Inner West (57,592, 113**); West Torrens - West (60,925, 102**); Campbelltown - East (59,564, 110**) and - West (42,646, 108**); Tea Tree Gully - Central (49,104, 97**), - South (66,424, 101) and - North (45,300, 98**); and Salisbury - North-East (45,370, 104**).

Southern Adelaide

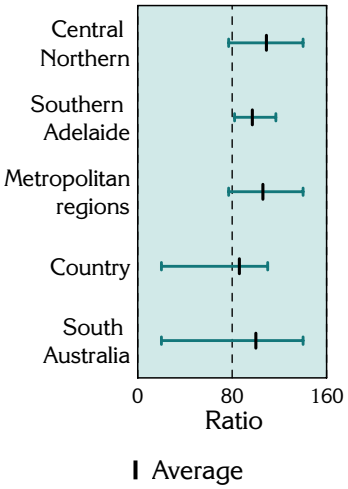
Within the Southern region, there were three per cent fewer services than expected with an SR of 97** (618,008 services). There were relatively high levels of service use in Onkaparinga - North Coast (an SR of 117**, 42,420) and Onkaparinga - Hackham (113**, 29,991).

There was less variation in service use by males in the south than in the north, with the lowest SRs in this region recorded for males resident in Onkaparinga - Hills (an SR of 82**, 18,343) and Mitcham - North-East (83**, 25,083).

The largest numbers of GP services for males in the south were in Marion - Central (68,224 services, an SR of 99*), Onkaparinga - Woodcroft (62,901, 98**), Marion - North (53,481, 104**), Onkaparinga - South Coast (47,348, 104**), Onkaparinga - Morphett (47,073, 103**), Mitcham - West (42,436, 95**), Onkaparinga - Reservoir (41,552, 90**) and Mitcham - Hills (41,408, 86**).

* **indicates statistical significance: see page 24**

Map 7.19
General medical practitioner services to males, metropolitan regions, 2002/2003

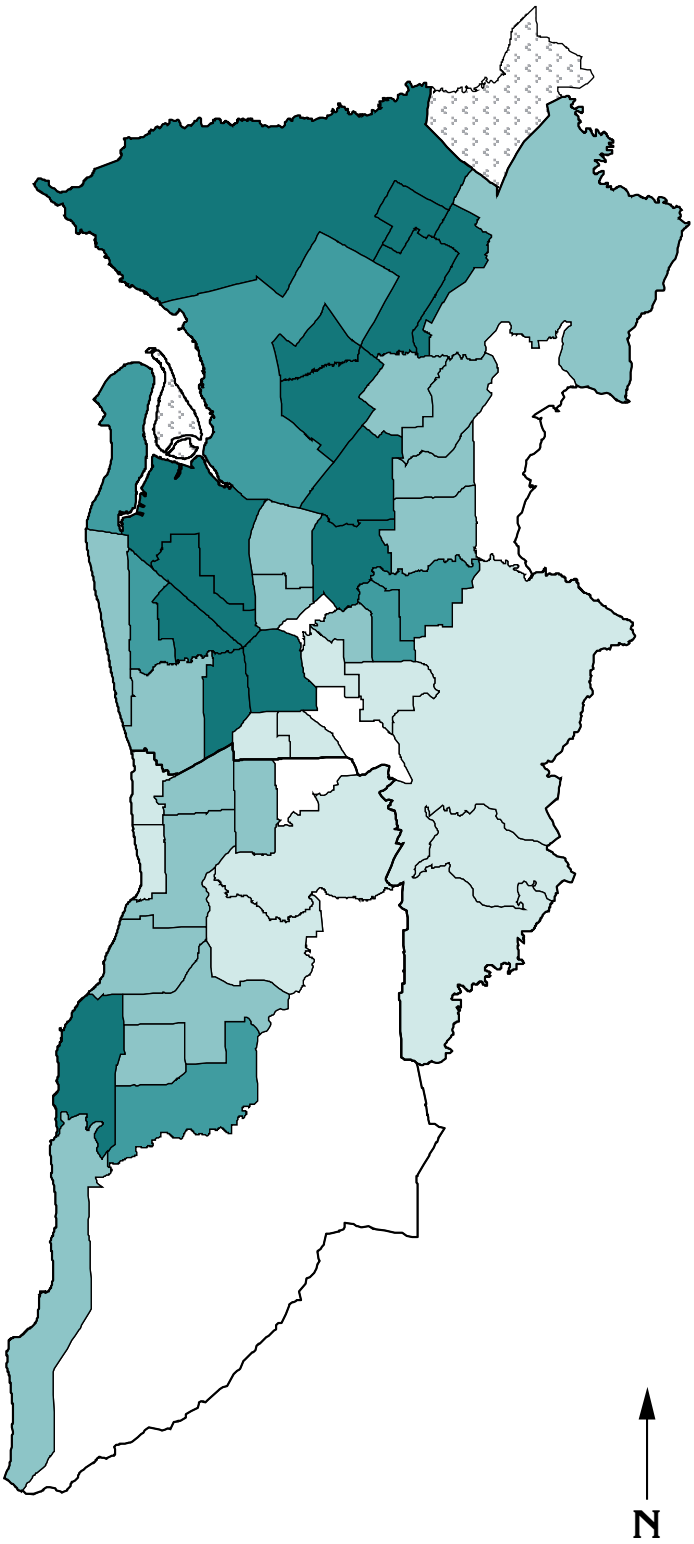


Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*



*Index shows the number of services to males in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

General medical practitioner services to males, 2002/2003

Country South Australia

There were 14% fewer GP services to males than expected in country South Australia, a standardised GP service ratio (SR) of 86** (753,323 services).

All of the regional-level ratios were below 100, and the distribution of services showed no particular geographic pattern, other than there being higher rates in some SLAs near Adelaide (Map 7.20).

Table 7.26: Regional totals, GP services to males, 2002/2003

Region	No.	SR
Hills Mallee Southern	220,992	93**
Wakefield[1]	184,540	91**
South East	87,688	71**
Northern & Far Western	91,304	89**
Eyre	58,574	84**
Mid North	57,672	87**
Riverland	52,553	77**
Country SA	753,323	86**
Central Northern	1,622,154	109**
Southern	618,008	97**
Metropolitan regions	2,240,162	106**
South Australia	2,993,485	100

[1]**Gawler is included in the Wakefield region**

There is no consistent evidence in the correlation analysis of an association at the SLA level between high rates of GP service use by males and socioeconomic status (Table 8.2).

The Regions

The region with the highest use of GP services by males in country South Australia was **Hills Mallee Southern,** although this was still seven per cent fewer services than expected from the State rates (an SR of 93**, 220,992 services). Within the region, there were more services than expected in the SLAs of Murray Bridge (108**, 37,851 services), Alexandrina - Coastal (108**, 23,503), Mount Barker - Central (108**, 30,641), Yankalilla (107**, 9,128) and Victor Harbor (101, 26,011). A number of SLAs had ratios more than ten per cent below that expected, including Karoonda East Murray (an SR of 41**, 1,134), Kangaroo Island (70**, 6,228), Mid Murray (79**, 15,088), Mount Barker Balance (85**, 13,617), Adelaide Hills - North (86**, 11,026), Alexandrina - Strathalbyn (88**, 14,817) and Adelaide Hills Balance (88**, 15,194).

Wakefield was the region with the second highest ratio, with nine per cent fewer services than expected (an SR of 91**, 184,540 services). Within the region, Copper Coast was the only SLA with more services than expected (an SR of 106**, 25,889 services). SLAs with fewer services than expected included Barossa - Tanunda (79**, 7,138), Clare and Gilbert Valleys (81**, 14,096), Barossa – Barossa (83**, 12,199), Yorke Peninsula - South (83**, 7,866), Goyder (86**, 7,907), Wakefield (88**, 12,262) and Light (88**, 18,356).

Northern and Far Western had an SR of 89** (91,304). While there were more GP services than expected in Port Augusta (110**, 29,769) and Coober Pedy (104**, 5,956), low SRs were recorded for Unincorporated Far North (38**, 4,698), Unincorporated Whyalla (42**, 235), Unincorporated Flinders Ranges (55**, 1,379), Roxby Downs (57**, 3,768) and Flinders Ranges (71**, 2,754).

There were 13% fewer GP services to males in **Mid North** (an SR of 87**, 57,672). Barunga West had an SR of 102 (6,253 services), with 80% fewer services to males than expected in Unincorporated Pirie (20**, 122). There were also low SRs in Mount Remarkable (70**, 4,708), Port Pirie Balance (78**, 5,897), Northern Areas (82**, 8,310) and Orroroo/Carrieton (86**, 1,822).

There were 16% fewer services for males than expected in **Eyre** (an SR of 84**, 58,574 services). Within this region, there were low ratios in Unincorporated West Coast (50**, 622), Elliston (52**, 1,287), Streaky Bay (76**, 3,337), Ceduna (77**, 5,468), Kimba (79**, 2,085), Le Hunte (80**, 2,377), Lower Eyre Peninsula (80**, 7,253) and Tumby Bay (85**, 4,908).

All of the SLAs combined in **Riverland** had 13% fewer GP services to males than expected from the State rates, with an overall SR of 77** (52,553 services). The lowest SR was recorded for Unincorporated Riverland (57**, 164 services), Loxton Waikerie - East (65**, 10,150), Renmark Paringa - Paringa (72**, 2,676), followed by Loxton Waikerie - West (73**, 7,338), Renmark Paringa - Renmark (75**, 12,298), and Berri and Barmera - Berri (88**, 11,888) and - Barmera (89**, 8,039).

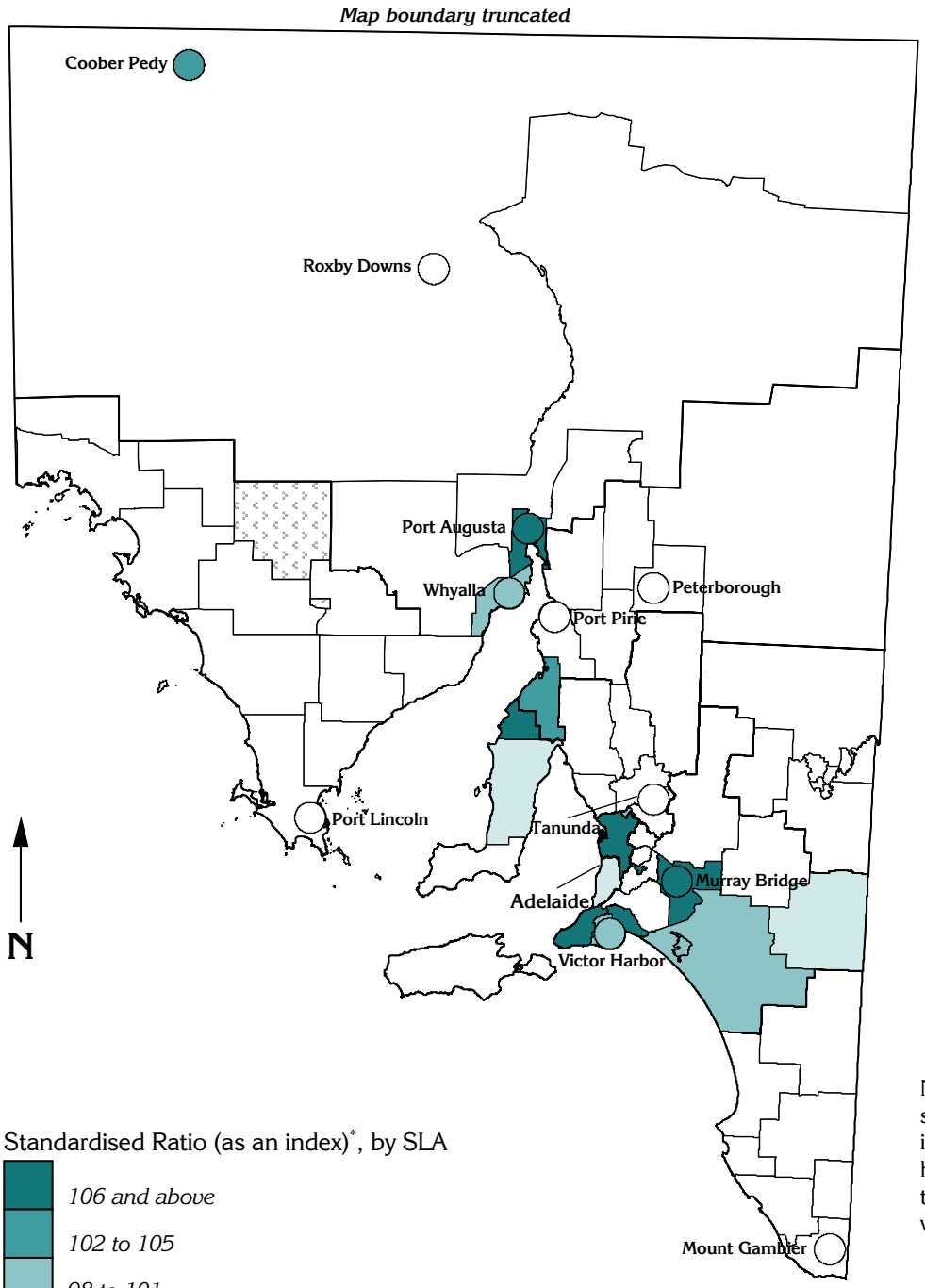
South East had the lowest ratio, with 29% fewer services than expected (an SR of 71**, 87,688 services). A number of SLAs within the region had fewer than expected services, including Grant (30**, 4,731), Robe (53**, 1,563), Lacepede (65**, 3,229), Mount Gambier (75**, 33,766), Tatiara (78**, 11,455), Naracoorte and Lucindale (79**, 13,063), and Wattle Range - West (80**, 14,460) and - East (83**, 5,421).

ASGC Remoteness classification

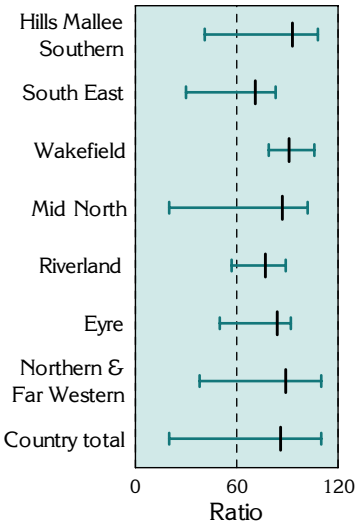
The level of GP services to males declined with increasing remoteness, with the greatest differences in rates of GP services to males being between the two lowest and the two highest remoteness classes (a difference of 13% in each case).

* **indicates statistical significance: see page 24**

Map 7.20
General medical practitioner services to males, South Australia, 2002/2003



SLA
Health Region



Average

Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

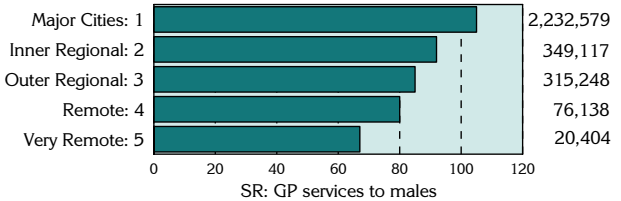
Standardised Ratio (as an index)*, by SLA

- *106 and above*
- *102 to 105*
- *98 to 101*
- *94 to 97*
- *below 94*
- *data not mapped#*

*Index shows the number of services to males in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100

ASGC Remoteness classification Services



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

General medical practitioner services to females, 2002/2003

General practitioners offer a wide range of primary health care services and are the 'front line' of the Australian health care system. In metropolitan regions, low socioeconomic (SES) groups consult general practitioners more frequently than high-SES groups. The primary reason is their poorer health and hence greater medical need (however, distributional, operational and financial factors associated with the provision of general practice services are also important).

The rate of GP services to females in South Australia remained fairly stable from 1992/1993 to 1997/1998, but had declined by 2002/2003, with an overall reduction of 12.0% (Table 7.27). The overall decline in services between 1992/1993 and 2002/2003 was greater in the Metropolitan Adelaide (13.6%) than in country South Australia (5.8%). Female rates in Metropolitan Adelaide were 14.7% higher than those in country South Australia in 2002/2003. Female rates were also 28.5% above those for males, 27.5% higher in Metropolitan Adelaide and 30.6% higher in country South Australia.

Table 7.27: General medical practitioner services to females

Age-standardised rate per 100,000

Section of State	1992/1993	1997/1998	2002/2003	Per cent change[1]
Metropolitan Adelaide (incl. Gawler)	673,896	682,719	582,291	-13.6
Country	526,907	524,878	496,465	-5.8
South Australia	636,355	640,895	560,270	-12.0

[1]**Per cent change over ten years in the rate of general practitioner services to females**

Metropolitan regions

There were four per cent more services to females in the metropolitan regions (excluding Gawler) than expected from the State rates (a standardised GP service ratio (SR) of 104**, 3,250,094 services) (Table 7.28). As was the case for males, there is a marked separation between areas with high, and those with low use of GP services by females (Map 7.21).

The correlation analysis shows a very strong association at the SLA level between high rates of GP services to females and socioeconomic disadvantage (Table 8.1). These results, with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate an association at the SLA level between high use of GP services by females and socioeconomic disadvantage.

Central Northern Adelaide

There were six per cent more GP services provided to females in the Central Northern region than expected (106**, 2,330,668), with 44% more services provided to women in Salisbury - Inner North (an SR of 144**, 86,277 services). There were also elevated SRs in Adelaide (139**, 50,182); Playford - East Central (132**, 62,413), - Elizabeth (125**, 93,288), - West (118**, 24,277) and - West Central (129**, 41,474); Port Adelaide Enfield - Port (127**, 95,531) and - Coast (119**, 97,717); Salisbury - Central (120**, 89,300), Balance (113**, 14,702) and - South-East (119**, 109,813); and Charles Sturt - North-East (116**, 87,027).

The SLA with the lowest SR in the metropolitan regions was Walkerville (83**, 18,779). There were also fewer services than expected in Burnside - South-West (85**, 56,514) and - North-East (88**, 59,546); Unley - East (86**, 53,324) and - West (87**, 45,052); Norwood Payneham St Peters - West (87**, 47,128); Adelaide Hills - Ranges (89**, 23,539) and - Central (91**, 31,805); and Tea Tree Gully - Hills (89**, 29,950).

Large numbers of GP services to women were recorded in the SLAs of Tea Tree Gully - South (96,347 services, an SR of 101) and - Central (72,504, 101**); Charles Sturt - Coastal (91,512, 96**) and - Inner West (81,038, 109**); West Torrens - West (90,248, 99*) and - East (74,153, 106**); Port Adelaide Enfield - East (88,420, 108**); and Campbelltown - East (84,323, 107**).

Southern Adelaide

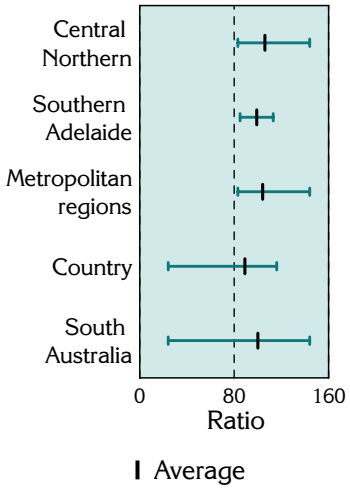
The SR for the south was lower than that for the Central Northern region, with one per cent fewer GP services to females than expected (99**, 928,426 services). The SLAs with the highest SRs in this region were Onkaparinga - North Coast (113**, 58,587 services), - Hackham (111**, 40,634), - South Coast (108**, 66,566), and - Morphett (105**, 70,511).

The SLAs with fewer services than expected in the south were Mitcham - North-East (an SR of 85**, 42,756 services), Onkaparinga - Hills (88**, 26,671), Holdfast Bay - South (91**, 43,993), Mitcham - Hills (91**, 62,924), Holdfast Bay - North (91**, 58,908) and Onkaparinga - Reservoir (92**, 59,491).

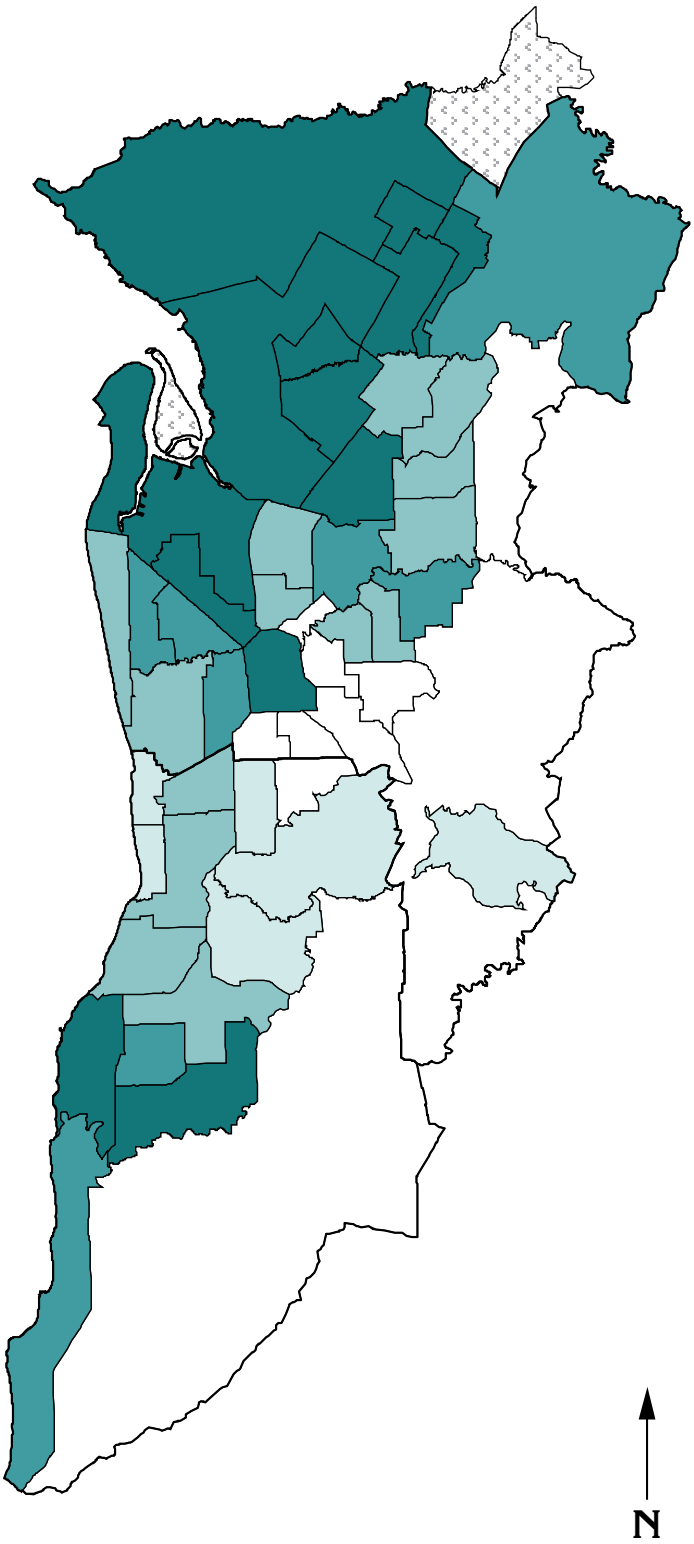
There were large numbers of GP services used by females in Marion - Central (106,081 services, an SR of 102**), Onkaparinga - Woodcroft (92,380, 102**) and Marion - North (85,353, 103**).

* **indicates statistical significance: see page 24**

Map 7.21
General medical practitioner services to females, metropolitan regions, 2002/2003



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *110 and above*
- *105 to 109*
- *95 to 104*
- *90 to 94*
- *below 90*
- *data not mapped#*

*Index shows the number of services to females in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

General medical practitioner services to females, 2002/2003

Country South Australia

There were eleven per cent fewer services to females than expected in country South Australia, (a standardised GP service ratio (SR) of 89**, 1,023,978 services). As for males, the distribution of services showed no particular geographic pattern, other than there being higher rates in some SLAs near Adelaide (Map 7.22).

Table 7.28: Regional totals, GP services to females, 2002/2003

Region	No.	SR
Hills Mallee Southern	305,867	98**
Wakefield[1]	249,952	92**
South East	123,720	73**
Northern & Far Western	121,449	94**
Eyre	79,380	88**
Mid North	75,267	85**
Riverland	68,329	75**
Country SA	**1,023,978**	**89****
Central Northern	2,330,668	106**
Southern	928,426	99**
Metropolitan regions	**3,250,094**	**104****
South Australia	**4,283,072**	**100**

[1]**Gawler is included in the Wakefield region**

There is no consistent evidence in the correlation analysis of an association at the SLA level between high rates of GP services' use by females and socioeconomic status (Table 8.2).

The Regions

Hills Mallee Southern had the highest ratio, with two per cent fewer services to females than expected (an SR of 98**, 305,867 services). More services than expected were found in the SLAs of Murray Bridge (an SR of 112**, 52,639), Mount Barker - Central (107**, 45,984) and Yankalilla (107**, 11,585). Karoonda East Murray had 51% fewer services to females than expected (an SR of 49**, 1,648 services) with low SRs also in Kangaroo Island (74**, 8,272), Adelaide Hills - North (84**, 14,213), Mount Barker Balance (86**, 18,031) and Mid Murray (86**, 19,076). There were also large numbers of services to females in Victor Harbor (39,241, an SR of 105**), Alexandrina - Coastal (30,775, 105**), Adelaide Hills Balance (21,520, 92**) and Alexandrina - Strathalbyn (21,077, 91**).

There was an SR of 94** in **Northern and Far Western** (121,449 services), with the most highly elevated ratio in Port Augusta (116**, 42,378 services). In contrast, there were 59% fewer services than expected for females in Unincorporated Far North (41**, 5,132) and 52% fewer in Unincorporated Whyalla (48**, 300). There was also a low SR in Roxby Downs (61**, 4,430). Females in Whyalla received 58,133 GP services (an SR of 98**).

There were eight per cent fewer services than expected in **Wakefield (**92**, 249,952), with relatively low ratios recorded in many areas, including Barossa - Tanunda (82**, 10,872) and - Barossa (83**, 15,952), and Yorke Peninsula - South (84**, 9,826). Females in Gawler (50,170, 96**), Copper Coast (34,736, 105**), Light (25,000, 91**) and Yorke Peninsula - North (20,593, 94**) had large numbers of services.

Eyre had an SR of 88**, and 79,380 services. There were 43% more services to females in Unincorporated Lincoln (143*, 39 services) than expected from the State rates; in contrast, there were 49% fewer than expected in Elliston (51**, 1,430). There were also fewer services than expected in Unincorporated West Coast (an SR of 72**, 938), Streaky Bay (80**, 3,939), Ceduna (81**, 7,611), Le Hunte (86**, 3,273) and Lower Eyre Peninsula (88**, 9,147). Port Lincoln had 34,973 services (an SR of 91**).

Women in **Mid North** had 15% fewer services than expected (an SR of 85**, 75,267). At the SLA level, Barunga West had a slightly elevated SR (106**, 7,821 services) and Unincorporated Pirie had 75% fewer services than expected (24**, 153). There were also fewer services than expected, and larger numbers, in Mount Remarkable (75**, 6,154), Northern Areas (78**, 10,447), Peterborough (81**, 4,732) and Port Pirie - City (87**, 35,534).

There were 25% fewer services to females in **Riverland** than expected from the State rates (an SR of 75**, 68,329). Low ratios were recorded for Unincorporated Riverland (an SR of 54**, 179), Loxton Waikerie - East (68**, 13,786), Loxton Waikerie - West (71**, 9,130), Renmark Paringa - Renmark (72**, 15,986) and - Paringa (72**, 3,096), and Berri and Barmera - Berri (80**, 15,082). There were 11,070 services to females in Berri and Barmera - Barmera (90**).

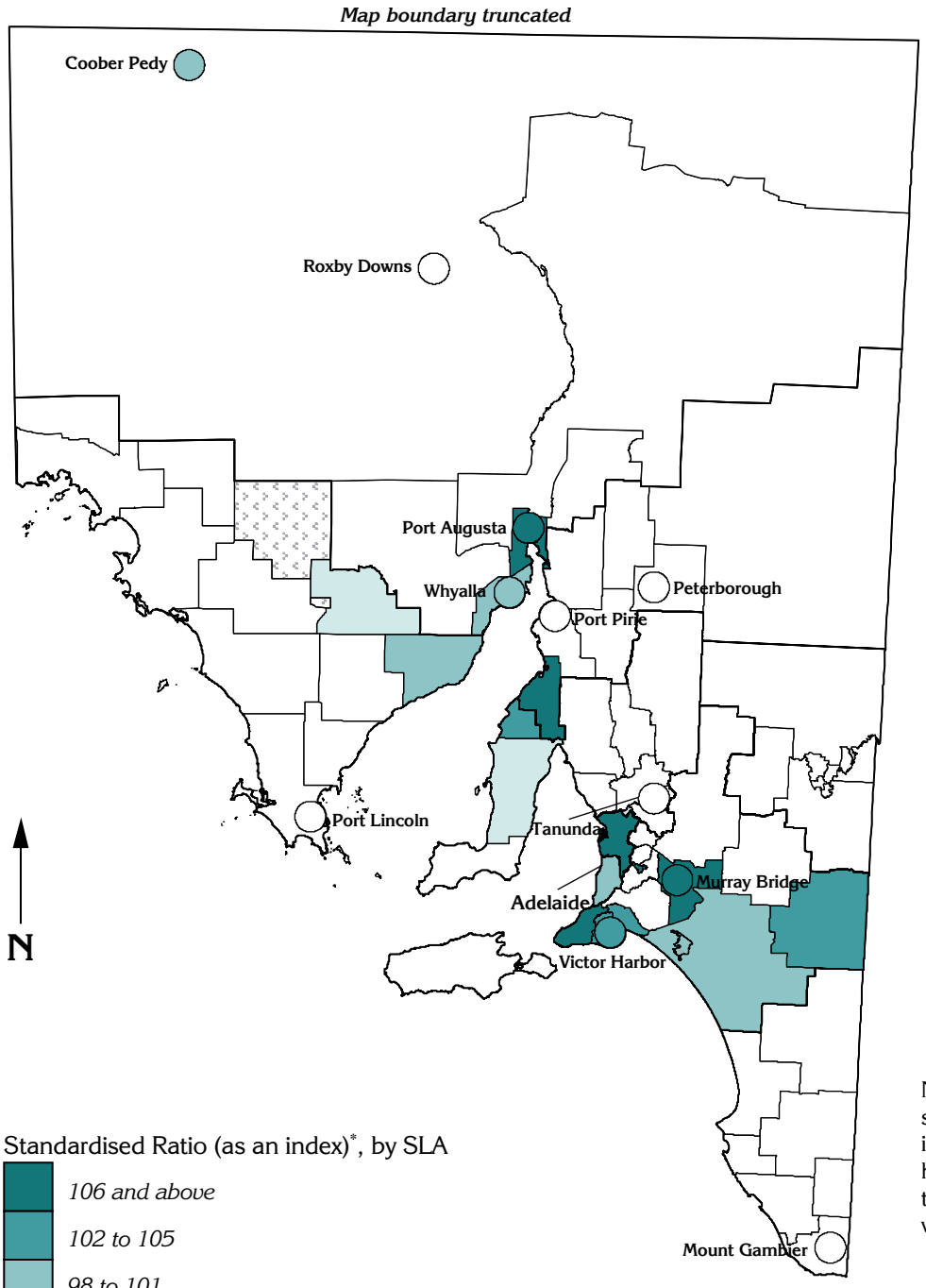
In **South East**, there were 123,720 services, 27% fewer than expected (an SR of 73**). Grant had a very low SR of 32** (6,070 services), with low SRs also in Robe (62**, 2,437), Lacepede (71**, 4,594), Naracoorte and Lucindale (75**, 16,680) and Mount Gambier (79**, 51,917).

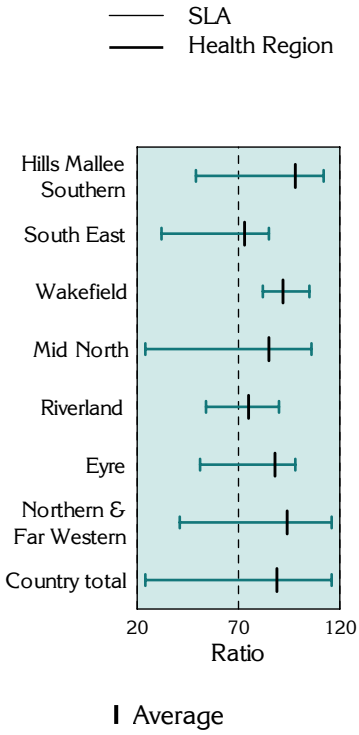
ASGC Remoteness classification

The level of GP services to females declined with increasing remoteness, from an SR of 104** in the Major Cities areas to 70** in Very Remote; rates of use of GP services in the Outer Regional and Remote classes were similar, with ratios of 86** and 85**, respectively.

* **indicates statistical significance: see page 24**

Map 7.22
General medical practitioner services to females, South Australia, 2002/2003





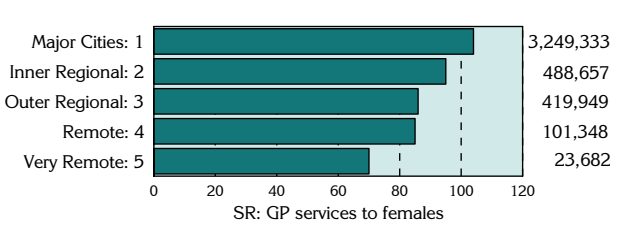
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Ratio (as an index)*, by SLA

- *106 and above*
- *102 to 105*
- *98 to 101*
- *94 to 97*
- *below 94*
- *data not mapped#*

*Index shows the number of services to females in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Accident & Emergency department attendances, 2003/2004

Public hospital Accident and Emergency (A & E) departments are accessible 24 hours a day, seven days a week, to provide acute and emergency care to patients arriving either by ambulance or by other means. While some people require immediate attention for life-threatening conditions or trauma, most require less urgent care. Timely access to care is a high priority for patients, health care providers and the public at large.

A & E waiting times are categorised by triage, which indicates the urgency of a patient's need for medical and nursing care. The benchmarks, set according to triage category, are as follows: need for resuscitation – patients seen immediately (category 1); emergency – patients seen within ten minutes (category 2); urgent – patients seen within 30 minutes (category 3); semi-urgent – patients seen within 60 minutes (category 4); non-urgent – patients seen within 120 minutes (category 5) (NHDC 2003).

There were 26,620 A & E attendances per 100,000 residents of Metropolitan Adelaide at public acute hospitals (excluding Modbury Hospital) in 2003/2004, with a slightly higher rate for residents of the Southern region (28,217 per 100,000) than the Northern region (26,172 per 100,000). The rate of less urgent A & E attendances (classified as triage 4 or 5) was higher than those classified as emergency/ urgent (triage 1, 2 or 3), with 14,636 and 11,984 attendances per 100,000 population, respectively (Table 7.29).

Table 7.29: Accident & Emergency department[1] attendances by triage, 2003/2004

Age-standardised rate per 100,000

Section of State	Total	Triage 1,2 & 3	Triage 4 & 5
Central Northern (excl. Gawler)	26,172	12,199	13,975
Southern	28,217	11,632	16,592
Metropolitan Adelaide (incl. Gawler)	26,620	11,984	14,636

[1]**Includes patients seen in the Accident & Emergency Departments of public acute hospitals**

Metropolitan regions

In 2003/2004, there were 294,648 Accident & Emergency department (A & E) attendances at public acute hospitals (excluding Modbury Hospital) recorded for residents in the metropolitan regions (excluding Gawler). Of these, 132,301 attendances were classified as emergency/ urgent (44.9%) and 162,347 were classified as being of lesser urgency (55.1%).

The distribution of total A & E attendances (first map) shows that the highest rates were largely located in a number of north-western and outer northern and southern SLAs. The distribution of attendances classified as being of lesser urgency is similar to the overall distribution, with emergency/ urgent patients more concentrated in the outer northern and southern areas (Map 7.23).

The correlation analysis shows a very strong association at the SLA level between high rates of A & E department attendances and many indicators of socioeconomic disadvantage (Table 8.1). The strength of this association is summarised by the very strong inverse correlation (-0.75) with the Index of Relative Socio-Economic Disadvantage.

Central Northern Adelaide

There were slightly fewer A & E attendances recorded for residents of the Central Northern region than were expected (a standardised ratio (SR) of 98** and 202,008 attendances).

Residents of Playford - Elizabeth had twice the number of A & E attendances than expected (an SR of 200**), and the highest number of attendances across the metropolitan regions (14,176 attendances).

Highly elevated ratios were also recorded in the SLAs of Adelaide (an SR 163**, 5,912 attendances), Playford - West Central (153**, 5,352), and Salisbury - Inner North (150**, 10,006) and - Central (141**, 10,388).

Areas with 50% or fewer attendances than expected included Adelaide Hills - Central (an SR of 35**, 1,146), Burnside - North-East (47**, 2,661), Adelaide Hills - Ranges (49, 1,249) and Burnside - South-West (49**, 2,754).

Southern Adelaide

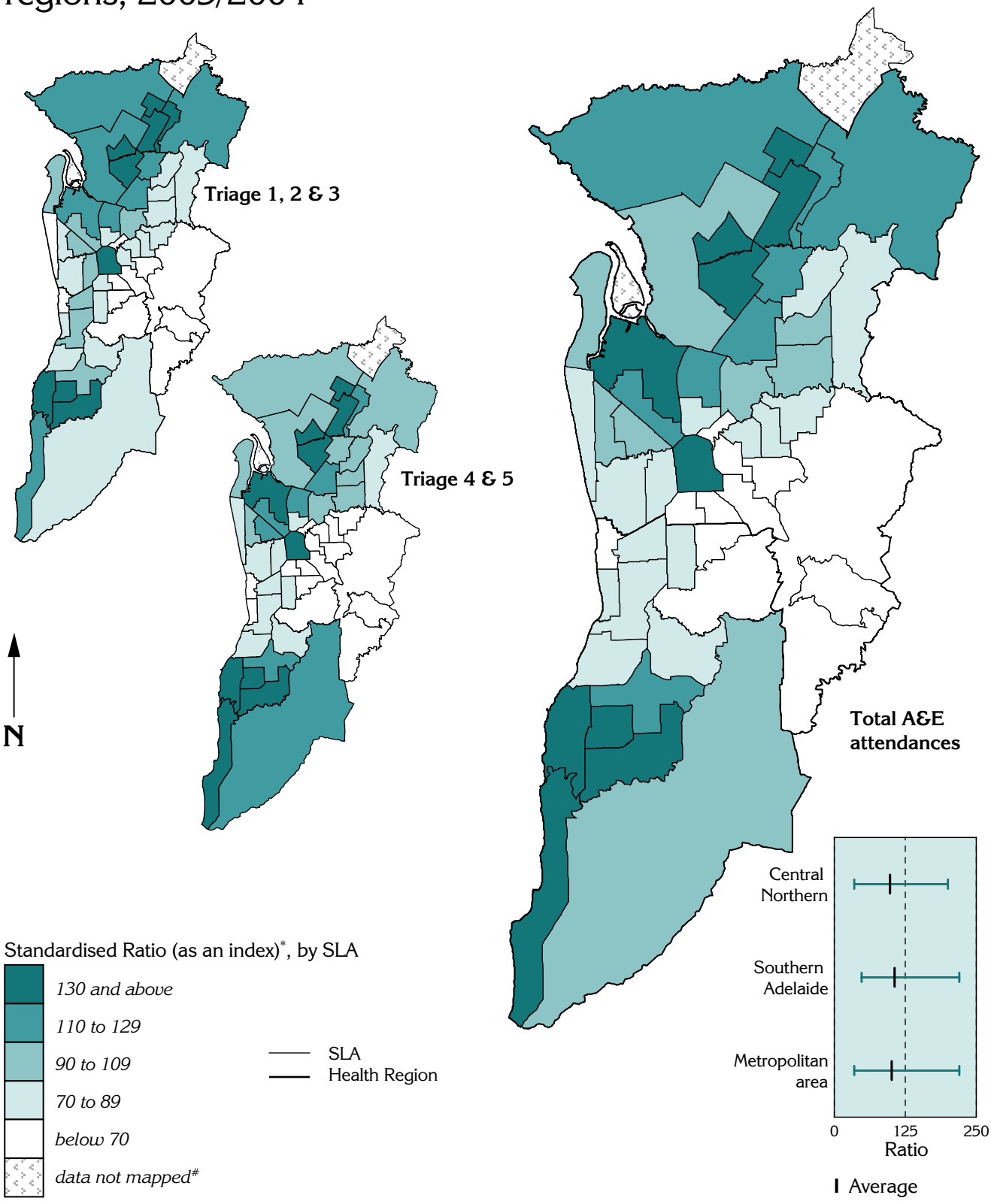
There were 92,639 A & E attendances in the Southern region in 2003/2004, six per cent more than were expected from the rates for the metropolitan regions (an SR of 106**).

The SLAs in Onkaparinga had the most highly elevated ratios in the Southern region, with more than double the number of attendances in Onkaparinga - Hackham (an SR of 220**, 8,099 attendances). Onkaparinga - North Coast (216**, 10,390), - Morphett (169**, 10,872) and - South Coast (157**, 9,957) also had ratios well above the level expected.

The lowest ratios in the Southern region were recorded in the SLAs of Mitcham - North-East (48**, 2,016), Mitcham - Hills (58**, 3,599), and Holdfast Bay - North (59**, 3,199) and - South (70**, 2,730).

* **indicates statistical significance: see page 24**

Map 7.23
Accident & Emergency department attendances, metropolitan regions, 2003/2004



*Index shows the number of attendances recorded for people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data for Torrens Island are mapped with Port Adelaide: Gawler has not been mapped

Note: The black vertical lines show the average ratio for total consultations in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Outpatient department attendances, 2003/2004

Outpatient departments of public hospitals provide an important range of specialist medical and non-medical (allied) health services to the population, in particular to the most disadvantaged groups who do not have private health insurance, and therefore, have limited access to these services operating in private practice.

The data for outpatient departments have been estimated (based on the Monthly Management Summary System), due to incomplete coverage, see page 356 for further details. Consultations with specialist medical practitioners and allied health professionals are included in these data.

The rate of attendances was similar in both regions (Table 7.30). The highest rates of outpatient department attendances were recorded at older ages: 321,881 per 100,000 population for those aged 80 to 84 years; 254,443 per 100,000 for the 75 to 79 year age group; and 238,665 per 100,000 for those aged 85 years and over.

Table 7.30: Outpatient department attendances[1] at public acute hospitals, 2003/2004

Age-standardised rate per 100,000

Section of State	No.	Rate
Central Northern (excl. Gawler)	684,436	88,739
Southern	296,842	89,221
Metropolitan Adelaide (incl. Gawler)	990,980	88,504

[1]Includes patients seen by specialist practitioners and allied health professionals in outpatient departments of public acute hospitals

Metropolitan regions

There were 981,278 outpatient attendances at public acute hospitals in the metropolitan regions (excluding Gawler) in 2003/2004. The SLAs with the most highly elevated ratios were situated in the west and north-west, and outer north and south, with low ratios to the east of the city (Map 7.24).

Data collected in a one-week survey of outpatients in 1981 show a strikingly similar pattern: these data are shown in Chapter 9, Figure 9.11, by five groupings of socioeconomic status of area.

Attendance at outpatient departments is strongly or very strongly correlated with the majority of the indicators of socioeconomic disadvantage. These results, together with a very strong inverse correlation with the Index of Relative Socio-Economic Disadvantage, indicate a strong association at the SLA level between socioeconomic disadvantage and high rates of attendance at outpatient departments of public acute hospitals (Table 8.1)

Central Northern Adelaide

Residents of Central Northern had 684,436 outpatient attendances in 2003/2004 (a standardised ratio (SR) of 100). People in Port Adelaide Enfield - Port had 71% more attendances than expected (an SR of 171**, 41,013 attendances), while those in Playford - Elizabeth (156**, 36,482) and - West Central (156**, 15,032), and Charles Sturt - North-East (151**, 35,624) had over 50% more attendances than expected. There were also elevated ratios in Salisbury - Inner North (146**, 25,924), and - Central (131**, 29,380); Port Adelaide Enfield - Coast (137**, 35,128) and - Inner (122**, 23,494); Charles Sturt - Inner East (132**, 27,546) and - Inner West (120**, 29,049); Playford - East Central (121**, 17,555); and West Torrens - East (121**, 26,726).

Large numbers of attendances were also recorded for people in the SLAs of Salisbury - South-East (29,608, 100), West Torrens - West (27,056, 92**), Charles Sturt - Coastal (26,809, 88**) and Port Adelaide Enfield - East (25,761, 96**).

Fewer than half the expected number of outpatient attendances at public acute hospitals were recorded for Adelaide Hills - Central (46**, 4,904 attendances) and Tea Tree Gully - Hills (49**, 5,121). Low ratios were also recorded in Burnside - North-East (52**, 10,966), Walkerville (55**, 3,874) and Burnside - South-West (59**, 12,299).

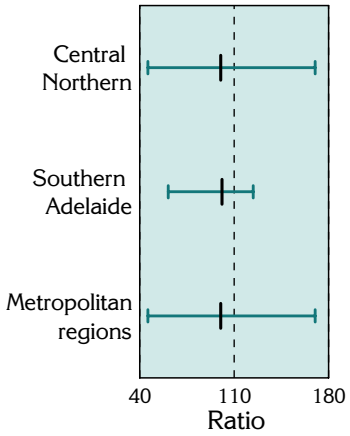
Southern Adelaide

Southern region residents had one per cent more outpatient attendances than expected from the rates for the metropolitan regions (an SR of 101**, 296,842 attendances). Marion - North (125**, 33,064), Onkaparinga - Hackham (121**, 13,147) and Marion - Central (120**, 40,173) all had 20% or more attendances than expected. The SLAs of Onkaparinga - Woodcroft (27,383, 101), Mitcham - West (24,801, 114**), and Onkaparinga - Morphett (23,325, 116**), - North Coast (19,423, 117**) and - South Coast (18,810, 94**), all had large numbers of outpatient attendances.

The lowest ratios in Southern region were found in Onkaparinga - Hills (an SR of 61**, 5,977 attendances), Mitcham - North-East (76**, 11,541), Holdfast Bay - North (82**, 17,031) and Marion - South (82**, 12,606).

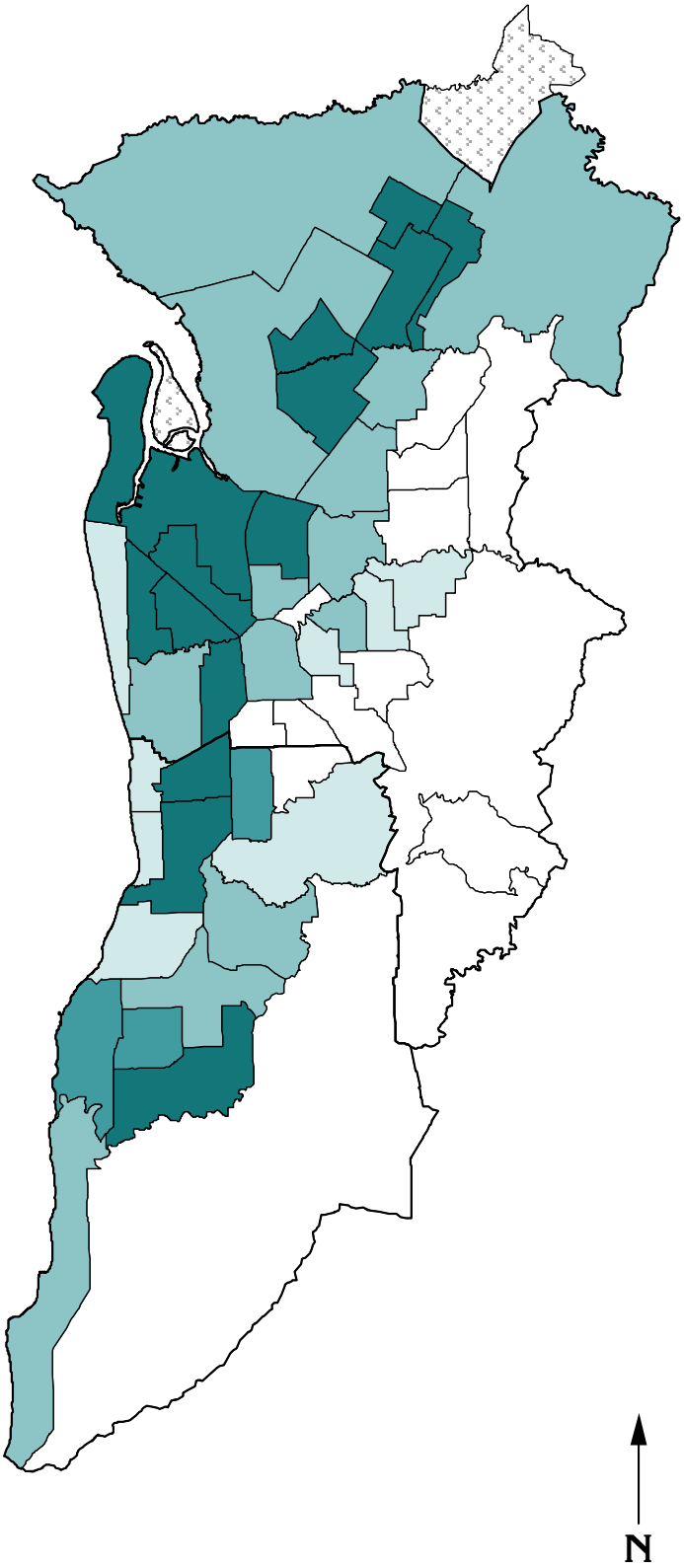
* **indicates statistical significance: see page 24**

Map 7.24
Outpatient department attendances, metropolitan regions, 2003/2004



Average

Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Ratio (as an index)*, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped#*

N

*Index shows the number of attendances of people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

#Data for Torrens Island are mapped with Port Adelaide: Gawler has not been mapped

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Specialist medical practitioner consultations, 2003/2004

Outpatient departments of public hospitals provide an important range of specialist medical services to the population, in particular to the most disadvantaged groups, who do not have private health insurance and therefore have limited access to these services operating in private practice.

The data shown here include consultations[3] with a specialist medical practitioner, either at an outpatient department of a public acute hospital or in the private practitioner's own rooms (whether at a hospital, or not) and funded through Medicare; the total of all specialist consultations is also shown. The data for specialist consultations in outpatient departments are estimated, due to incomplete coverage: see page 356 for details. There were 192,719 specialist practitioner consultations per 100,000 population provided in Metropolitan Adelaide in 2003/2004, of which 112,920 (58.6%) were private consultations (Table 7.31). The rate of specialist consultations was higher in Central Northern (195,052 per 100,000 population) than in Southern (189,927).

Table 7.31: Specialist medical practitioner consultations[1], 2003/2004

Age-standardised rate per 100,000

Section of State	Total	OPD[1]	Private consultations[1]
Central Northern (excl. Gawler)	195,052	80,607	114,444
Southern	189,927	79,835	110,089
Metropolitan Adelaide (incl. Gawler)	192,719	79,800	112,920

[1]Includes people seen by specialist practitioners in outpatient departments (OPD) of public acute hospitals, or in the private practitioner's rooms and funded through Medicare (Private consultations)

[3] A 'consultation' may include a range of services e.g. an examination, minor surgical procedure, etc. Variations in the number of services per patient billed under Medicare are unlikely to affect these geographic comparisons.

Metropolitan regions

There were an estimated 2,130,321 specialist consultations for people in the metropolitan regions (excluding Gawler) in 2003/2004. Private consultations by specialist medical practitioners were concentrated in a band of higher socioeconomic status SLAs (Map 7.25). The pattern for consultations in outpatient departments in public hospitals is almost the reverse, in line with the pattern of socioeconomic disadvantage. When combined, the map of total consultations resembles the pattern of socioeconomic disadvantage, highlighting the importance of access to specialist medical practitioners in public hospitals, for the populations in these areas.

The variable for private consultations with specialist medical practitioners funded through Medicare is strongly correlated with socioeconomic advantage (a correlation of 0.64 with the IRSD). Consultation with these practitioners in outpatient departments is very strongly correlated with socioeconomic disadvantage (an inverse correlation with the IRSD of -0.85); and total consultations are weakly correlated with the IRSD (-0.45), suggesting a weak association at the SLA level between total specialist medical practitioner consultations and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

All consultations

There were 1,500,985 specialist consultations recorded for people from Central Northern (a standardised ratio (SR) of 101**). The highest ratio was in Salisbury, with 20% more consultations than expected from the State rates (an SR of 120**, 47,521 consultations). Other SLAs with elevated ratios included Playford - West Central (an SR of 118**, 25,050 consultations) and - Elizabeth (117**, 58,392); Port Adelaide Enfield - Port (117**, 60,231) and - Coast (110**, 61,478); Adelaide (116**, 30,211); Charles Sturt - Inner-East (115**, 51,525), - North-East (115**, 58,402) and - Inner-West (111**, 57,650); West Torrens - East (111**, 52367); and Norwood Payneham St Peters - West (110**, 38,145).

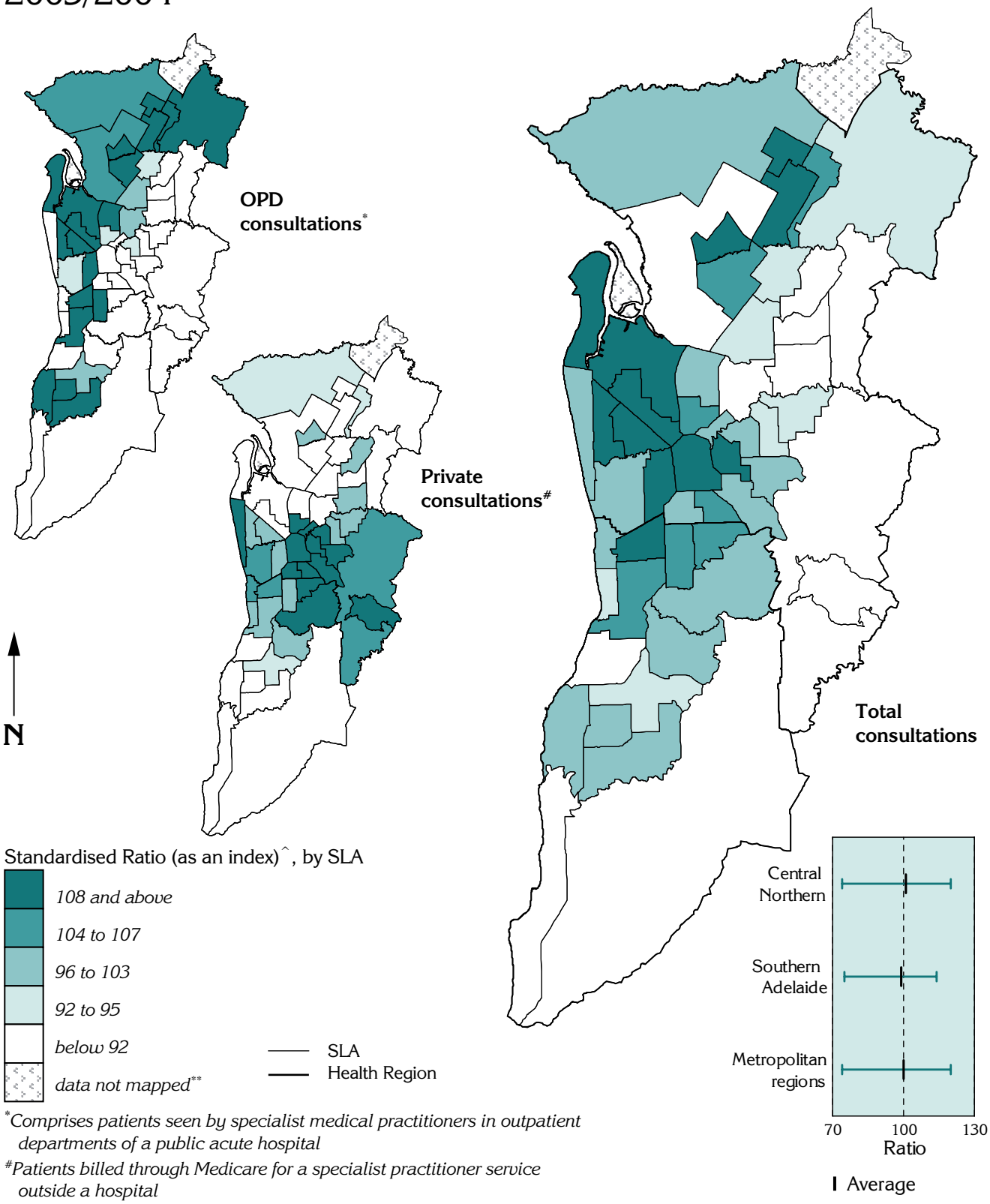
Large numbers of consultations were in Charles Sturt - Coastal (66,683, an SR of 101*), West Torrens - West (62,955, 101), Salisbury - South-East (62,147, 95**) and - Central (52,773, 107**), and Campbelltown - East (49,838, 93**).

There were fewer consultations than expected in Tea Tree Gully - Hills (an SR of 74**, 17,214), - Central (80**, 37,962), - North (82**, 36,829), and - South (84**, 53,906); and low ratios in Adelaide Hills - Central (an SR of 85**, 20,162) and - Ranges (86**, 15,959); Salisbury Balance (86**, 8,561); and Port Adelaide Enfield - East (91**, 52,889).

Consultations in outpatient departments

There were 619,881 consultations in hospital outpatient departments in 2003/2004, one per cent more than expected (an SR of 101**). A number of SLAs in the region had highly elevated ratios, reflecting the reliance of the population in these areas on accessing specialists through public hospitals. These included Port Adelaide Enfield - Port (an SR of 173**, 37,352 consultations), - Coast

Map 7.25
Specialist medical practitioner services, metropolitan regions, 2003/2004



*Comprises patients seen by specialist medical practitioners in outpatient departments of a public acute hospital

#Patients billed through Medicare for a specialist practitioner service outside a hospital

^Index shows the number of consultations for people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on totals for the metropolitan regions

**Data for Torrens Island are mapped with Port Adelaide: Gawler has not been mapped

Note: The black vertical lines show the average ratio for total consultations in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

(139**, 32,095) and - Inner (124**, 21,279); Playford - Elizabeth (158**, 33,076), - West Central (156**, 13,610) and - East Central (122**, 15,931); Charles Sturt - North-East (153**, 32,411), - Inner East (134**, 25,067) and - Inner West (122**, 26,516); Salisbury - Inner North (147**, 23,528) and - Central (134**, 27,047); and West Torrens - East (122**, 24,038).

Relatively large numbers of consultations in hospitals were recorded for residents of Salisbury - South-East (27,269 consultations, an SR of 103**), West Torrens - West (24,320, 92**), Charles Sturt - Coastal (24,154, 88**), Port Adelaide Enfield - East (17,828, 81**), Campbelltown - East (17,828, 81**) and Salisbury - North-East (15,339, 95**).

The lowest ratios were mapped in a number of socioeconomically advantaged SLAs including Adelaide Hills - Central (an SR of 45**, 4,309 consultations), Tea Tree Gully - Hills (49**, 4,613), Burnside - North-East (52**, 9,757), Walkerville (54**, 3,412), Burnside - South-West (58**, 10,742), Adelaide Hills - Ranges (60**, 4,459), Tea Tree Gully - North (62**, 11,202), - Central (63**, 12,076) and - South (65**, 17,246), and Unley - East (71**, 11,560).

Private consultations

In contrast to specialist consultations through hospital outpatient departments, high rates of private consultations mapped to traditional socioeconomically advantaged SLAs. SLAs with the highest ratios included Adelaide (an SR of 133**, 20,441 consultations), Burnside - South-West (133**, 34,151), Unley - East (132**, 29,813), Walkerville (131**, 11,506), Norwood Payneham St Peters - West (131**, 26,625), Burnside - North-East (127**, 33,541), Unley - West (118**, 22,658), Prospect (117**, 24,910), Adelaide Hills - Central (112**, 15,853), Charles Sturt - Coastal (110**, 42,529) and Norwood Payneham St Peters - East (110**, 22,193).

Large numbers of private consultations were also recorded in the SLAs of West Torrens - West (38,635 consultations, an SR of 107**), Tea Tree Gully - South (36,660, 97**), Salisbury - South-East (34,878, 90**), Campbelltown - East (32,010, 101*) and Charles Sturt - Inner West (31,134, 103**).

SLAs with relatively low rates of these consultations included Salisbury Balance (an SR of 74**, 4,390 consultations); Port Adelaide Enfield - Port (76**, 22,879), - Inner (85**, 19,880) and - East (87**, 25,316); Playford - Hills (85**, 2,654) and - Elizabeth (87**, 25,316); Charles Sturt - North-East (88**, 25,991); and Salisbury - Central (89**, 25,276).

Southern Adelaide

All consultations

One per cent fewer consultations with specialist medical practitioners than expected were recorded for people in Southern (an SR of 99**, 629,355 consultations). The few SLAs in the region with elevated ratios included Marion - North (114**, 63,166) and - Central (106**, 76,190), and Mitcham - West (107**, 49,381).

The largest number of consultations were provided to people from Onkaparinga - Woodcroft (57,692 consultations, an SR of 95**). There were also large numbers in Mitcham - Hills (47,700, 101) and Onkaparinga - Morphett (43,819, 99*).

SLAs with relatively low ratios in Southern were Onkaparinga - Hills (an SR of 75**, 16,163 consultations) and - South Coast (88**, 38,804), and Marion - South (87**, 30,476).

Consultations in outpatient departments

There were 264,896 consultations with specialist medical practitioners in outpatient departments recorded for residents of the Southern region (an SR of 100). SLAs with high rates of consultations included Marion - North (an SR of 125**, 29,706 consultations) and - Central (121**, 36,245); Onkaparinga - Hackham (117**, 11,542), - North Coast (114**, 17,013) and - Morphett (113**, 20,538); and Mitcham - West (115**, 22,312). In Onkaparinga - Woodcroft, there were 24,347 consultations (an SR of 99).

Fewer consultations than expected were recorded for residents of Onkaparinga - Hills (an SR of 59**, 5,217 consultations), Mitcham - North-East (75**, 10,294), Marion - South (82**, 11,452), Holdfast Bay - North (82**, 15,207), Mitcham - Hills (85**, 16,467) and Holdfast Bay - South (88**, 12,233).

Private consultations

There were three per cent fewer private consultations than expected for residents of the Southern region (an SR of 97**, 364,439 consultations). Mitcham - North-East had 25% more consultations than expected (an SR of 125**, 23,579 consultations), followed by Mitcham - Hills (112**, 31,233), Holdfast Bay - North (107**, 26,631) and Marion - North (105**, 33,460). Large numbers of private consultations were recorded for residents of Marion - Central (39,945 consultations, an SR of 96**) and Onkaparinga - Woodcroft (33,345, 93**).

SLAs with the lowest ratios were all in Onkaparinga, including - North Coast (an SR of 83**, 17,468 consultations), - Hackham (84**, 12,117), - Hills (86**, 10,946), - South Coast (86**, 22,351) and - Morphett (89**, 23,281).

* indicates statistical significance: see page 24

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Private health insurance, 30 June 2001

Having private health insurance increases the range of health services that can be accessed, both in-hospital services and services provided by medical and dental practitioners, psychologists, physiotherapists and so on. Information as to the coverage of private health insurance is not generally available at a small area level. However, with the introduction of the thirty per cent rebate and an associated registration process[4], data of acceptable validity are available for the coverage of the population at 30 June 2001; more recent data are not available, as registration was a once-only process. Just over half of the population in Metropolitan Adelaide were estimated to be covered by private health insurance on 30 June 2001 (54.3%, 581,632 people); coverage in country South Australia was a lower 43.6% (Table 7.32).

Table 7.32: People covered by private health insurance, 30 June 2001

Per cent

Section of State	No.	%
Metropolitan Adelaide (incl. Gawler)	581,632	54.3
Country	172,918	43.6
South Australia	754,551	51.4

[4] At 30 June 2001, all Australians, eligible for Medicare and covered by a health insurance policy offered by a registered health fund, were eligible for a rebate of 30% on the cost of private health insurance premiums on hospital cover, ancillary cover and a combination of both. The rebate can be taken as a direct premium reduction, a refundable tax offset or a direct payment available from Medicare offices: the data shown here do not include claims made as a tax refund. The Health Insurance Commission, which provided these data, advises that the number of people reported is, therefore, an underestimate of the total number with private health insurance cover; they also advise that the extent of understatement varies between regions. The authors' view is that any understatement in the level of cover is likely to be of people in higher (rather than lower) socioeconomic status areas due to the delay associated with receiving the rebate through tax returns.

Metropolitan regions

The geographic distribution in the metropolitan regions of the population with private health insurance cover (Map 7.26) is consistent with that of higher socioeconomic status residents shown in Chapters 4 and 5. The correlation analysis also shows a very strong association at the SLA level between high rates of private health insurance cover and socioeconomic advantage: the strength of this association is summarised by the very strong correlation (0.86) with the Index of Relative Socio-Economic Disadvantage (Table 8.1).

Central Northern Adelaide

There were 393,238 people with private health insurance in Central Northern, 53.1% of the population in the region (Table 7.33). Approximately three quarters of the populations in the SLAs of Adelaide Hills - Central (76.4%, 9,345 people), Burnside - North-East (76.2%, 15,026) and Burnside - South-West (73.4%, 14,785) had private health insurance. There were also high coverage rates in the SLAs of Walkerville (71.9%, 4,920 people), Adelaide Hills - Ranges (69.3%, 7,576), Charles Sturt - Coastal (68.4%, 20,669) and Unley - East (68.2%, 13,075).

There were large numbers of people with private health insurance cover in the SLAs of Tea Tree Gully - South (20,229 people, 61.5%), Campbelltown - East (17,313, 66.3%) and West Torrens - West (16,508, 59.7%).

The SLAs with the lowest rates of private health insurance cover in the region were Playford - Elizabeth (30.0%, 8,152 people), - West Central (32.4%, 4,098), - Hills (41.5%, 1,111), - East Central (38.0%, 6,017) and - West (41.2%, 3,251); Port Adelaide Enfield - Port (31.0%, 7,791), - Inner (37.7%, 7,350) and - East (43.0%, 11,718); Salisbury Balance (32.4%, 1,473), - Central (36.3%, 9,781) and - Inner North (37.1%, 8,782); Adelaide (37.1%, 6,629), and Charles Sturt - North-East (40.0%, 9,715 people).

Southern Adelaide

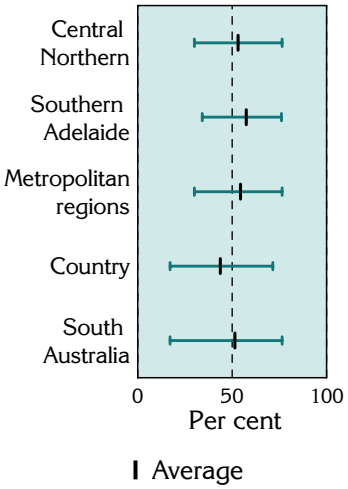
Rates of private health insurance cover in Southern region were higher than in Central Northern region, with 57.4% insured (179,967 people). The SLAs with the highest coverage rates were Mitcham - North-East (76.1%, 11,554 people) and - Hills (73.5%, 16,944), and Onkaparinga - Reservoir (68.4%, 16,162).

Large numbers of residents in Onkaparinga - Woodcroft (19,035 people, 57.6%) and Marion - Central (18,480, 57.9%) had private health insurance.

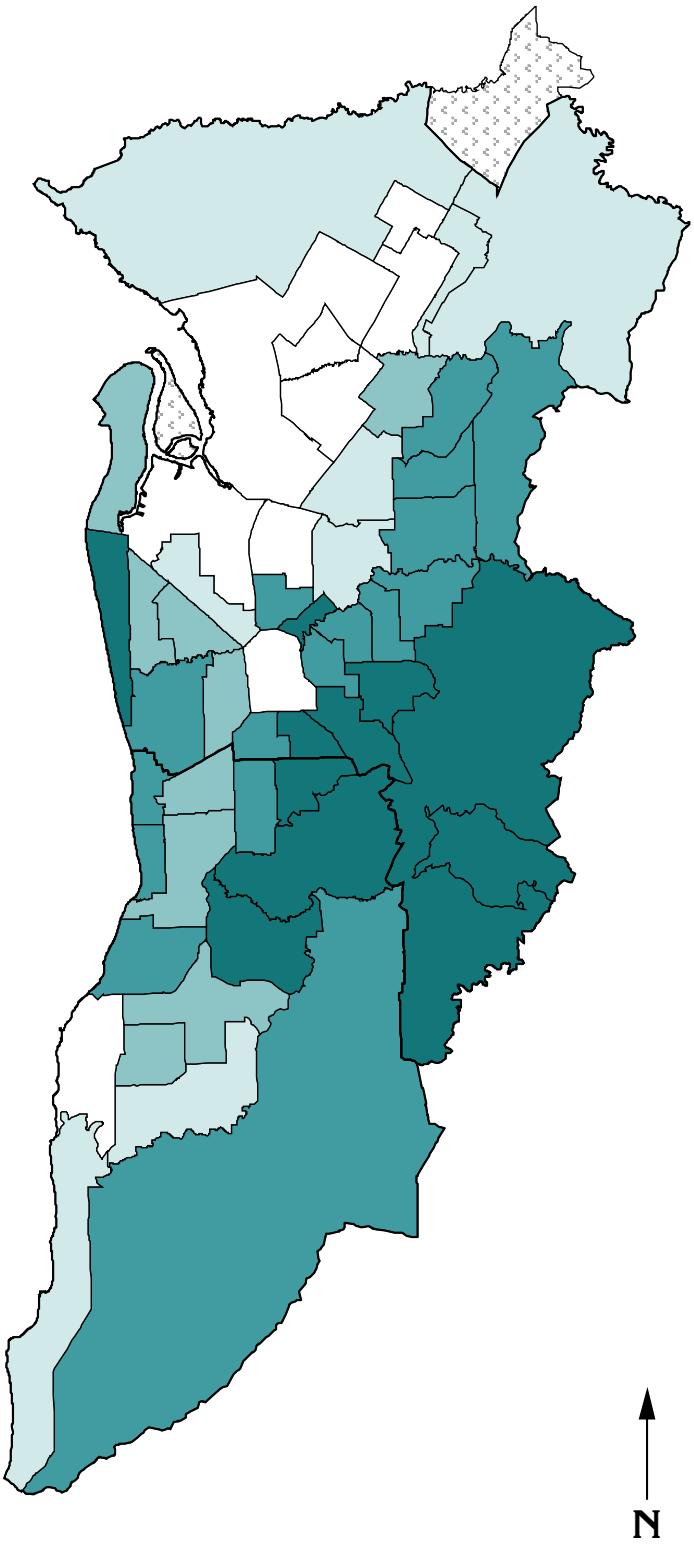
There were fewer SLAs with low coverage rates in the south, with Onkaparinga - North Coast (34.1%, 5,821 people) the only SLA mapped in the lowest range. There were also low proportions of insured residents in the Onkaparinga SLAs of - South Coast (39.5%, 8,861), - Hackham (40.1%, 5,465) and - Morphett (48.4%, 12,177).

* **indicates statistical significance: see page 24**

Map 7.26
People covered by private health insurance, metropolitan regions, 30 June 2001



Note: The black vertical lines show the average proportion for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Per cent covered by private health insurance, by SLA

- *68.0% or more*
- *58.0 to 67.9%*
- *48.0 to 57.9%*
- *38.0 to 47.9%*
- *fewer than 38.0%*
- *data not mapped#*

#*Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Country South Australia

There were 181,346 people with private health insurance in country South Australia at 30 June 2001, or less than half of the population (43.7%), compared with over half (54.4%) in the metropolitan regions (Table 7.33). The lack of easy access to private hospitals for country residents is likely to be part of the reason for the lower level of uptake of private health insurance.

Table 7.33: Regional totals, private health insurance, 30 June 2001

Region	No.	% of Region	% of State
Hills Mallee Southern	50,192	46.4	3.4
Wakefield[1]	44,880	47.1	3.0
South East	28,715	47.2	1.9
Northern & Far Western	17,901	33.9	1.2
Eyre	13,231	39.4	0.9
Mid North	12,906	41.9	0.9
Riverland	13,521	40.5	0.9
Country SA	**181,346**	**43.7**	**11.6**
Central Northern	393,238	53.1	26.3
Southern	179,967	57.4	12.0
Metropolitan regions	**573,205**	**54.4**	**38.9**
South Australia	**754,551**	**51.4**	**100.0**

[1]**Gawler is included in the Wakefield region**

The correlation analysis shows a weak association at the SLA level between high rates of private health insurance and socioeconomic advantage (Table 8.2).

The Regions

The highest rate of coverage was in **South East** (47.2%, 28,715 people). Around half the residents in Mount Gambier (52.5%, 10,463), Naracoorte and Lucindale (51.9%, 3,985) and Tatiara (49.9%, 3,627) had private health insurance. There were also relatively large numbers of privately insured people in Wattle Range - West (3,919, 43.2%), Tatiara (3,627, 49.9%), Grant (3,516, 35.3%), Wattle Range - East (1,537, 48.5%), and Lacepede (1,024, 45.0%).

A similar proportion of residents in **Wakefield** had private health insurance (47.1%, 44,880 people). The SLAs with the highest proportions of insured residents were Barossa - Tanunda (56.4%, 2,420), - Angaston (53.4%, 3,763) and - Barossa (51.6%, 3,747); Yorke Peninsula - North (51.9%, 3,908); and Clare and Gilbert Valleys (50.9%, 4,114). Gawler had 8,427 residents with private health insurance (45.9%).

In **Hills Mallee Southern**, 50,192 people had private health insurance, representing 46.4% of the population. The highest rates of coverage were in Adelaide Hills Balance (60.4%, 5,013), Adelaide Hills - North (59.5%, 3,981), Southern Mallee (56.9%, 1,195), The Coorong (53.9%, 2,981), Mount Barker Balance (52.4%, 4,171), Mount Barker - Central (50.6%, 7,246), Yankalilla (50.3%, 1,815) and Alexandrina - Strathalbyn (50.1%, 4,254). The lowest rates were in Kangaroo Island (33.4%, 1,689), Mid Murray (33.6%, 2,914) and Karoonda East Murray (33.8%, 536). There were also large numbers of insured in Murray Bridge (5,778, 36.2%) and Victor Harbor (4,874, 46.1%).

In **Mid North**, 41.9% of residents were insured (12,906 people). The highest proportion of residents with private health insurance in country South Australia was located in Orroroo/Carrieton (71.5%, 600 people); and half the population in Unincorporated Pirie had this cover (50.2%, 181). The SLA with the lowest proportion of insured residents was Peterborough (28.0%, 589). There were larger numbers of insured in Port Pirie - City (5,250, 38.2%), Northern Areas (2,302, 49.2%), Port Pirie Balance (1,624, 49.6%) and Mount Remarkable (1,367, 42.9%).

In **Riverland**, 40.5% of residents had private health insurance (13,521 people). Although none of the SLAs mapped in the highest range, there were relatively large numbers of insured residents in Renmark Paringa - Renmark (3,195, 39.7%), Loxton Waikerie - East (3,120, 41.9%) and Berri and Barmera - Berri (2,814, 40.3%).

In **Eyre**, 39.4% of residents had private health insurance (13,231 people). Within this region, the SLAs with the highest rates were Cleve (56.6%, 1,060) and Kimba (55.8%, 641). There were low proportions of insured residents in Unincorporated West Coast (26.2%, 211) and Ceduna (27.2%, 1,013). Port Lincoln (5,117, 37.6%), Lower Eyre Peninsula (1,502, 38.4%) and Tumby Bay (1,149, 43.2%) had relatively larger numbers of insured residents.

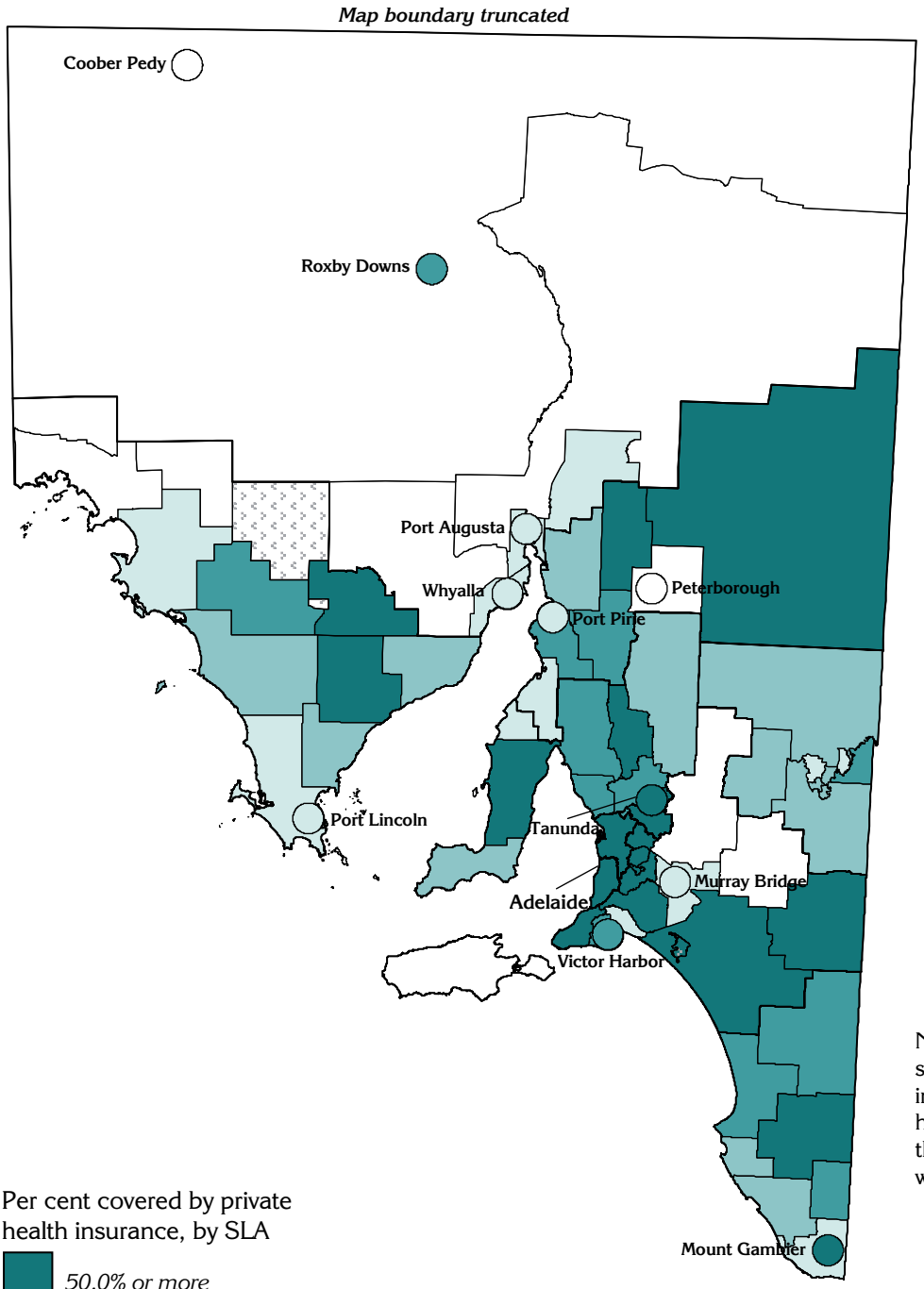
Just one third of the population in **Northern and Far Western** had private health insurance (33.9%, 17,901 people). The SLAs with the lowest rates were Unincorporated Far North (17.1%, 888 people), Coober Pedy (18.9%, 561), Unincorporated Flinders Ranges (23.7%, 476) and Unincorporated Whyalla (33.7%, 129). There were much larger numbers of insured residents in Whyalla (7,954 people, 37.0%), Port Augusta (4,889, 35.6%) and Roxby Downs (2,294, 45.6%).

ASGC remoteness classification

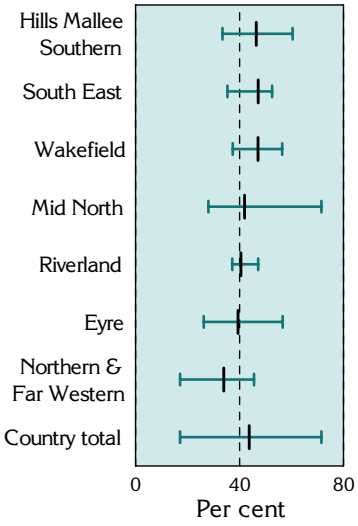
The level of private health insurance cover drops off rapidly across the remoteness classes, from 54.3% in the Major Cities areas, to less than half of that in the Very Remote areas (25.3%).

* **indicates statistical significance: see page 24**

Map 7.27
People covered by private health insurance, South Australia, 30 June 2001



SLA
Health Region



Average

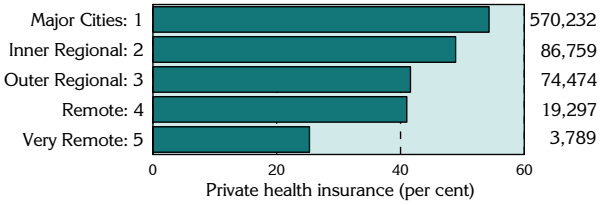
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Per cent covered by private health insurance, by SLA

- *50.0% or more*
- *45.0 to 49.9%*
- *40.0 to 44.9%*
- *35.0 to 39.9%*
- *fewer than 35.0%*
- *data not mapped#*

#Data were not mapped because the SLA has a population of less than 100

ASGC Remoteness classification People



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

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Hospital admissions

Introduction

Information available for hospital admissions includes the age, sex, diagnoses and surgical and other procedures, as recorded in the patient's case notes at the time of discharge, transfer or death. Importantly, for spatial analysis, the postcode or SLA of the address of usual residence of the patient is also recorded.

Admissions are of South Australian residents admitted to a hospital in Australia: the SLA data mapped is the SLA of the usual residential address.

Terminology

The technical term describing a completed hospital episode (i.e. the discharge, death or transfer of a patient) is a 'separation'.

At the time of admission, the age, sex, address of usual residence and other personal details of the patient are recorded. At the end of the episode, at the time of separation from hospital, details of the episode itself are recorded, including the principal diagnosis (and other diagnoses), principal procedure (and other procedures), and the date, time and method (discharge, transfer or death) of separation.

Consequently, hospital inpatient data collections are based on separations.

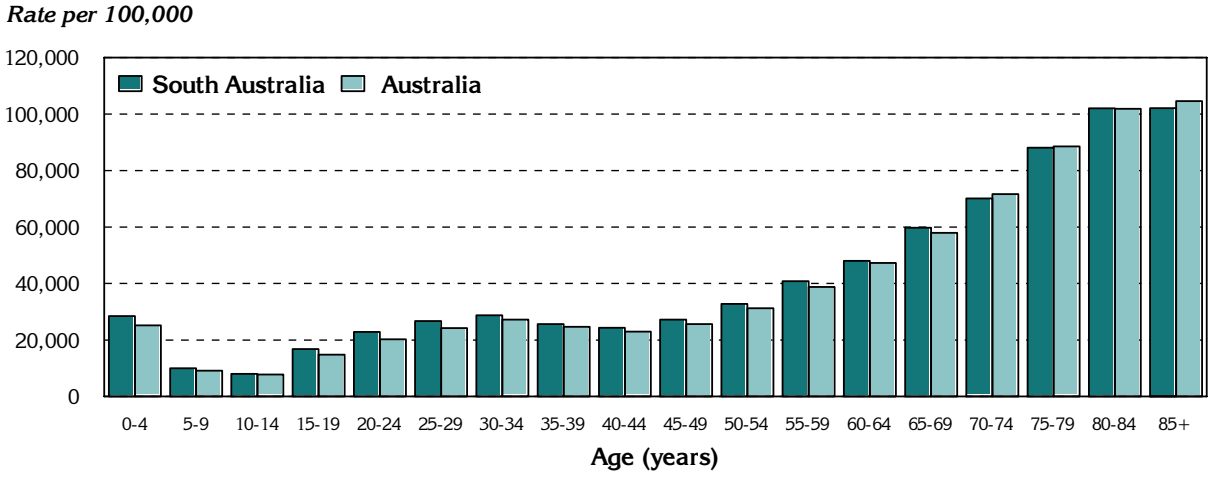
In this atlas, the more commonly used term of 'admission' has been used. In an analysis such as this, which excludes long stay patients (other than the few long stay acute patients), there is little difference between the number of admissions and the number of separations in a year. Also, 'admission' is a much more familiar term to many people who will use this atlas.

The maps in this chapter show the spatial patterns of admissions and procedures. The following text describes some of the differences evident in the data in hospitalisation rates for specific population groups. Where available, comparisons are made with the data from earlier periods.

Differences between South Australia and Australia

Admission rates for residents of South Australia and Australia were similar across the age groups, although there were higher rates recorded in South Australia for all people other than those aged 70 to 74, 75 to 79 and 85 years and over (Figure 7.2).

Figure 7.2: Admissions to public acute and private hospitals by age, South Australia and Australia, 2003/2004



Differences related to age, sex and hospital type

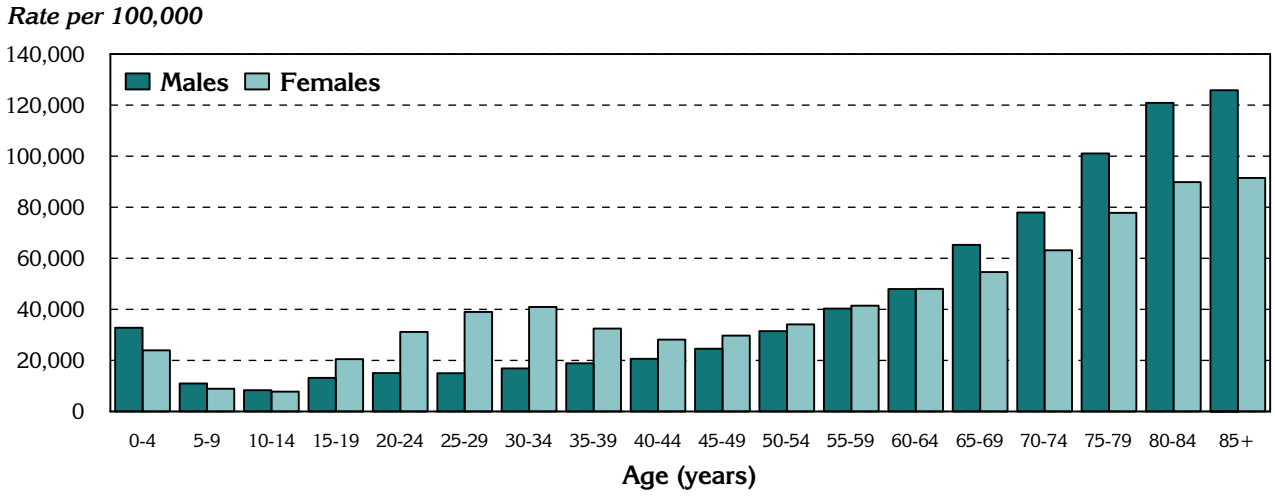
Figures 7.3 to 7.5 show the rates of admission per 100,000 population to public acute and private hospitals of residents of South Australia, for each five-year age group.

Females accounted for just over half (54.9%) of all admissions in 2003/2004 (Figure 7.3). However, this pattern is not consistent across all age groups. The largest divergence in admission rates for males and females occurs in the 25 to 29 year age group, with the female rate 2.6 times that for males.

The difference in rates in the 20 to 24 (2.1 times), 30 to 34 (2.4 times) and 35 to 39 (1.7 times) year age groups were slightly smaller, but female admission rates were still well above those for males. The higher admission rates at these ages largely reflect episodes of hospitalisation for childbirth and associated admissions.

In contrast, admission rates for males were higher than for females at ages 0 to 14 years (most notably at ages 0 to 4, with males' rates 1.4 times higher), and from age 65 (with the greatest disparities in admission rates at ages 75 to 84 years with a differential of 1.3; and at 85 years and over, with a differential of 1.4).

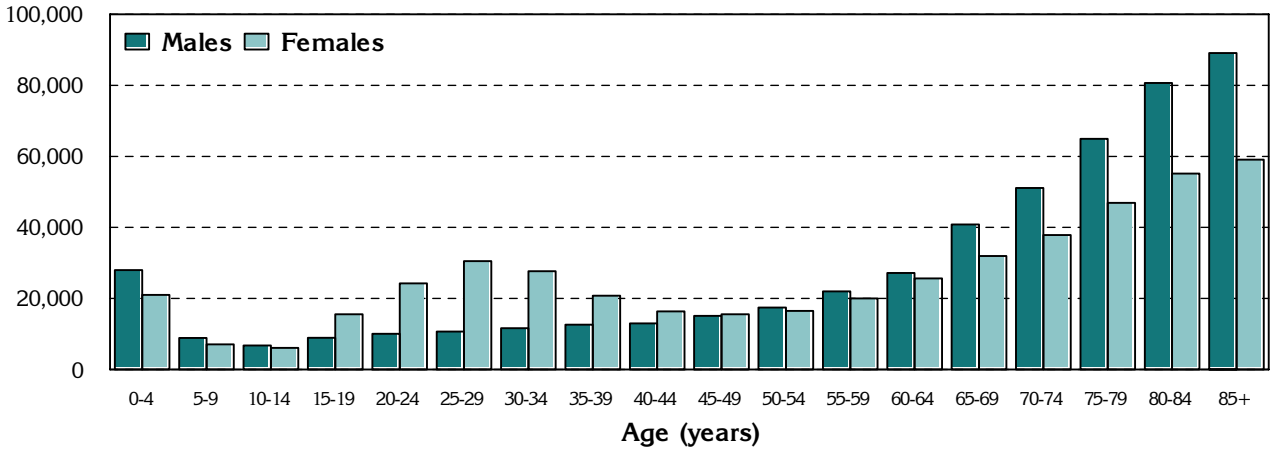
Figure 7.3: Admissions to public acute and private hospitals, by age and sex, South Australia, 2003/2004



The profile of admissions to public acute hospitals (Figure 7.4) is markedly similar to that for all admissions (Figure 7.3). Higher rates of admissions of females are evident from the 15 to 19 year age group through to the 45 to 49 year age group. Male admission rates are highest at the youngest ages, and from the 50 to 54 year age group, onwards.

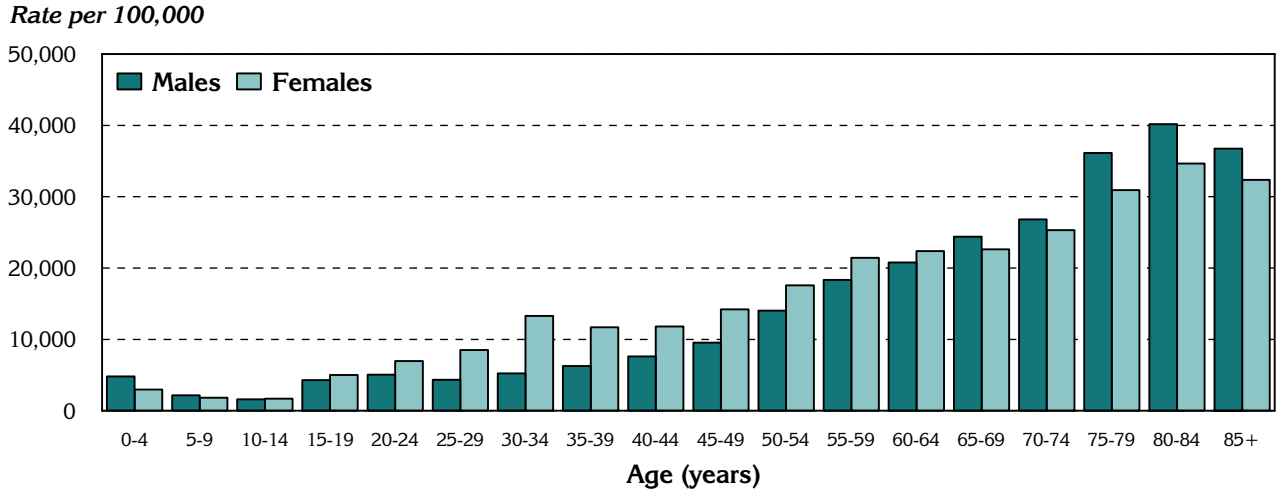
Overall, private hospital admissions accounted for 36.0% of all admissions analysed for South Australia. Females make greater use of private hospitals than do males, with admissions to private hospitals representing 37.1% of all female admissions studied (compared with 34.7% for males) and accounting for 56.5% of private hospital admissions (53.9% in public acute hospitals).

Figure 7.4: Admissions to public acute hospitals, by age and sex, South Australia, 2003/2004



The pattern of admissions to private hospitals by age and sex (Figure 7.5) is again similar to that in the previous graphs. The most noticeable differences are the lower overall rates of admission and the decreased differential between males and female admissions among those aged 15 to 44 years.

Figure 7.5: Admissions to private hospitals, by age and sex, South Australia, 2003/2004



Differences related to area of residence

In addition to the differences described above (as to variations in admission rates between population groups), there have, for many years, been notable variations in admission rates between residents of Metropolitan Adelaide and country South Australia. Generally, admission rates are higher for country residents than they are for city residents, when allowance is made for country residents admitted to city hospitals (and for the much smaller number of admissions of city residents to country hospitals). Examples of these differences can be seen throughout this chapter. However, the differential is now considerably less than it has been in the past, as a result of the substantially stronger growth in admission rates for residents of Metropolitan Adelaide; this is discussed on page 387, in relation to public acute and private hospitals, and also in relation to the variables mapped on subsequent pages.

Some suggested reasons for the higher admission rates of country residents include the following factors.

Isolation and distance

Factors such as distance and the isolation of people living in these, often remote, areas are important. In country areas, people are more likely to be admitted 'for observation' than to be sent home, if their usual residences are a significant distance from the hospital.

Higher risks of injury

A higher proportion of the population of country areas is engaged in activities in agriculture and the mining industry, which have relatively high rates of accidents and injuries, often leading to hospitalisation. A higher rate of motor vehicle traffic accidents for people living in rural and remote areas, who are driving both longer distances and more frequently, is also a contributing factor.

Limited range of, and access to, community-based care and respite care services

In the absence of a full range of community-based care, respite care and other services, hospitals in country areas often have a 'surrogate' caring role. This includes, in some instances, admitting people who would otherwise go to specialist psychiatric hospitals; or providing the respite care found in other types of institutions in major urban centres for the aged and younger people with physical and intellectual disabilities. There are also occasions where the circumstances of individuals or families are such that they do not have adequate resources and/or support available, leading to hospital admission. For example, a child of a single parent, living in a country town where there are limited family or community support services, is more likely to be admitted to hospital for a minor condition, or for observation. This type of situation is often referred to as a 'social admission'.

Ready availability of beds

There is clear evidence that if there is a ready supply of hospital beds, they will be used; this is particularly likely to occur when linked with a lack of appropriate alternative services as mentioned above. Generally more beds are available in country areas, per head of population, than in city hospitals.

Differences related to Indigenous status

In addition to the greater burden of ill health noted earlier, higher rates of hospitalisation are evident for the Indigenous population in some country areas with relatively larger Indigenous populations. This is generally not so for the **Northern and Far**

Western region where, despite a relative large Indigenous population, admission rates are among the State's lowest. The low rates arise from a mix of factors, including the lack of hospitals in the area, with admissions that do occur being to hospitals in Alice Springs or in Adelaide, and often not being correctly linked back to the region. This is also likely to be an issue for other areas with relatively large Indigenous populations, keeping the admission rates lower than they actually are.

Explanatory notes

Classification of hospitals

Hospitals can be classified as 'acute hospitals' or 'psychiatric hospitals'. Acute hospitals are those which

> "*provide at least minimal medical, surgical or obstetrical services for inpatients, and which provide round-the-clock comprehensive qualified nursing services as well as other necessary professional services. They must be licensed by the State health authority controlled by government departments. Most of the patients have acute conditions or temporary ailments and the average stay per admission is relatively short*" (AIHW 1999).

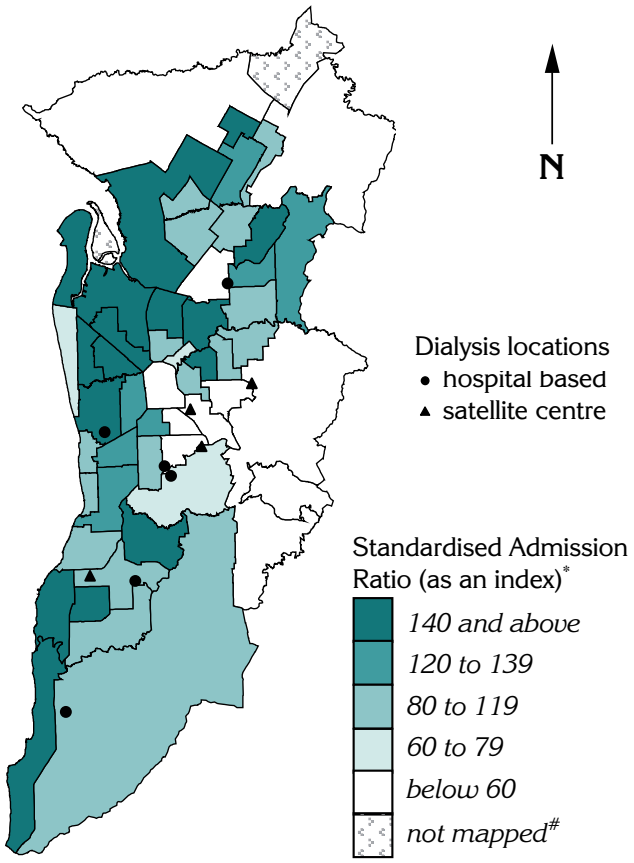
Acute hospitals are further classified as 'public' (those hospitals recognised under the Medicare agreement, plus Veterans' Affairs' hospitals) or 'private'. Psychiatric hospitals mainly provide treatment and care to patients with psychiatric, mental or behavioural disorders. Public psychiatric hospitals treat people with the most severe psychiatric conditions and are not included in this analysis (this group tends to be mainly older people and to have longer lengths of stay). Public acute and private (acute and psychiatric) hospitals treat people with less severe psychiatric conditions[5] and are included in the analysis.

Coverage

Hospital admissions' data presented here include episodes of hospitalisation in public acute and private (acute and psychiatric) hospitals. All admissions have been included, with the exception of same day admissions for renal dialysis.

Same day admissions for renal dialysis have been excluded as they cover many repeat visits by a relatively small number of patients, who may have several admissions in a week. Further, an examination of the data has, in the past, suggested that some patients have changed address to live close to the location of renal dialysis facilities, thus distorting the patterns of use by address of usual residence. The current pattern (Map 7.28) suggests that although the western and north-western SLAs still predominate in the rates, the effect described above may have lessened, as dialysis has been provided at more locations.

Map 7.28: Same day admissions for renal dialysis, metropolitan regions, 2003/2004



*Index shows the number of admissions of people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data for Torrens Island are mapped with Port Adelaide: Gawler not mapped

Removing these admissions from the analysis resulted in the exclusion of 51,491 admissions in 2003/2004, ten per cent of all admissions and 17.1% of same day admissions (Table 7.34). In this way, the major distorting influence is removed, but the large number of other same day admissions is included. It should be noted that admissions for renal dialysis which were excluded were those admissions specifically for dialysis (i.e. for continuous ambulatory dialysis). Admissions, during which renal dialysis was undertaken as an integral component of the episode, are included.

It should also be noted that the acute episodes analysed include repeat admissions, although not to the extent occurring among same day patients (in particular same day admissions for chemotherapy, or renal dialysis).

[5]A small number of public acute hospitals have dedicated psychiatric units. Patients treated in these hospitals (but not in the psychiatric unit) as well as in private hospitals may, at the end of their hospital episode, be given a diagnosis indicating their principal condition was a psychiatric disorder. These cases are included in the maps in this atlas.

Table 7.34: Hospital admissions by principal diagnosis and procedure, South Australia, 2003/2004

Principal diagnosis/procedure	Same day		Overnight		Total	
	No.	%	No.	%	No.	%
Principal diagnosis						
Infectious and parasitic diseases	1,784	0.7	5,403	2.0	7,187	1.4
Cancer						
lung cancer	409	0.2	1,436	0.5	1,845	0.4
cancer of the female breast	264	0.1	1,485	0.5	1,749	0.3
Total cancer	24,341	10.0	19,864	7.3	44,205	8.6
Mental disorders						
psychosis	2,815	1.2	11,868	4.4	14,683	2.9
neurotic, personality or other mental disorder	788	0.3	3,720	1.4	4,508	0.9
Total mental disorders	3,611	1.5	15,611	5.7	19,222	3.7
Circulatory system diseases						
ischaemic heart disease	3,973	1.6	22,095	8.1	26,068	5.1
Total circulatory system diseases	8,788	3.6	28,359	10.4	37,147	7.2
Respiratory system diseases						
bronchitis, emphysema or asthma	1,114	0.5	9,753	3.6	10,867	2.1
0 to 4 year olds	890	0.4	4,989	1.8	5,879	1.1
Total respiratory system diseases	4,088	1.7	26,865	9.9	30,953	6.0
Accidents, poisonings and violence	9,605	4.0	25,053	9.2	34,658	6.7
All causes (excl. renal dialysis)						
males	111,099	45.8	121,362	44.6	232,461	45.1
females	131,740	54.2	150,784	55.4	282,524	54.9
Public acute hospitals (excl. renal dialysis)	142,620	58.7	186,821	68.6	329,441	64.0
Private acute & psychiatric hospitals (excl. renal dialysis)	100,219	41.3	85,325	31.4	185,544	36.0
Total admissions (excl. renal dialysis)	242,839	100.0	272,146	100.0	514,985	100.0
Total admissions						
admissions for renal dialysis	58,707	19.5	11	0.0	58,718	10.2
all other admissions	242,839	80.5	272,146	100.0	514,985	89.8
Total admissions (incl. renal dialysis)	301,546	100.0	272,157	100.0	573,703	100.0

Change in number and rate of hospital admissions

Over the period 1992/1993 to 2003/2004, there was strong growth in hospital admissions, with notable changes in the mix of admission type, sector of service provider and location of patient residence (Table 7.35).

Overall, admissions have increased by 36.5% over this eleven-year period; when adjusted for population growth, the increase is 25.9%.

By admission type

Growth in same day admissions (excluding admissions for renal dialysis) accounts for all of the increase in admissions over this eleven-year period. The number of admissions has increased by 143.5%, and is still more than double the number in 1992/1993, after adjusting for population growth (an increase of 124.6%). At the same time, admissions involving an overnight stay have declined by 2.0% (9.6% when adjusted for population growth).

In 1992/1993, renal dialysis accounted for 28,652 same day admissions, over and above the 71,091 same day admissions for other reasons; by 2003/2004, the respective figures were 58,707 and 184,132.

Thus, while same day admissions (excluding those for renal dialysis) have increased by 143.5%, admissions for renal dialysis have also shown a notable increase, of 104.9% (89.0% when adjusted for population growth).

By sector

The strongest growth has been in the private sector, with admissions up by almost two thirds (61.3%), or nearly one half (48.8%) after allowing for population growth. The public sector growth rate was substantially lower, at one quarter (25.6%, or 15.8% allowing for population growth).

Growth in the private sector has come from same day admissions, with declines in overnight stays (217.4%; 192.8% after adjusting for population growth), compared with a growth of 109.2% (93.0% after adjusting for population growth).

By residence of the patient

Overall, the rate of growth in admission rates from 1992/1993 to 2003/2004 for city residents (43.5%) was 2.4 times higher than that for country residents (20.7%); the respective rates after adjusting for population growth were 30.9% and 14.8%, with a smaller differential, of 2.1 times.

The difference in growth of city to country rates in the public sector is substantially greater, with an increase (after adjusting for population change) of 23.0% for city residents, compared with 5.3% for country residents.

Growth in admission rates to private hospitals of country residents were, however, substantially (69.0%) higher than for city residents over this period (74.2% compared to 43.9%).

After allowing for population change, growth is almost exclusively driven by the increase in same day admissions, for both city and country residents, and for public and private hospitals. Admission rates for city residents admitted overnight were down by 7.9% (at the same time as same day admission rates more than doubled, to be up by 130.8%); for country residents, overnight admissions were down by 12.7%. In Metropolitan Adelaide, there were declines in both public and private rates of overnight admissions (down by 7.0% and 9.3% respectively). Residents of country South Australia also had fewer admissions to public hospitals per head of population (16.6%); in contrast, admission rates to private hospitals for country residents increased by 13.0%.

The rate of growth in renal (same day) admissions was also higher for city residents, up by 94.5% compared with strong growth of 56.7% for country residents (both after allowing for population growth), a differential of 1.7 times.

Table 7.35: Change in hospital admissions by admission type, South Australia, 1992/1993 to 2003/2004

Per cent change

Admission type	Hospital type	Metropolitan Adelaide		Country South Australia		South Australia	
		No.	Rate	No.	Rate	No.	Rate
Same day	**Total**	153.0	130.8	117.5	106.9	143.5	124.6
	Public	119.8	100.3	88.4	79.6	109.2	93.0
	Private	207.3	180.7	290.3	269.8	217.4	192.8
	Renal	111.1	94.5	69.3	56.7	104.9	89.0
Overnight	**Total**[1]	1.0	-7.9	-8.2	-12.7	-2.0	-9.6
	Public	2.0	-7.0	-12.5	-16.6	-3.8	-11.2
	Private	-0.8	-9.3	19.3	13.0	2.2	-5.7
Total	**Total**	43.5	30.9	20.7	14.8	36.5	25.9
	Public	34.9	23.0	10.5	5.3	25.6	15.8
	Private	57.6	43.9	83.9	74.2	61.3	48.8
	Renal	110.9	94.3	69.3	56.7	104.7	88.8

[1]**Includes a small number of renal patients staying overnight**

Data issues

Data mapped

The analysis presented in this report has been restricted to admissions for all causes, separately for public acute and private hospitals, and for females and males. Admission rates for selected diagnoses (based on the patient's principal diagnosis) and selected procedures (based on the patient's principal procedure) can be found on the PHIDU website at: www.publichealth.gov.au.

Measure mapped

Standardised admission ratios (SARs) have been calculated at the SLA level by indirect age standardisation; the ratios are presented as an index, with ratios elevated above the State ratio expressed as index numbers of 101, or higher; and those below the State ratio expressed as index numbers of 99, or lower. An SAR of 120 for an SLA indicates that there were 20% more admissions from that SLA than were expected from the State rates. An SAR of 90 indicates that there were ten per cent fewer admissions from that SLA than would be expected from the State rates. A description of the technique of standardisation is in Appendix 1.3.

For ease of reading, SARs are on occasion referred as being 'above' or 'below' the State average, rather than as being higher or lower than 'expected from the State rates'.

Admissions of Indigenous peoples

Identification of Aboriginal and Torres Strait Islander peoples in hospital inpatient collections is inconsistent and subject to variability between geographic regions: this is relevant to admission rates of people from **Northern and Far Western** region (see Caution, page 385). Readers are also referred to the South Australian Aboriginal Health Partnership's *Knowing the Business* (SAAHP 2005).

Individuals and events

Background

The lack of a unique patient identifier[6] in the hospital inpatient data collection means that data are only available for the number of events (admissions), rather than for the individuals admitted. Although many hospitals have unique identifiers for patients within their hospitals, such identifiers are not available between hospitals. Thus, the data presented in this chapter include repeat admissions and are, therefore, of limited value in describing patterns of hospitalisation for individuals, as it is unclear to what extent variations between areas in admission rates reflect, for example, more individuals being admitted to hospital, more admissions per person, or a mix of both. This issue also applies to other collections of service utilisation data, such as general medical practitioner services.

Where data are available for both individuals and admissions, they can be used to determine if area-based analyses using admissions (rather than individuals) provide valid results. Such data are available from the Western Australian Data Linkage System (WADLS)[7]: an analysis of the WADLS showed there to be both more people admitted from Perth's most disadvantaged areas (13% more), and more admissions per person from these areas (47% more), than from the most advantaged areas (Glover et al. 2004).

A recent development has made it possible to obtain an insight into the extent to which the Western Australian data reflects the situation in South Australia. Inpatient data with a unique patient identifier are now available for a majority of the public acute hospitals in Metropolitan Adelaide from Oacis, an open architecture clinical information system. An application was made to the Departmental Human Research Ethics Committee for access to de-identified, unit record data for individuals admitted to hospital in 2003/2004.

The application was approved and the requested data were supplied by the Clinical Reporting Repository, Department of Health, for the Flinders Medical Centre, Lyell McEwin Hospital, Noarlunga Health Service, The Queen Elizabeth Hospital, Royal Adelaide Hospital, Repatriation General Hospital and the Women's and Children's Hospital. Data for Modbury Hospital and private hospitals in Adelaide are not available. Patients from outside of Metropolitan Adelaide attending the hospitals were analysed separately.

The data were age-standardised, and an analysis was undertaken to identify geographic variations in hospital episodes for individuals and admissions. A summary of the results of the analysis follows.

Results for public acute hospitals: residents of Metropolitan Adelaide

In 2003/2004, there were 188,291 admissions of Adelaide residents to public acute hospitals (excluding Modbury) in Metropolitan Adelaide (including Gawler), representing 103,077 individuals or an average of 1.8 admissions per person (Table 7.36). Of the 103,077 individuals admitted, just over two thirds (67.0%) were admitted once, a further 18.0% were admitted twice, 6.7% were admitted three times and 8.3% were admitted four or more times. This latter group (with four or more admissions) accounted for almost one third (32.5%) of all admissions: the potential impact of this group on the use of resources is highlighted by a comparison with individuals admitted only once who, despite representing two thirds of individuals, accounted for only 36.7% of admissions.

Thus, the one third of Metropolitan Adelaide residents with multiple admissions to these hospitals accounted for almost two thirds of admissions (the actual proportions are 33.0% of individuals and 63.3% of admissions, respectively).

Country residents

Some 17,113 people from country South Australia (excluding Gawler) were admitted to these hospitals, with a total of 28,741 admissions (Table 7.36). This is an average of 1.7 admissions per person, just below the average for residents of Metropolitan Adelaide (1.8 admissions per person). Country residents admitted to these hospitals differed most from city residents in having proportionately more single admissions to these public acute hospitals in 2003/2004, with fewer people being recorded with three admissions.

Additional details on country residents admitted to the hospitals in this analysis are on page 385.

[6] Many hospitals have unique identifiers for patients within their hospitals; however, such identifiers are not available between hospitals. Although potentially useful as an identifier, the Medicare number is not always included on inpatient records; nor is it a unique identifier, with some individuals having more than one number.

[7] The aim of WALDS is to link unit records from core Department of Health data collections and other relevant data collections, for the purpose of providing linked data to support health planning, purchasing, evaluation and public health research.

Table 7.36: Metropolitan Adelaide residents admitted to selected public acute hospitals[1], 2003/2004

Admissions per person	Metropolitan Adelaide (incl. Gawler)				Country South Australia			
	Individuals		Admissions		Individuals		Admissions	
	No.	%	No.	%	No.	%	No.	%
Individuals admitted								
• once	69,104	67.0	69,104	36.7	12,511	73.1	12,511	43.5
• twice	18,605	18.0	37,210	19.8	2,753	16.1	5,506	19.2
• three times	6,902	6.7	20,706	11.0	823	4.8	2,469	8.6
• four or more times	8,466	8.3	61,271	32.5	1,026	6.0	8,255	28.7
Total	**103,077**	**100.0**	**188,291**	**100.0**	**17,113**	**100.0**	**28,741**	**100.0**

[1]Excludes Modbury Hospital and admissions for renal dialysis

The number of admissions per individual shows little variation at the SLA level (Table 7.37), although admissions are somewhat lower in Southern region than in Central Northern region.

Table 7.37: Admissions and individuals admitted to selected public acute hospitals[1], Metropolitan Adelaide residents, 2003/2004

SLA	Admissions		Individuals		Admissions per individual
	No.	Ratio	No.	Ratio	
Charles Sturt - Inner East	5,135	128	2,612	121	1.97
Charles Sturt - North-East	6,542	145	3,462	141	1.89
Playford - East Central	3,139	131	1,745	127	1.80
Playford - Elizabeth	6,692	142	3,590	138	1.86
Playford - West Central	2,716	140	1,480	133	1.84
Port Adelaide Enfield - Coast	6,696	136	3,429	128	1.95
Port Adelaide Enfield - Port	7,381	160	3,868	154	1.91
Salisbury - Central	5,255	131	2,931	128	1.79
Salisbury - Inner North	4,694	132	2,643	130	1.78
Central Northern Adelaide[2]	**123,909**	**96**	**66,601**	**94**	**1.86**
Onkaparinga - Hackham	3,391	167	2,041	177	1.66
Onkaparinga - Morphett	6,303	161	3,486	157	1.81
Onkaparinga - North Coast	5,262	172	2,885	174	1.82
Onkaparinga - South Coast	5,222	144	3,210	159	1.63
Onkaparinga - Woodcroft	6,604	130	3,792	133	1.74
Southern Adelaide[2]	**61,517**	**113**	**34,829**	**117**	**1.77**

[1]Excludes Modbury Hospital and admissions for renal dialysis
[2]Region total includes all other SLAs in the region

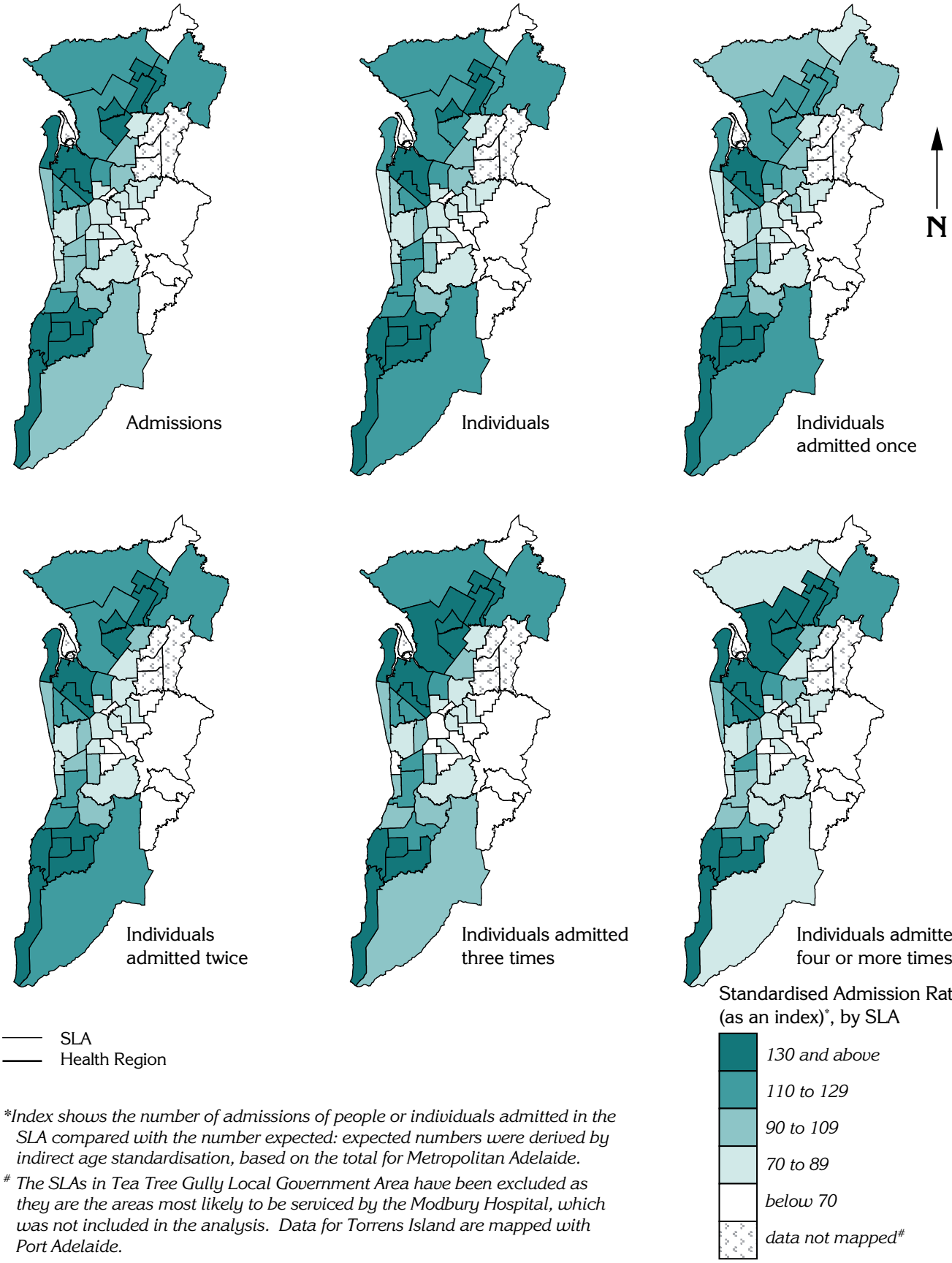
Admission rates vary considerably across Metropolitan Adelaide (Map 7.29), with the north-western, outer northern and outer southern SLAs generally having the highest admission rates; SLAs in and around the city centre and to the east and south-east have the lowest rates.

There is little difference in the geographic distribution of total admissions and admissions of individuals, other than a slightly higher concentration of the highest rates in a smaller number of SLAs, in the north-west and outer northern suburbs. These are Port Adelaide Enfield - Port and Charles Sturt - North-East in the north-west; and the Playford SLAs of - Elizabeth and - East and - West Central; and Salisbury - Inner North in the outer north (Table 7.37).

These variations show that people resident in these areas, together with the Onkaparinga SLAs (other than the - Hills SLA), were the most likely to be admitted to hospital in this 12-month period. No SLA has moved more than one range in the legend mapped, with most movement being down a range, and very few moving up a range.

Further analysis of these data could be undertaken, including by age, for Aboriginal and Torres Strait Islander peoples, and by diagnosis.

Map 7.29
Hospital episodes for total admissions and individuals admitted, Metropolitan Adelaide, 2003/2004



*Index shows the number of admissions of people or individuals admitted in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on the total for Metropolitan Adelaide.

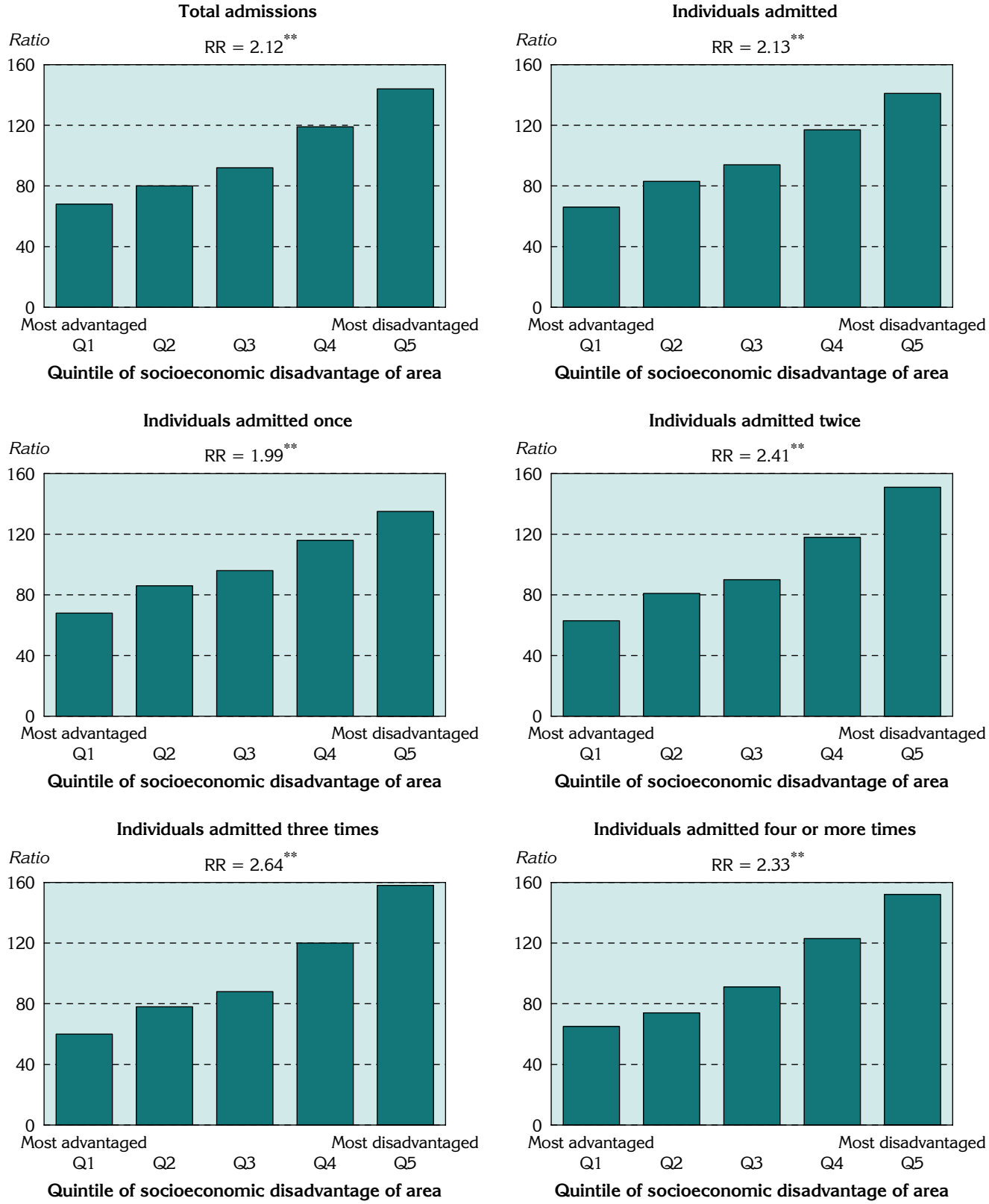
The SLAs in Tea Tree Gully Local Government Area have been excluded as they are the areas most likely to be serviced by the Modbury Hospital, which was not included in the analysis. Data for Torrens Island are mapped with Port Adelaide.

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Figure 7.6 shows the distribution of total admissions and individuals admitted (by number of admissions) by quintile of socioeconomic disadvantage of area for residents of Metropolitan Adelaide. There is a clear socioeconomic gradient in each of the graphs, from the lowest rates in the most advantaged areas to the highest in the most disadvantaged areas.

For total admissions, there are more than twice the numbers of admissions in the most disadvantaged areas (Quintile 5) than in the advantaged areas (Quintile 1), a rate ratio of 2.12. The differential in rates for individuals admitted increases from 2.13 among residents admitted once, to 2.64 and 2.33 among those admitted three, and four or more times, respectively.

Figure 7.6: Hospital episodes for admissions and individuals, by quintile of socioeconomic disadvantage of area, Metropolitan Adelaide, 2003/2004



Results for public acute hospitals: residents of country South Australia

The data presented here are limited to details of admissions of country residents to the public acute hospitals in Metropolitan Adelaide listed on page 434. Table 7.38 shows the number of admissions, the number of individuals admitted and the number of admissions per individual in 2003/2004 of country residents to these hospitals.

The number of admissions per individual for country residents is slightly lower (8.2%) than for metropolitan residents.

Table 7.38: Admissions and individuals admitted to selected public acute hospitals[1] in Metropolitan Adelaide, by health region, 2003/2004

Region	Admissions		Individuals		Admissions per individual
	Number	Ratio	Number	Ratio	
Hills Mallee Southern	10,644	67	6,393	73	1.66
Wakefield (includes Gawler)	8,682	60	4,973	62	1.75
South East	2,721	32	1,629	34	1.67
Northern & Far Western	2,943	41	1,731	43	1.70
Eyre	1,966	41	1,175	44	1.67
Mid North	2,048	44	1,267	50	1.62
Riverland	1,708	35	1,071	40	1.59
Country SA (incl. Gawler)	**30,712**	**51**	**18,239**	**55**	**1.68**
Central Northern Adelaide	**123,909**	**96**	**66,601**	**94**	**1.86**
Southern Adelaide	**61,517**	**113**	**34,829**	**117**	**1.77**
Metropolitan Adelaide (incl. Gawler)[2]	**187,421**	**100**	**102,574**	**100**	**1.83**

[1]Excludes Modbury Hospital and admissions for renal dialysis

[2]Regional totals do not add to the Metropolitan Adelaide total, which includes Gawler

Admissions to public acute and private hospitals, 2003/2004

Patients are usually admitted to hospital either as an emergency or as a booked admission. Emergency admission patients are admitted through the A & E Department. These are seriously injured or ill patients who need immediate treatment. Most patients come into hospital as a booked admission, either as a day patient or an inpatient. A day patient comes to hospital for a test or treatment and returns home the same day. They usually will not stay overnight. An inpatient stays overnight or for a few days at the hospital.

The increase in admission rates of 25.9% over the eleven years from 1992/1993 (Table 7.39) has been due to the increase in same day admissions, and has occurred despite a decline in overnight stays (Table 7.34, page 387). The increase is substantially more marked (2.1 times) in Metropolitan Adelaide (30.9%) than in country South Australia (14.8%), where the rate declined between 1992/1993 and 2003/2004. This has resulted in a substantial decline in the differential in admission rates between country and city residents, from 19.5% in 1992/1993 to 4.8% in 2003/2004: the difference was two per cent in 1998/1999.

Table 7.39: Admissions[1] to public acute and private hospitals

Age-standardised rate per 100,000

Section of State	1992/1993	1998/1999	2003/2004	Per cent change[2]
Metropolitan Adelaide (incl. Gawler)	25,436	33,230	33,297	30.9
Country	30,401	33,894	34,907	14.8
South Australia	26,788	33,390	33,722	25.9

[1] Includes admissions to public acute hospitals, private hospitals and day surgery facilities, including admissions of same day patients, other than for renal dialysis

[2]Per cent change over eleven years in the rate of admissions to public acute and private hospitals

Metropolitan regions

There were 368,141 admissions to public acute and private hospitals of residents of the metropolitan regions (excluding Gawler) in 2003/2004, one per cent fewer than expected from the State rates (a standardised admission ratio (SAR) of 99**); this reflects the higher admission rate for country residents compared with city residents (Table 7.40). Overall, females accounted for over half (55.7%) of admissions.

The correlation analysis shows a weak association at the SLA level between high rates of hospital admission and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

The SAR for the Central Northern region was two per cent lower than expected (an SAR of 98**), with 255,027 admissions. This near-average ratio is comprised of both very high and very low ratios, from an SAR of 162** (1,435 admissions) for residents of Playford - Hills, to an SAR of 70** (4,529 admissions) for Prospect (see graph opposite).

High SARs were recorded the SLAs of Salisbury Balance (161**, 2,768) and - Inner North (108**, 7,393); Adelaide Hills - Ranges (128**, 4,033); Playford - Elizabeth (119**, 10,493), - West Central (111**, 4,085) and - West (110**, 2,771); West Torrens - West (114**, 12,706); Port Adelaide Enfield - Coast (109**, 10,668) and - Inner (107**, 7,782); and Charles Sturt - Inner East (108**, 8,500) and - North-East (108**, 9,680).

Large numbers of admissions were recorded in Tea Tree Gully - South (11,379 admissions, an SAR of 101); Salisbury - South-East (10,977, 97**) and - Central (8,719, 101); Port Adelaide Enfield - East (10,666, 104**) and - Port (9,077, 100); and Charles Sturt - Coastal (10,655, 92**) and - Inner West (9,517, 104**).

Metropolitan SLAs with low ratios included Prospect (an SAR of 70**, 4,529 admissions), Playford - East Central (73**, 4,070), West Torrens - East (77**, 6,510), Burnside - North-East (79**, 6,294), Tea Tree Gully - Central (81**, 6,635), Campbelltown - East (83**, 7,713), Walkerville (85**, 2,278), Unley - East (88**, 6,180) and Norwood Payneham St Peters - West (89**, 5,515).

Southern Adelaide

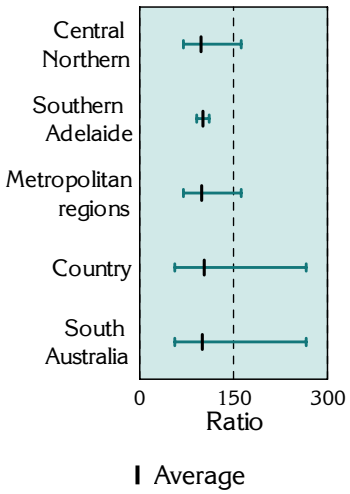
There were 113,114 admissions of residents of the Southern region, one per cent more than expected. Onkaparinga - North Coast (an SAR of 111**, 6,983 admissions) and - Morphett (109**, 8,396), and Marion - North (110**, 11,013) had elevated ratios.

Large numbers of admissions were recorded for the SLAs of Marion - Central (12,641, 100), Onkaparinga - Woodcroft (10,765, 103**) and - Reservoir (7,297, 98), Holdfast Bay - North (8,067, 102), and Mitcham - West (8,032, 97) and - Hills (7,979, 96**).

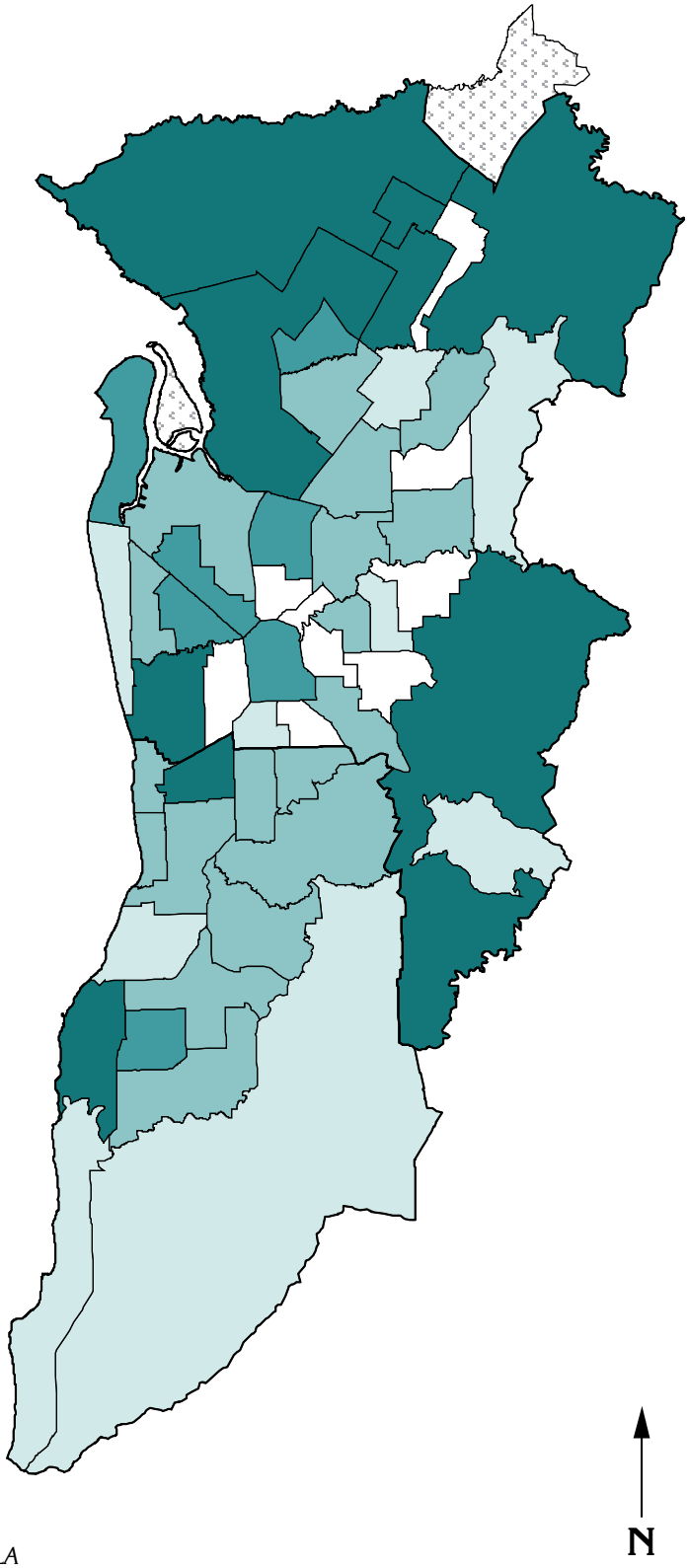
Relatively low ratios were calculated for Onkaparinga - Hills (91**, 3,389 admissions) and - South Coast (94**, 7,175), and Marion - South (91**, 5,420).

* **indicates statistical significance: see page 24**

Map 7.30
Admissions to public acute and private hospitals, metropolitan regions, 2003/2004



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Admission Ratio (as an index)*, by SLA

- *110 and above*
- *105 to 109*
- *95 to 104*
- *90 to 94*
- *below 90*
- *data not mapped#*

**Index shows the number of admissions of people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#*Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map*

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

There were 146,714 admissions to public acute and private hospitals in country South Australia, in 2003/2004, three per cent more than expected from the State rates. The majority of these admissions were to public acute hospitals (78.8%). The **Northern and Far Western** and **Mid North** regions had the highest regional admission ratios in the State (Table 7.40 and Map 7.31).

Table 7.40: Regional totals, admissions to public acute and private hospitals, 2003/2004

Region	No.	SAR
Hills Mallee Southern	37,360	95**
Wakefield[1]	34,797	102**
South East	19,405	95**
Northern & Far Western	19,112	125**
Eyre	11,657	104**
Mid North	12,296	113**
Riverland	12,087	109**
Country SA	**146,714**	**103****
Central Northern	255,027	98**
Southern	113,114	101**
Metropolitan regions	**368,141**	**99****
South Australia	**514,985**	**100**

[1]**Gawler is included in the Wakefield region**

The correlation analysis shows there is a weak association at the SLA level between high rates of hospital admission and socioeconomic disadvantage (Table 8.2).

The Regions

The highest regional standardised admission ratio (SAR) was recorded in **Northern and Far Western**, with 25% more admissions than expected from the State rates (an SAR of 125**, 19,112 admissions). Within the region, elevated ratios were recorded for people living in Port Augusta (an SAR of 146**, 6,357), Whyalla (131**, 9,099), Unincorporated Flinders Ranges (122**, 419), Unincorporated Whyalla (131**, 9,099), Flinders Ranges (121**, 739) and Coober Pedy (119**, 865). The SAR in Roxby Downs had a low 85** (752 admissions), reflecting the higher socioeconomic status of this mining town. The very low ratio in Unincorporated Far North (an SAR of 56**, with 774 admissions) is likely to be due to patients being admitted to hospitals outside of the region, rather than fewer residents being admitted to hospital (see note *Differences due to Indigenous status*, page 385).

Mid North had an elevated SAR of 113** (12,296 admissions). Port Pirie Balance (an SAR of 136**, 1,623 admissions), Peterborough (133**, 958), Barunga West (124**, 1,244) and Orroroo/Carrieton (123**, 460) all had highly elevated ratios. A large number of admissions were recorded for Port Pirie - City (5,191, 108**). Unincorporated Pirie had a low SAR of 62** (49 admissions).

The **Riverland** had an SAR of 109** (12,087 admissions). Unincorporated Riverland had a very highly elevated ratio of 166** (although a small number of 66 admissions). Elevated ratios were also recorded for Berri and Barmera - Barmera (an SAR of131**, 1,974) and - Berri (112**, 2,484), and Renmark Paringa - Paringa (114**, 617).

There were four per cent more admissions than expected in **Eyre** (an SAR of 104**, 11,657). Unincorporated West Coast had the most highly elevated SAR in country South Australia, with more than two and a half times the expected number of admissions (an SAR of 266**, 429 admissions). Port Lincoln recorded 4,240 admissions (an SAR of 92**). Franklin Harbor had over one quarter fewer admissions than expected (73**, 343).

The admission rate in **Wakefield** was slightly above average (102**, 34,797 admissions), with elevated ratios in Yorke Peninsula - North (117**, 3,382), Wakefield (109**, 2,491), Barossa - Tanunda (108**, 1,746), Clare and Gilbert Valleys (108**, 3,133) and Copper Coast (108**, 4,580). Large numbers of admissions were recorded for Gawler (5,940, an SAR of 94**) and Light (3,388, 96**).

South East had five per cent fewer admissions than expected, an SAR of 95** (19,405 admissions). Elevated ratios were recorded in Tatiara (128**, 2,871) and Wattle Range - West (112**, 3,371). Naracoorte and Lucindale had 2,871 admissions (an SAR of 106**). Grant (59**, 1,450), Lacepede (86**, 693) and Mount Gambier (87**, 6,618) all had low ratios.

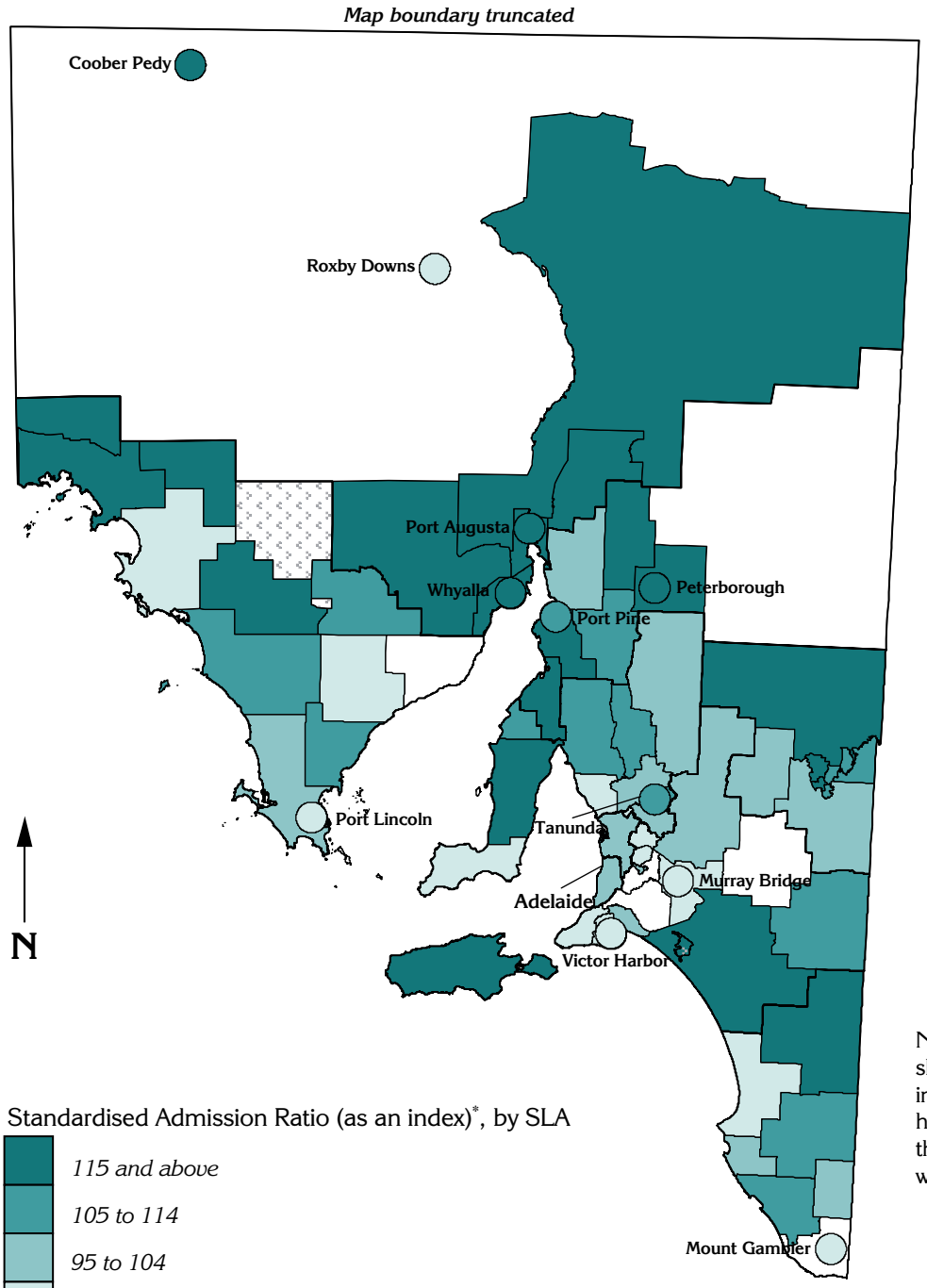
Hills Mallee Southern also had an SAR of 95** (37,360 admissions). The Coorong (141**, 2,746), Kangaroo Island (119**, 1,716) and Southern Mallee (114**, 856) all had elevated ratios. Relatively large numbers of admissions were recorded in Murray Bridge (5,469 admissions, an SAR of 93**), Mount Barker - Central (4,938, 98), Victor Harbor (4,814, 93**), Alexandrina - Coastal (3,737, 96*) and Mid Murray (3,120, 104*). The SLAs of Mount Barker Balance (an SAR of 66**, 1,645 admissions), Alexandrina - Strathalbyn (82**, 2,418), Karoonda East Murray (83**, 339) and Yankalilla (85**, 1,208) had low ratios.

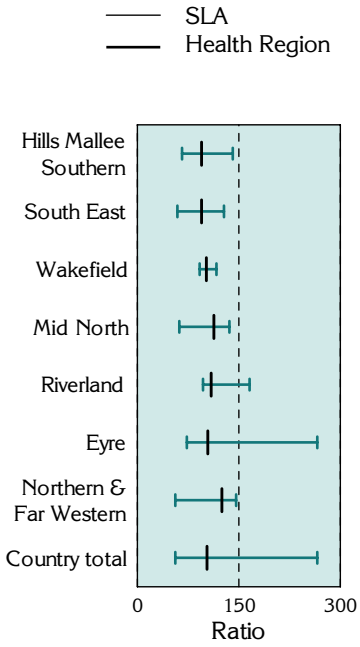
ASGC Remoteness classification

SARs for public acute and private hospitals decreased from 99** in the Major Cities areas to a low of 95** in the Inner Regional areas, before increasing to a high of 114** in the Outer Regional areas. An above-average ratio was also recorded in the Very Remote areas (an SAR of 112**).

* **indicates statistical significance: see page 24**

Map 7.31
Admissions to public acute and private hospitals, South Australia, 2003/2004





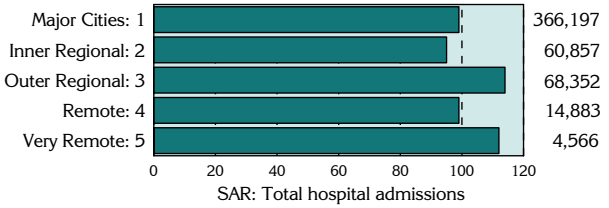
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Admission Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

*Index shows the number of admissions of people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Admissions to public acute hospitals, 2003/2004

Patients are usually admitted to public acute hospitals either as an emergency or as a booked admission. Emergency admission patients are admitted through the A & E Department. These are seriously injured or ill patients who need immediate treatment. Most patients come into public acute hospitals as a booked admission, either as a day patient or an inpatient. Rates of admission to public acute hospitals have increased by 15.8% over the eleven years to 2003/2004, largely in Metropolitan Adelaide (23.0%, compared with 5.3% in country areas: Table 7.41) and far less so than for private hospitals (48.8%: Table 7.43, page 402). As noted for total admissions, the increase has been driven by increased same day admissions, at a time of decline in overnight stays. Rates of admission of both city and country residents showed small declines in 2003/2004, when compared with 1998/1999.

Table 7.41: Admissions[1] to public acute hospitals

Age-standardised rate per 100,000

Section of State	1992/1993	1998/1999	2003/2004	Per cent change[2]
Metropolitan Adelaide (incl. Gawler)	15,798	21,660	19,427	23.0
Country	26,169	29,031	27,569	5.3
South Australia	18,622	23,440	21,572	15.8

[1]Includes same day admissions other than for renal dialysis

[2]Per cent change over eleven years in the rate of admissions to public acute hospitals

Metropolitan regions

The rate of admissions of residents of the metropolitan regions (excluding Gawler) to public acute hospitals in 2003/2004 was ten per cent below the State rates (a standardised admission ratio (SAR) of 90**, 213,760 admissions) (Table 7.42). The map (Map 7.32) shows a striking separation between areas with the highest and those with the lowest ratios. Just as striking is a comparison with many of the maps of socioeconomic disadvantage, in Chapters 4 and 5.

The correlation analysis also shows there is a very strong association at the SLA level between high rates of admission to public acute hospitals and socioeconomic disadvantage; the strength of this association is summarised by the very strong inverse correlation (-0.89) with the Index of Relative Socio-Economic Disadvantage (Table 8.1).

Central Northern Adelaide

Residents of the Central Northern region had ten per cent fewer public acute hospital admissions than expected from the State rates (an SAR of 90**, 150,520). This near-average ratio represents both highly elevated and very low ratios, from 79% above average (Salisbury Balance) to 61% below average (Burnside - North-East) (see graph opposite).

In addition to the highly elevated ratio in Salisbury Balance (an SAR of 179**, 2,036 admissions), other SLAs with highly elevated ratios included Playford - West Central (155**, 3,758) and - Elizabeth (151**, 8,596), Port Adelaide Enfield - Port (131**, 7,634) and Charles Sturt - North-East (126**, 7,275). Salisbury - Central had a less highly elevated ratio (an SAR of 118**, 6,576 admissions). SLAs with a large number of admissions include Salisbury - South-East (7,842 admissions, an SAR of 108**), Port Adelaide Enfield - Coast (6,942, 112**), Tea Tree Gully - South (6,798, 95**), Port Adelaide Enfield - East (6,569, 100), Charles Sturt - Inner West (5,582, 96**) and Port Adelaide Enfield - Inner (5,345, 114**).

A large number of SLAs in the regions had very low ratios, including Burnside - North-East (an SAR of 39**, 1,962 admissions) and - South-West (51**, 2,518); Walkerville (49**, 824); Adelaide Hills - Central (50**, 1,282) and - Ranges (63**, 1,252); Campbelltown - East (61**, 3,625) and - West (84**, 4,001); Playford - Hills (61**, 347); Unley - West (61**, 2,278) and - East (63**, 2,862); Charles Sturt - Coastal (66**, 4,849); Norwood Payneham St Peters - West (70**, 2,814) and - East (77**, 3,130); Tea Tree Gully - Central (70**, 3,682), - North (82**, 4,066) and - Hills (75**, 1,884); West Torrens - East (73**, 3,985) and - West (82**, 5,808); and Prospect (55**, 2,300).

Southern Adelaide

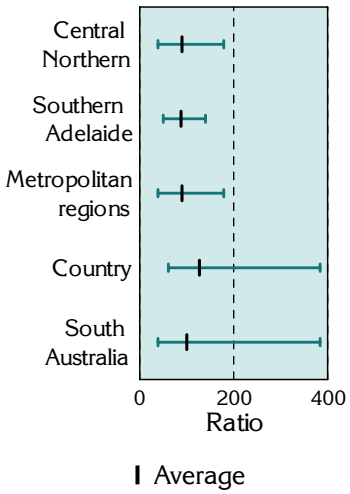
There were 12% fewer admissions to public acute hospitals than expected in the Southern region, with an SAR of 88** (63,240 admissions). The SLAs of Onkaparinga - North Coast (140**, 5,611), - Morphett (128**, 6,365) and - Hackham (121**, 3,239) all had ratios above the State average.

Large numbers of residents in the SLAs of Marion - Central (7,388 admissions, an SAR of 92**), Onkaparinga - Woodcroft (6,541, 97**) and Marion - North (6,327, 99) were admitted to public acute hospitals in 2003/2004.

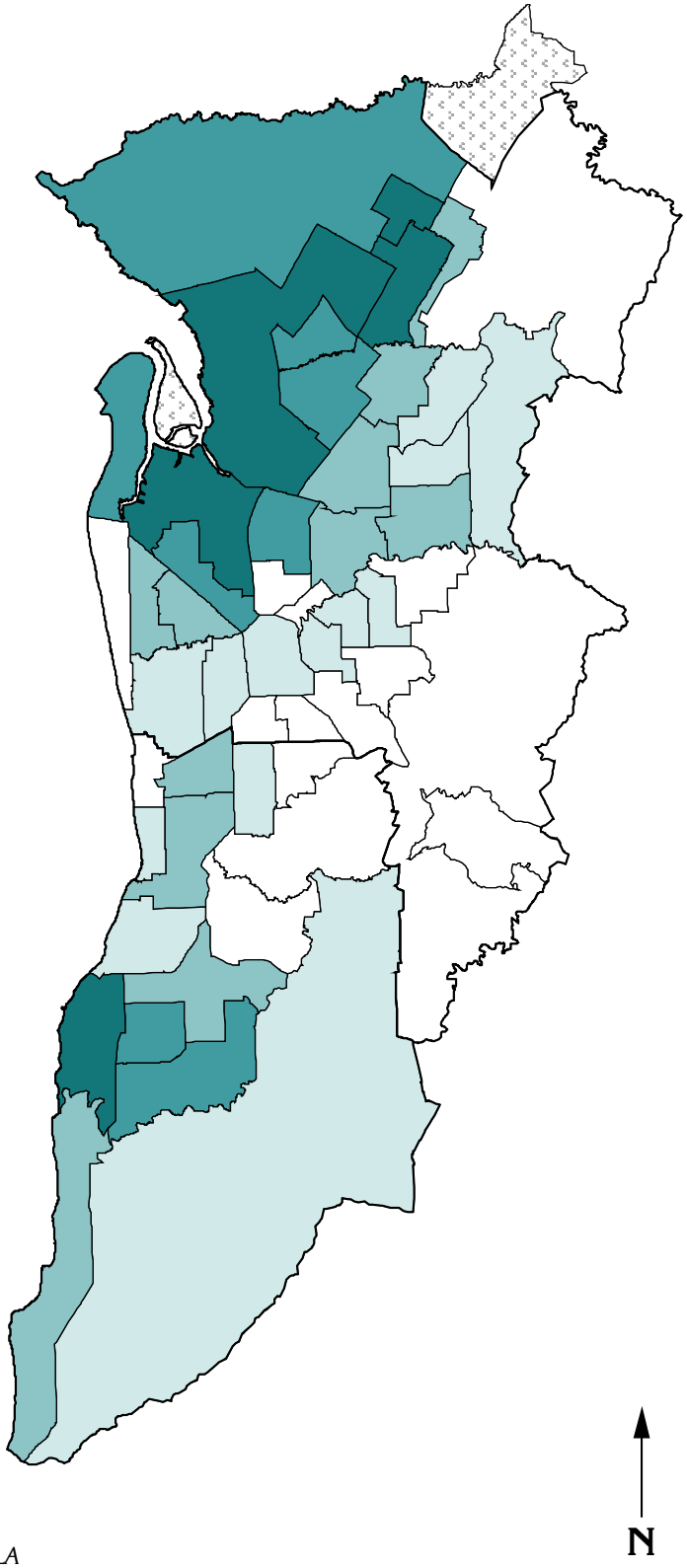
The lowest ratios in the south were recorded for people living in Mitcham - North-East (an SAR of 50**, 1,820 admissions), - West (74**, 3,934) and - Hills (64**, 3,333); Holdfast Bay - North (65**, 3,250) and - South (70**, 2,596); Onkaparinga - Reservoir (69**, 3,289) and - Hills (72**, 1,699); and Marion - South (77**, 2,934).

* **indicates statistical significance: see page 24**

Map 7.32
Admissions to public acute hospitals, metropolitan regions, 2003/2004



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Admission Ratio (as an index)*, by SLA

- *130 and above*
- *110 to 129*
- *90 to 109*
- *70 to 89*
- *below*
- *data not mapped#*

**Index shows the number of admissions of people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

The standardised admission ratio (SAR) for admission of residents of country South Australia to a public acute hospital in 2003/2004 was 27% above the State average (an SAR of 127**, and 115,674 admissions). In contrast, the rate of admission to private hospitals is 40% below the State average. Highly elevated ratios are recorded throughout much of the State, with the lowest ratios in SLAs nearer Adelaide, and in the far north-west (Table 7.42 and Map 7.33 and graph opposite).

Table 7.42: Regional totals, admissions to public acute hospitals, 2003/2004

Region	Number	SAR
Hills Mallee Southern	26,314	106**
Wakefield[1]	25,711	119**
South East	15,500	118**
Northern & Far Western	17,483	176**
Eyre	10,056	140**
Mid North	10,535	152**
Riverland	10,075	142**
Country SA	**115,674**	**127****
Central Northern	150,520	90**
Southern	63,240	88**
Metropolitan regions	**213,760**	**90****
South Australia	**329,441**	**100**

[1]**Gawler is included in the Wakefield region**

The correlation analysis shows there is a weak association at the SLA level between high rates of admission to public hospitals and socioeconomic disadvantage (Table 8.2).

The Regions

Northern and Far Western region had the highest regional SAR, with 76% more admissions to public acute hospitals than expected from the State rates (an SAR of 176**, 17,483 admissions). A number of SLAs in this region had highly elevated ratios, including Port Augusta (206**, 5,766 admissions), Whyalla (195**, 8,682), Unincorporated Whyalla (187**, 101), Coober Pedy (176**, 804), Unincorporated Flinders Ranges (170**, 377) and Flinders Ranges (165**, 638). Low ratios were mapped in Unincorporated Far North (an SAR of 63**, 591 admissions) and Roxby Downs (86**, 524).

The SAR in **Mid North** was also highly elevated, at 52% above the State average (an SAR of 152**, 10,535 admissions). The majority of SLAs in this region had highly elevated SARs, including Peterborough (192**, 867), Port Pirie Balance (176**, 1,329), Orroroo/Carrieton (167**, 392), Port Pirie - City (154**, 4,756), Barunga West (149**, 941), Northern Areas (137**, 1,444) and Mount Remarkable (119**, 773).

Riverland had an SAR of 142** (10,075 admissions), 42% more admissions than expected for a region of its population's size and age composition. Highly elevated ratios were mapped in the SLAs of Berri and Barmera - Barmera (179**, 1,718) and - Berri (139**, 1,985); Renmark Paringa - Renmark (143**, 2,453) and - Paringa (128**, 440); Unincorporated Riverland (135, 34); and Loxton Waikerie - West (131**, 1,352) and - East (130**, 2,093).

The rate of admissions to public acute hospitals of **Eyre** residents was similarly high, an SAR of 140** (10,056 admissions). The majority of SLAs in this region had very highly or highly elevated ratios; these included Unincorporated West Coast (384**, 404), Ceduna (204**, 1,441), Le Hunte (166**, 506), Tumby Bay (151**, 937), Elliston (143**, 329), Kimba (134**, 360), Streaky Bay (129**, 538), Port Lincoln (127**, 3,784), Cleve (120**, 494) and Lower Eyre Peninsula (114**, 980).

Residents of **South East** had an admission rate 18% above the State average (an SAR of 118**, 15,500 admissions). Wattle Range - West (157**, 3,029), Naracoorte and Lucindale (139**, 2,418), Wattle Range - East (136**, 895), Tatiara (127**, 1,844) and Mount Gambier (112**, 5,500) all had elevated ratios. Grant had a low SAR of 61** (955 admissions).

The SAR for the **Wakefield** region was 19% above average (119**, 25,711 admissions). Elevated ratios were mapped in the SLAs of Clare and Gilbert Valleys (135**, 2,461), Barossa - Tanunda (132**, 1,364), Wakefield (132**, 1,918), Goyder (131**, 1,197), Yorke Peninsula - North (129**, 2,327), Barossa - Angaston (120**, 2,090), Copper Coast (118**, 3,160), Gawler (117**, 4,726) and Barossa - Barossa (114**, 1,702).

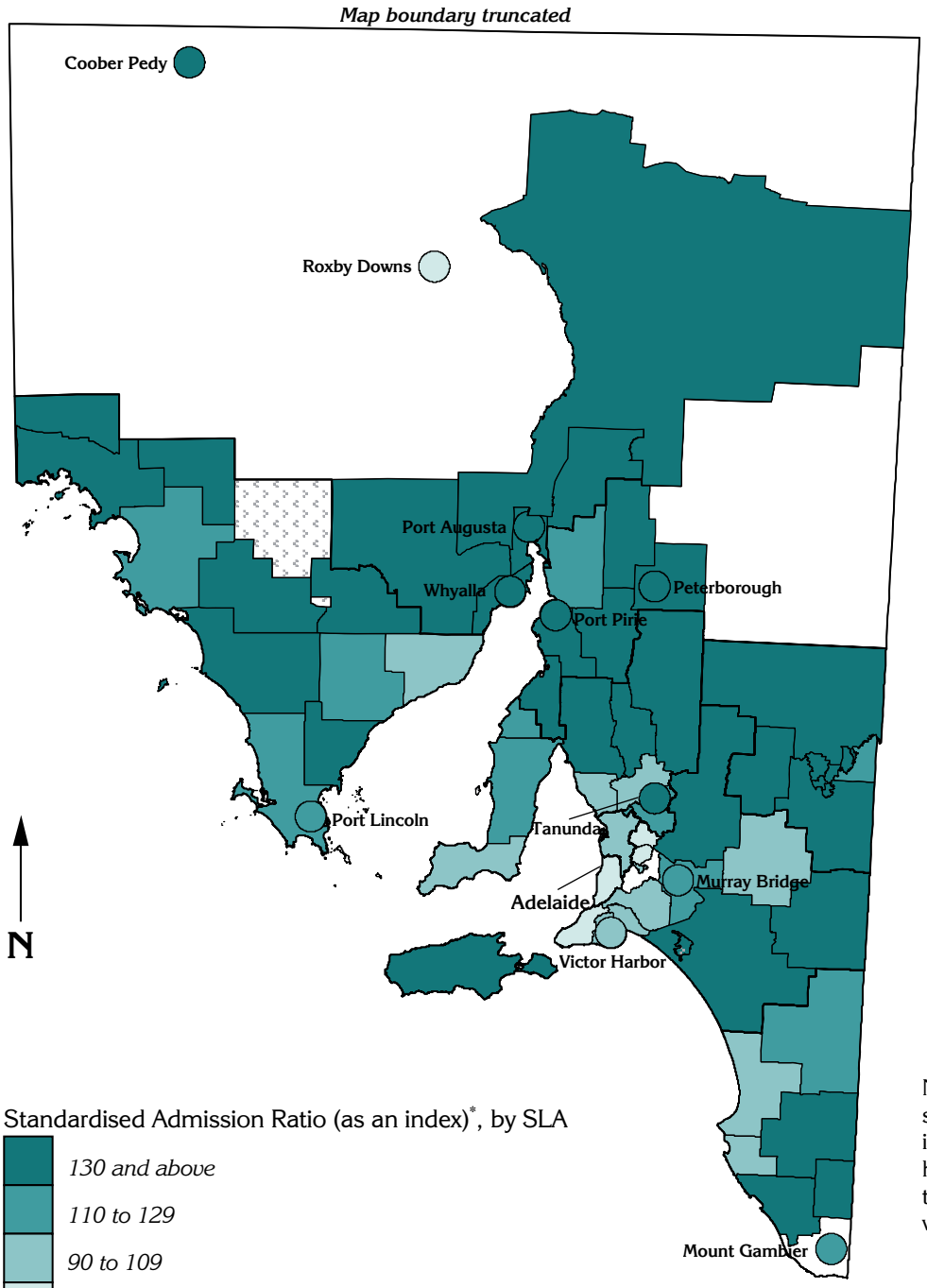
Hills Mallee Southern had a slightly higher SAR than expected (106**, 26,314). The Coorong (179**, 2,213), Kangaroo Island (162**, 1,479), Mid Murray (139**, 2,593), Southern Mallee (136**, 648) and Murray Bridge (122**, 4,574) all had highly elevated ratios. The SLAs of Mount Barker Balance (66**, 1,052), Adelaide Hills Balance (74**, 1,349) and - North (79**, 1,009), and Yankalilla (83**, 730) had fewer admissions than expected.

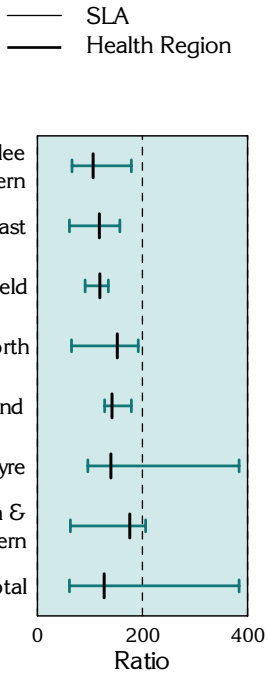
ASGC Remoteness classification

Rates of admission to public acute hospitals increased markedly by remoteness, from an SAR of 90** in Major Cities to 153** in the Very Remote areas: the continuous gradient in ratios is broken by the higher SAR of 149** in Outer Regional.

* **indicates statistical significance: see page 24**

Map 7.33
Admissions to public acute hospitals, South Australia, 2003/2004





Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

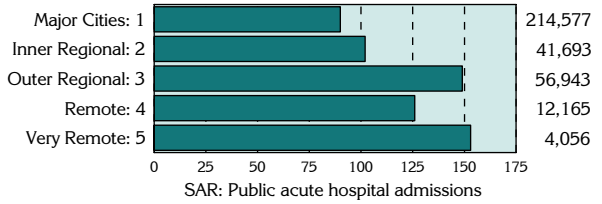
Standardised Admission Ratio (as an index)*, by SLA

- *130 and above*
- *110 to 129*
- *90 to 109*
- *70 to 89*
- *below 70*
- *data not mapped#*

**Index shows the number of admissions of people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data were not mapped because the SLA has a population of less than 100

ASGC Remoteness classification Admissions



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Admissions to private hospitals, 2003/2004

Patients are admitted to hospital as an emergency or as a booked admission. Most patients come into private hospitals as a booked admission, either as a day patient or an inpatient. The majority of admitted patients have private health insurance to cover all or a majority of the cost of their hospital episode.

Admission rates to private hospitals have increased strongly over the eleven years to 2003/2004, for both city and country residents (Table 7.43); the greatest increase occurred over the second half of this period. The increases are higher than those for public acute hospitals (Table 7.41, page 398).

Table 7.43: Admissions[1] to private hospitals

Age-standardised rate per 100,000

Section of State	1992/1993	1998/1999	2003/2004	Per cent change[2]
Metropolitan Adelaide (incl. Gawler)	9,639	11,571	13,874	43.9
Country	4,232	4,863	7,371	74.2
South Australia	8,166	9,951	12,150	48.8

[1]**Includes same day admissions other than for renal dialysis**

[2]**Per cent change over eleven years in the rate of admissions to private hospitals**

Metropolitan regions

There were 154,381 admissions to private hospitals of residents of the metropolitan regions (excluding Gawler) in 2003/2004, a standardised admission ratio (SAR) of 115** (Table 7.44).

The map (Map 7.34) shows the widespread use of private hospitals by people across the metropolitan regions. Two thirds (67.3%) of the metropolitan SLAs had ratios above the State average, and 38.5% had ratios elevated by 25% or more: this compares with just 15.4% of SLAs with ratios 25% or more below the State average. The most disadvantaged SLAs have rates mapped in the two lowest ranges (see graph opposite).

The correlation analysis shows there is a strong association at the SLA level between high rates of admission to private hospitals and socioeconomic advantage (Table 8.1).

Central Northern Adelaide

Residents of Central Northern region had an admission rate to private hospitals 12% above the State average (an SAR of 112** and 104,507 admissions).

A large number of SLAs in the region had very highly elevated ratios. Playford - Hills had nearly three and a half times the expected number of admissions to private hospitals (an SAR of 340**, 1,088). Other SLAs with very highly to highly elevated ratios included Adelaide Hills - Ranges (237**, 2,781) and - Central (161**, 2,426); Burnside - South-West (175**, 5,095) and - North-East (147**, 4,332); West Torrens - West (171**, 6,898); Unley - West (152**, 3,186); and Walkerville (147**, 1,454). Highly elevated ratios were also mapped in Charles Sturt - Coastal (135**, 5,806); Norwood Payneham St Peters - East (134**, 3,035) and - West (122**, 2,701); Unley - East (133**, 3,318); Adelaide (132**, 2,218); Salisbury Balance (125**, 732); Campbelltown - East (120**, 4,088); Tea Tree Gully - North (120**, 3,219) and - Hills (119**, 1,772); and Charles Sturt - Inner West (118**, 3,935) and - Inner East (117**, 3,324).

In contrast, just one quarter of the expected number of admissions to private hospitals were recorded for residents of Playford - West Central (26**, 327 admissions). Other SLAs with low SARs included Playford - East Central (38**, 718), Port Adelaide Enfield - Port (44**, 1,443), Playford - Elizabeth (61**, 1,897), Salisbury - Central (71**, 2,143), Charles Sturt - North-East (75**, 2,405), Salisbury - South-East (77**, 3,135) and West Torrens - East (85**, 2,525).

Southern Adelaide

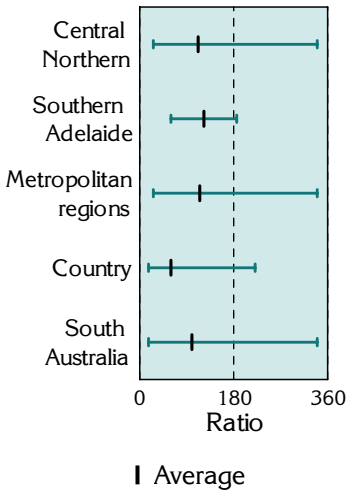
There was a higher standardised admission ratio in Southern region than in Central Northern region, an SAR of 123** (49,874 admissions). Highly elevated ratios were mapped in the SLAs of Mitcham - North-East (186**, 3,944), Holdfast Bay - North (167**, 4,817) and - South (153**, 3,301), Mitcham - Hills (152**, 4,646), Onkaparinga - Reservoir (149**, 4,008), Mitcham - West (139**, 4,098), Marion - North (131**, 4,686), Onkaparinga - Hills (123**, 1,690) and Marion - South (118**, 2,486).

The largest number of admissions to private hospitals from this region were recorded in Marion - Central (5,253 admissions, an SAR of 113**).

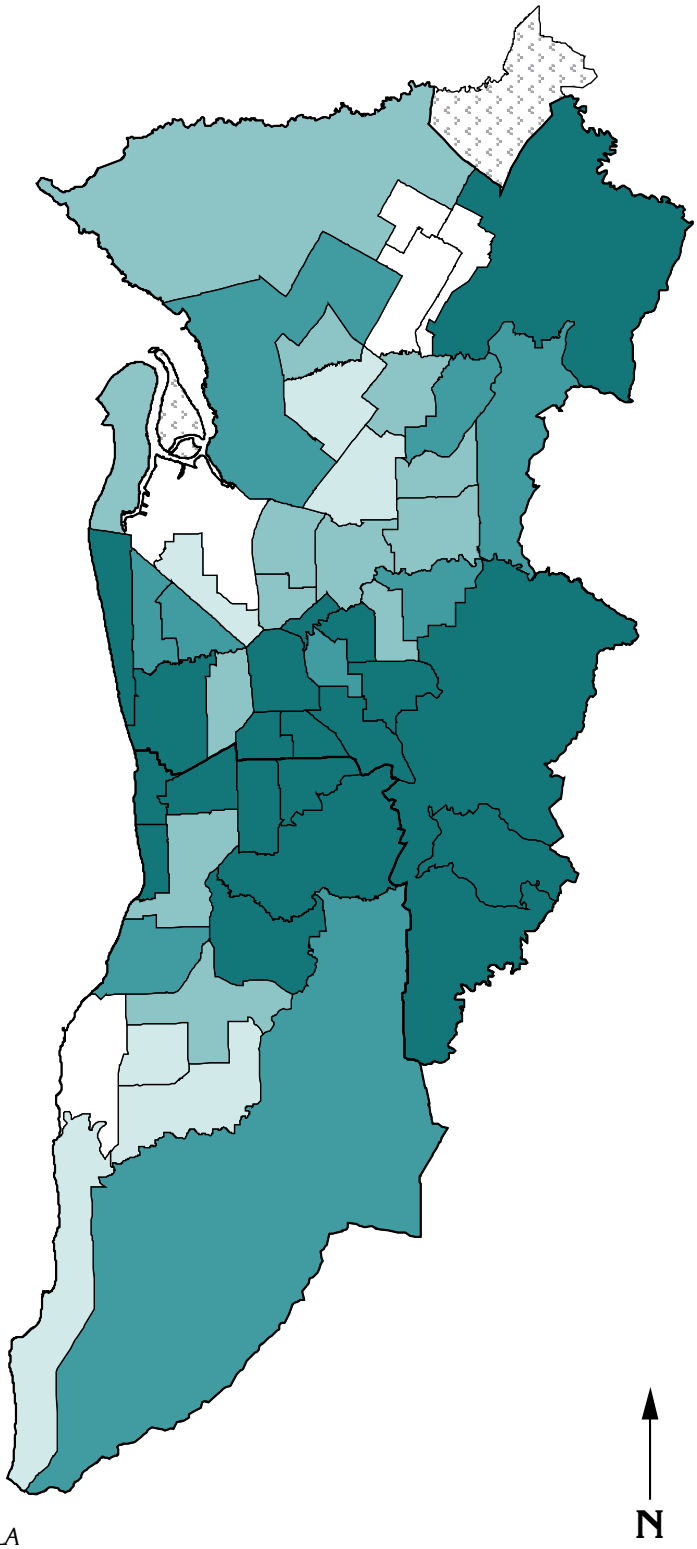
The SLAs with low ratios were all located in Onkaparinga, including - North Coast (60**, 1,372), - Hackham (71**, 1,057), - Morphett (74**, 2,031) and - South Coast (83**, 2,261).

* **indicates statistical significance: see page 24**

Map 7.34
Admissions to private hospitals, metropolitan regions, 2003/2004



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Admission Ratio (as an index)*, by SLA

- *130 and above*
- *115 to 129*
- *85 to 114*
- *70 to 84*
- *below 70*
- *data not mapped#*

**Index shows the number of admissions of people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

Residents of country South Australia had a very low rate of admission to private hospitals (a standardised admission ratio (SAR) of 60**, and 31,040 admissions), largely reflecting the lack of private hospitals in country areas.

There were low SARs throughout country areas, with SLAs not mapped in the lowest range generally being relatively close to Adelaide, with the notable exception of Riverland, Renmark Paringa - Renmark and, to a lesser extent, Roxby Downs (Map 7.35). Ratios at the regional level were all low (Table 7.44), with the lowest being those at greatest distance from the metropolitan regions.

Table 7.44: Regional totals, admissions to private hospitals, 2003/2004

Region	No.	SAR
Hills Mallee Southern	11,046	77**
Wakefield[1]	9,086	73**
South East	3,905	54**
Northern & Far Western	1,629	30**
Eyre	1,601	40**
Mid North	1,761	44**
Riverland	2,012	50**
Country SA	**31,040**	**60****
Central Northern	104,507	112**
Southern	49,874	123**
Metropolitan regions	**154,381**	**115****
South Australia	**185,544**	**100**

[1]**Gawler is included in the Wakefield region**

The correlation analysis shows there is a weak association at the SLA level between high rates of admission to private hospitals and socioeconomic advantage (Table 8.2).

The Regions

The highest SAR in country South Australia was recorded for residents of **Hills Mallee Southern** (an SAR of 77**, 11,046 admissions). Adelaide Hills Balance was the only SLA with an above average standardised admission ratio, with 24% more admissions to private hospitals than expected (an SAR of 124**, 1,266). A number of SLAs had low SARs, including Karoonda East Murray (37**, 57 admissions), Murray Bridge (42**, 895), Kangaroo Island (45**, 237) and Mid Murray (47**, 527).

In **Wakefield**, there were 27% fewer admissions than expected from the State rates (an SAR of 73**, 9,086 admissions). All of the SLAs in this region had below average rates of admission to private hospitals. The highest ratios were mapped in the SLAs of Yorke Peninsula - North (97, 1,055 admissions) and Mallala (92*, 733). Light had a relatively large number of 1,008 admissions (an SAR of 80**). SLAs with low ratios included Goyder (39**, 207) and Gawler (53**, 1,214).

There were just over half the number of admissions expected for a population of the size and composition of the **South East** region (an SAR of 54**, 3,905 admissions). Tatiara had 29% more admissions to private hospitals than expected (an SAR of 129**, 1,027). All other SLAs in the region had below average admissions, most notably Wattle Range - West (31**, 342 admissions), Mount Gambier (42**, 1,118) and Wattle Range - East (44**, 163).

The population of **Riverland** had half the State average number of admissions, with an SAR of 50** (2,012 admissions). Unincorporated Riverland had over twice the expected number with an SAR of 221** (32 admissions). Low ratios were mapped in the SLAs of Loxton Waikerie - East (an SR of 39**, 359), Renmark Paringa - Renmark (40**, 378) and Berri and Barmera - Barmera (47**, 256).

Mid North had less than half the expected number of admissions to private hospitals with an SAR of 44** (1,761 admissions). All of the SLAs in this region had below average admission rates, with the highest SAR mapping in Barunga West (81**, 303). Port Pirie - City had one quarter the expected number of admissions (an SAR of 25**, 435), followed by Peterborough (34**, 91) and Orroroo/Carrieton (49**, 68).

Eyre had a very low SAR, of 40** (1,601 admissions). Lower Eyre Peninsula had an SAR of 80** (394 admissions). A large proportion of the SLAs in this region had very low SARs, including Port Lincoln (28**, 456), Ceduna (28**, 107), Streaky Bay (32**, 74), Tumby Bay (33**, 122) and Franklin Harbor (35**, 60).

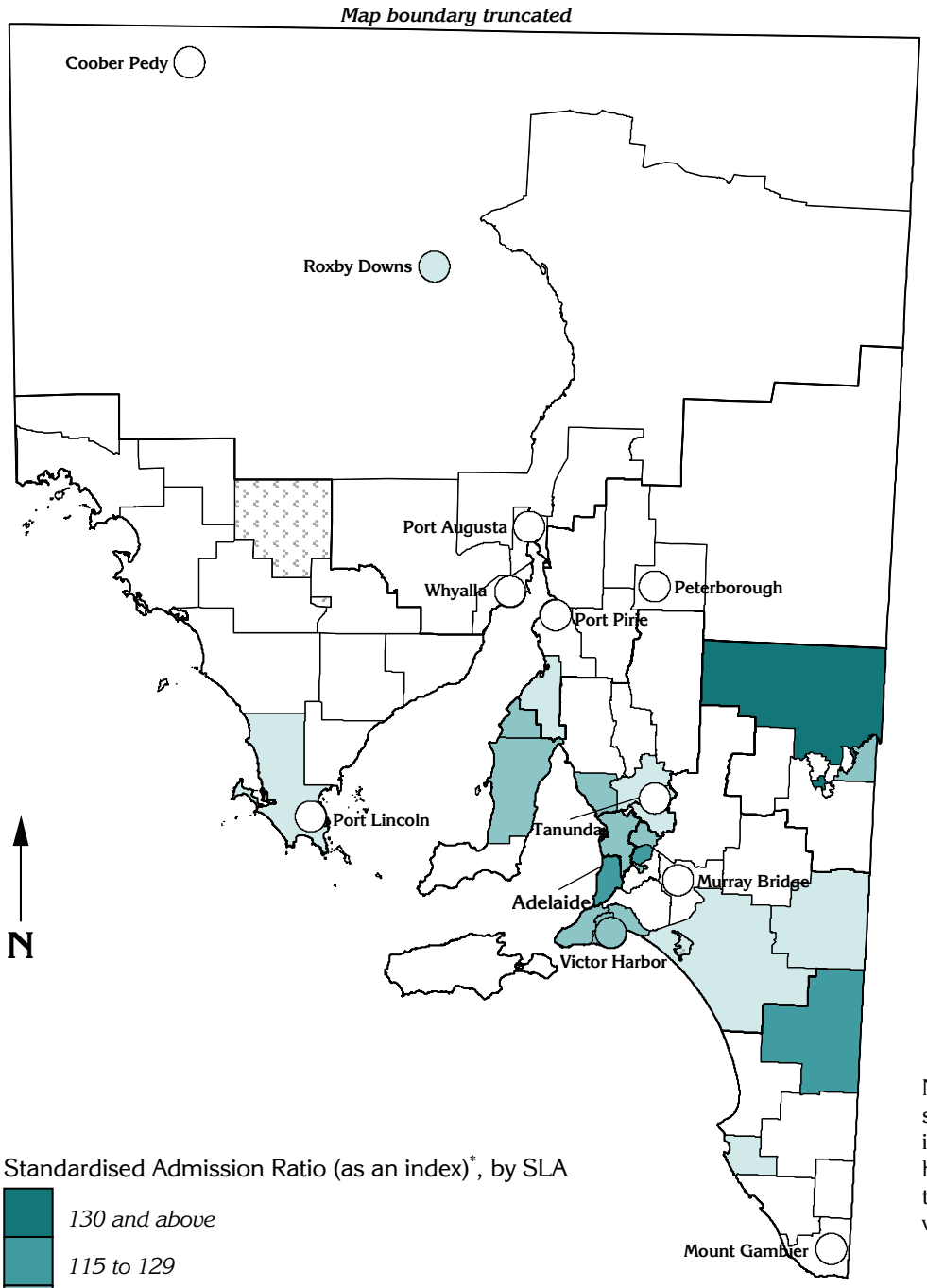
The lowest regional SAR for private hospital admissions was recorded for people in **Northern and Far Western** region (an SAR of 30**, 1,629 admissions). The highest SAR was mapped in Roxby Downs (83**, 228). Whyalla had the lowest SAR (17**, 417), followed by Unincorporated Whyalla (18**, six), Coober Pedy (22**, 61), Unincorporated Flinders Ranges (35**, 42) and Port Augusta (38**, 591).

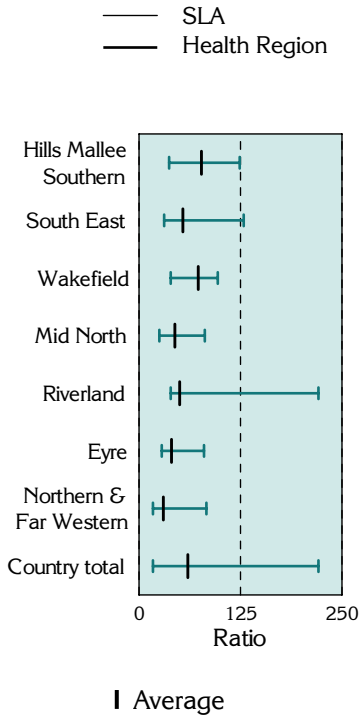
ASGC Remoteness classification

Residents of the Major Cities area accounted for the majority of admissions to private hospitals (81.8%) and had the only elevated SAR (113**), reflecting the greater availability of these facilities in the most accessible areas. Ratios in the other areas were all lower, dropping to an SAR of 36** in the Very Remote class.

* **indicates statistical significance: see page 24**

Map 7.35
Admissions to private hospitals, South Australia, 2003/2004





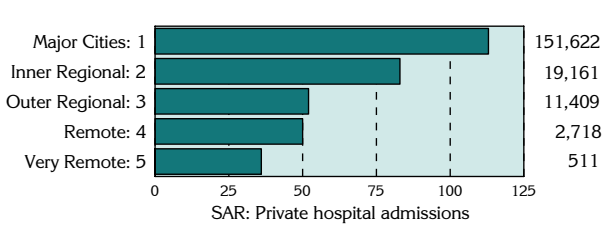
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Admission Ratio (as an index)*, by SLA

- *130 and above*
- *115 to 129*
- *85 to 114*
- *70 to 84*
- *below 70*
- *data not mapped#*

**Expected numbers of admissions of people in the SLA were derived by indirect age-sex standardisation, based on SA totals*

#Data were not mapped because the SLA has a population of less than 100, or there were fewer than five admissions



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Admissions of males, 2003/2004

Patients are usually admitted to hospital either as an emergency or as a booked admission. Emergency admission patients are admitted through the A & E Department. These are seriously injured or ill patients who need immediate treatment. Most patients come into hospital as a booked admission, either as a day patient or an inpatient. A day patient comes to hospital for a test or treatment and returns home the same day. They usually will not stay overnight. An inpatient stays overnight or for a few days at the hospital.

Admission rates for males in Metropolitan Adelaide increased by 21.2% over the eleven years to 2003/2004, compared with a much lower 10.4% for country residents (Table 7.45). As a result, admission rates in country South Australia were only 4.8% higher than for males in the city in 2003/2004, compared with a gap of 20.4% in 1992/1993. The overall increase in rates in Metropolitan Adelaide included a decline from 1998/1999; rates in country South Australia showed little change between 1998/1999 and 2003/2004.

Table 7.45: Admissions[1] of males

Age-standardised rate per 100,000

Section of State	1992/1993	1998/1999	2003/2004	Per cent change[2]
Metropolitan Adelaide (incl. Gawler)	23,955	32,185	30,356	26.7
Country	28,830	31,552	31,819	10.4
South Australia	25,377	32,026	30,760	21.2

[1]Includes admissions to public acute hospitals, private hospitals and day surgery facilities, including admissions of same day patients, other than for renal dialysis

[2]Per cent change between 1992/1993 and 2003/2004 in the rate of admissions of males

Metropolitan regions

There was a slightly lower than expected standardised admission ratio (SAR) for males in the metropolitan regions, excluding Gawler (99**, 163,205 admissions) (Table 7.46). The most highly elevated SARs were located in the outer north, west and the outer east.

The correlation analysis shows there is a weak association at the SLA level between high rates of admissions of males and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

There were 113,004 admissions of males living in Central Northern, two per cent fewer than expected from the State rates (98**).

Ratios in the region ranged from 41% above to 30% below the State average. The most highly elevated ratio in the metropolitan regions was in Salisbury Balance (141**, 1,132 admissions), followed by Playford - Hills (137**, 584), Adelaide Hills - Ranges (127**, 1,916), West Torrens - West (119**, 5,898), Playford - Elizabeth (114**, 4,468) and - West (113**, 1,368), and Adelaide (112**, 2,383).

Large numbers of admissions were recorded for males resident in Tea Tree Gully - South (5,120 admissions, an SAR of 102), Charles Sturt - Coastal (4,911, 92**), Salisbury - South-East (4,796, 94**), Port Adelaide Enfield - Coast (4,770, 108**) and - East (4,734, 104*), Charles Sturt - North-East (4,349, 109**) and - Inner West (4,349, 105**), and Port Adelaide Enfield - Port (4,131, 102).

The SLAs with fewer admissions of males than expected included Playford - East Central (70**, 1,710), Prospect (71**, 1,974), West Torrens - East (79**, 2,934), Burnside - North-East (79**, 2,760), Campbelltown - East (79**, 3,354), Tea Tree Gully - Central (80**, 2,942), Salisbury - North-East (86**, 2,681), Walkerville (88**, 1,042) and Unley - East (88**, 2,513).

Southern Adelaide

Males living in the Southern region had one per cent more admissions than expected from the State rates, with an SAR of 101 (50,201 admissions). The range of ratios within the region was narrower than in Central Northern (see graph opposite), from ten per cent above average in Marion - North (an SAR of 110**, 4,721 admissions), to ten per cent below average in Onkaparinga - Hills (an SAR of 90**, 1,592 admissions).

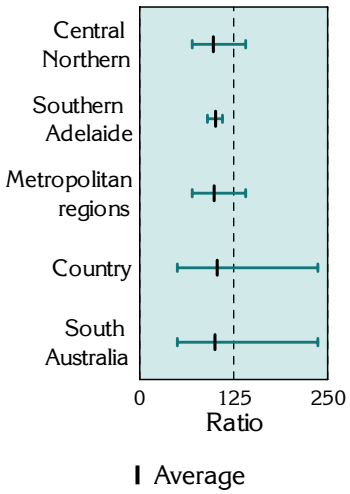
Other SLAs with elevated ratios included Onkaparinga - Woodcroft (109**, 5,101), Onkaparinga - North Coast (109**, 3,105) and Holdfast Bay - South (an SAR of 107**, 2,722).

Relatively large numbers of admissions were recorded for males living in Marion - Central (5,696, an SAR of 101), Onkaparinga - Morphett (3,534, 104*) and Holdfast Bay - North (3,500, 105**)

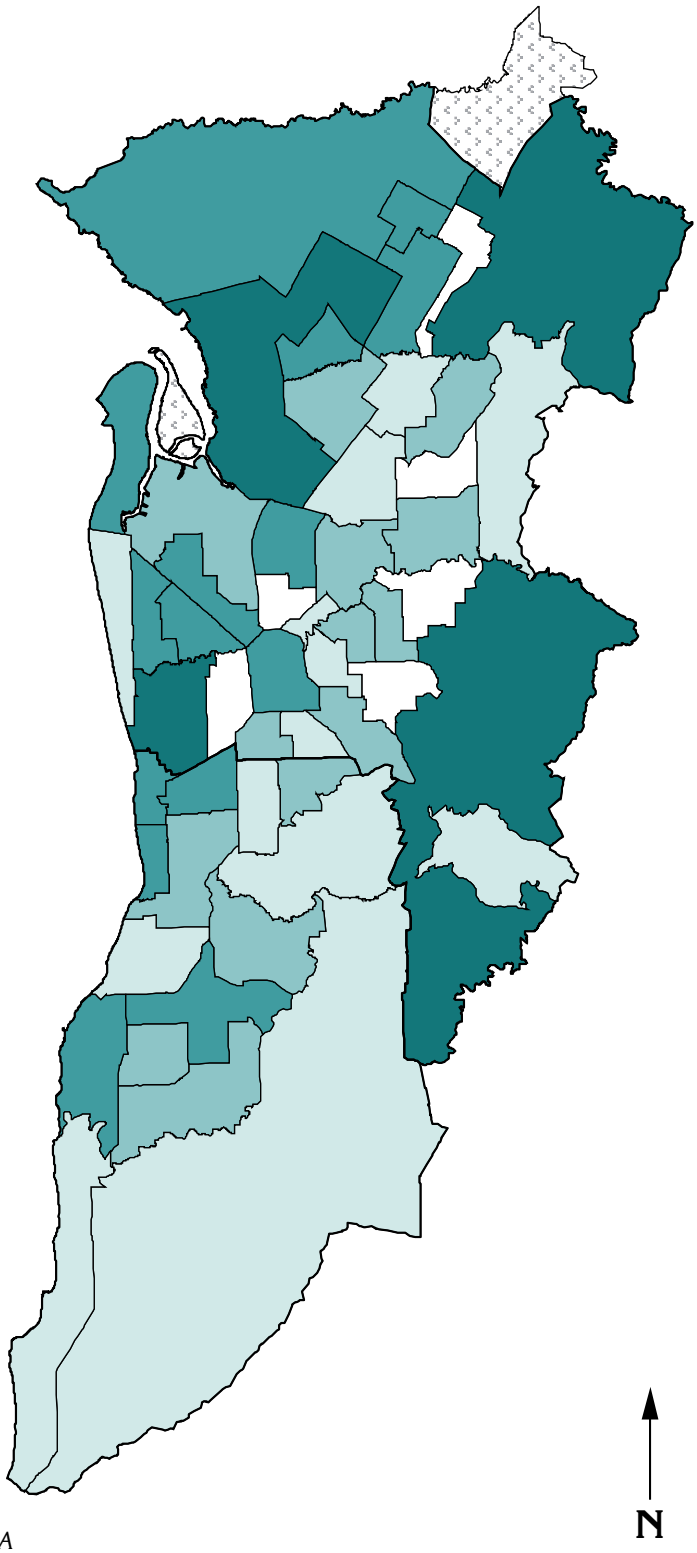
Lower than expected standardised admission ratios were found in Onkaparinga - Hills (with an SAR of 90**, 1,592), Marion - South (92**, 2,445), Onkaparinga - South Coast (92**, 3,291), and Mitcham - West (93**, 3,312) and - Hills (94**, 3,573).

* **indicates statistical significance: see page 24**

Map 7.36
Admissions of males, metropolitan regions, 2003/2004



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Admission Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

**Index shows the number of admissions of males in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Admissions of males, 2003/2004

Country South Australia

The standardised admission ratio (SAR) for males in country South Australia was three per cent higher than expected (103**, 69,186 admissions).

The map shows the geographic distribution of elevated ratios to be patchy, with average rates in many SLAs and the highest rates in a number of the towns and in scattered locations, including some areas with relatively large Indigenous populations (Map 7.37). Only **Northern and Far Western** and **Mid North** had ratios much above the State average (Table 7.46 and graph opposite).

Table 7.46: Regional totals, admissions of males, 2003/2004

Region	No.	SAR
Hills Mallee Southern	17,576	95**
Wakefield[1]	16,728	104**
South East	9,069	97**
Northern & Far Western	8,732	121**
Eyre	5,448	102
Mid North	5,931	115**
Riverland	5,702	109**
Country SA	**69,186**	**103****
Central Northern	113,004	98**
Southern	50,201	101
Metropolitan regions	**163,205**	**99****
South Australia	**232,461**	**100**

[1] **Gawler is included in the Wakefield region**

The correlation analysis shows a weak association at the SLA level between high rates of admissions of males and socioeconomic disadvantage (Table 8.2).

The Regions

There were 21% more admissions to hospital of males from **Northern and Far Western** than expected from the State rates (an SAR of 121**, 8,732 admissions). The most highly elevated SARs were in Port Augusta (144**, 2,893), Whyalla (129**, 4,095), Flinders Ranges (126**, 377) and Unincorporated Flinders Ranges (110, 185). Both Unincorporated Far North (53**, 369) and Roxby Downs (80**, 329) had fewer males admitted to hospital than expected.

In **Mid North,** males had 15% more admissions than the State average (an SAR of 115**, 5,931 admissions). There were elevated ratios in the SLAs of Port Pirie Balance (an SAR of 148**, 858 admissions), Peterborough (133**, 468), Orroroo/Carrieton (128**, 220), Barunga West (122**, 632) and Northern Areas (115**, 925). Port Pirie - City had 2,323 admissions of male residents in 2003/04 (an SAR of 107**). Mount Remarkable had the lowest SAR of 91* (483 admissions).

Riverland had an SAR of 109** (5,702 admissions of males). All SLAs in this region had either the expected number of admissions or more. Elevated ratios were mapped in the Berri and Barmera SLAs of - Barmera (an SAR of 120**, 844 admissions), and - Berri (118**, 1,182), and in Renmark Paringa - Paringa (112, 305). Loxton Waikerie - East had an SAR of 100 (1,206 residents).

There were 16,728 admissions to hospital of males from the **Wakefield** region, four per cent above the State average (104**). The highest SARs in the region were in Yorke Peninsula - North (124**, 1,812 admissions), Barossa - Tanunda (119**, 867), Clare and Gilbert Valleys (111**, 1,524) and Copper Coast (110**, 2,237). Large numbers of admissions were recorded for males living in Gawler (2,837, an SAR of 100) and Light (1,511, 91). Mallala had the lowest SAR (88**, 912).

Despite a near-average overall SAR of 102 in **Eyre** (5,448 admissions), three SLAs had very highly elevated ratios: Unincorporated West Coast (237**, 191), Ceduna (151**, 763) and Le Hunte (121**, 268). There were 1,877 admissions of males from Port Lincoln (1,877, 91**). Franklin Harbor had a low ratio of 62** (146 admissions).

Males in **South East** had an SAR of 97** (9,069 admissions). Over one third more admissions than expected were recorded for male residents in Tatiara (135**, 1,473). Large numbers of admissions were recorded for Mount Gambier (3,028, 91**) and Wattle Range - West (1,445, 102). Grant had a low SAR with 40% fewer admissions of males than expected (60**, 720).

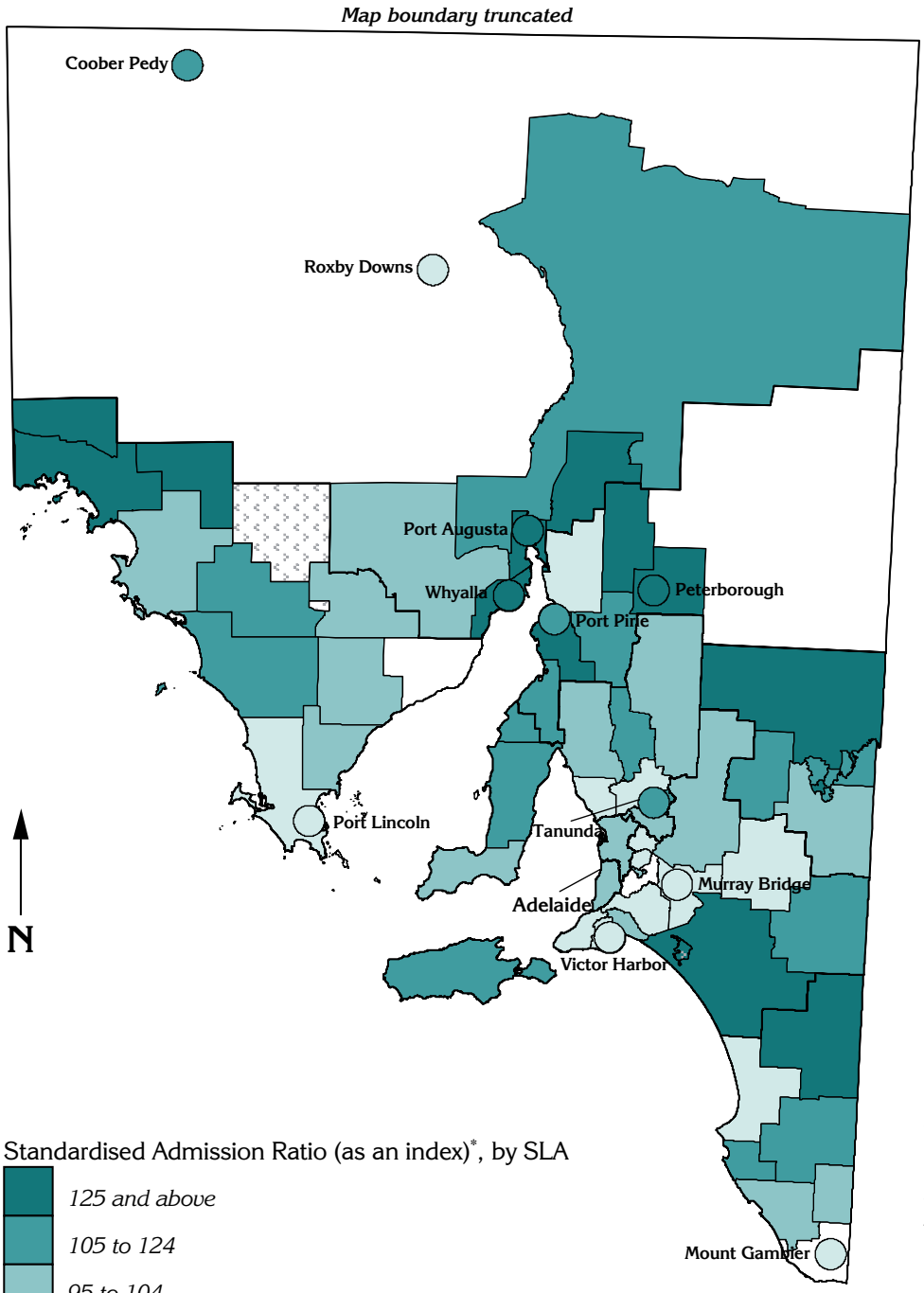
Admissions of males from **Hills Mallee Southern** region were five per cent below the State average (an SAR of 95**, 17,576 admissions). Within the region, highly elevated ratios were mapped in The Coorong (an SAR of 147**, 1,357) and Kangaroo Island (117**, 827). Large numbers of admissions were recorded for Murray Bridge (2,565, 94**), Victor Harbor (2,271, 92**) and Mount Barker - Central (2,070, 95*). A number of SLAs in this region had low ratios, including Mount Barker Balance (an SAR of 62**, 730), Alexandrina - Strathalbyn (84**, 1,157) and Adelaide Hills - North (86**, 825).

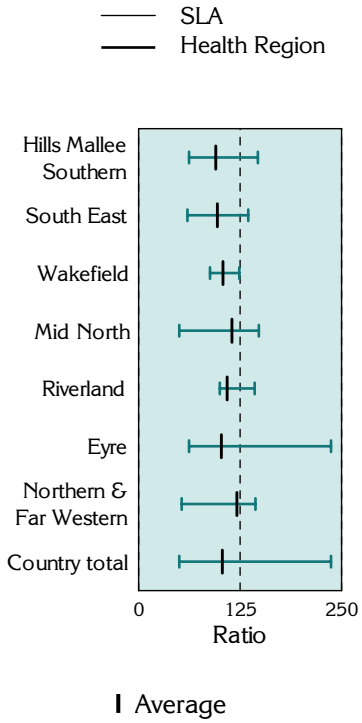
ASGC Remoteness classification

Ratios closely follow the pattern evident for total admissions, with an SAR of 99** in the Major Cities areas; ratios of 95**, 114** and 97 in the middle three classes; and an SAR of 109** in the Very Remote areas.

* **indicates statistical significance: see page 24**

Map 7.37
Admissions of males, South Australia, 2003/2004





Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

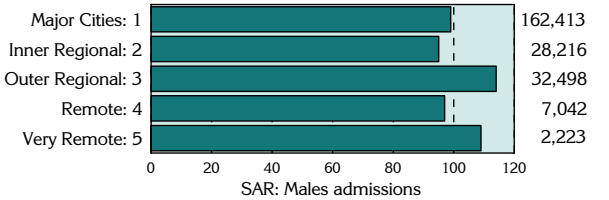
Standardised Admission Ratio (as an index)*, by SLA

- *125 and above*
- *105 to 124*
- *95 to 104*
- *75 to 94*
- *below 75*
- *data not mapped#*

**Index shows the number of admissions of males in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data were not mapped because the SLA has a population of less than 100

ASGC Remoteness classification Admissions



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Admissions of females, 2003/2004

Patients are usually admitted to hospital either as an emergency or as a booked admission. Emergency admission patients are admitted through the A & E Department. These are seriously injured or ill patients who need immediate treatment. Most patients come into hospital as a booked admission, either as a day patient or an inpatient. A day patient comes to hospital for a test or treatment and returns home the same day. They usually will not stay overnight. An inpatient stays overnight or for a few days at the hospital.

Admission rates for females in Metropolitan Adelaide increased by 30.6% over the eleven years to 2003/2004, compared with a much lower 15.7% for country residents (Table 7.47). As a result, admission rates of females in country South Australia were only 4.9% higher than for females in the city in 2003/2004, compared with a gap of 18.3% in 1992/1993. Again, most of the difference occurred in the earlier half of this eleven-year period.

Table 7.47: Admissions[1] of females

Age-standardised rate per 100,000

Section of State	1992/1993	1998/1999	2003/2004	Per cent change[2]
Metropolitan Adelaide (incl. Gawler)	27,703	34,159	36,177	30.6
Country	32,780	36,197	37,934	15.7
South Australia	29,033	34,633	36,624	26.1

[1]Includes admissions to public acute hospitals, private hospitals and day surgery facilities, including admissions of same day patients, other than for renal dialysis

[2]Per cent change between 1992/1993 and 2003/2004 in the rate of admissions of females

Metropolitan regions

As was the case for males, there was a slightly lower than expected standardised admission ratio (SAR) for females in the metropolitan regions, excluding Gawler (99**, 204,936 admissions) (Table 7.48).

The correlation analysis shows there is a weak association at the SLA level between high rates of admission of females and socioeconomic disadvantage (Table 8.1).

Central Northern Adelaide

There were 142,023 admissions of females in the Central Northern region, two per cent fewer than expected (an SAR of 98**).

Ratios in the region ranged from a highly elevated 83% above the State average, to 30% below. The most highly elevated ratio for the metropolitan regions was in Playford - Hills (an SAR of 183**, 851 admissions), followed by Salisbury Balance (178**, 1,636), Adelaide Hills - Ranges (127**, 2,117), and Playford - Elizabeth (124**, 6,025) and - West Central (116**, 2,306). SLAs with ten per cent more admissions than expected included Charles Sturt - Inner East (110**, 4,765), Port Adelaide Enfield - Inner (110**, 4,428) and - Coast (110**, 5,898), and West Torrens - West (110**, 6,808).

Large numbers of admissions were recorded in the SLAs of Tea Tree Gully - South (6,259 admissions, 101), Salisbury - South-East (6,181, 99), Port Adelaide Enfield - East (5,932, 105**), and Charles Sturt - Coastal (5,744, 91**) and - North-East (5,331, 107**).

A number of SLAs in the region had low SARs with fewer admissions of females than expected from the State rate, including Prospect (70**, 2,555), Playford - East Central (76**, 2,360), West Torrens - East (76**, 3,576), Burnside - North-East (79**, 3,534), Tea Tree Gully - Central (82**, 3,693), Walkerville (83**, 1,236), Campbelltown - East (85**, 4,359), Norwood Payneham St Peters - West (88**, 3,189) and Unley - East (88**, 3,667).

Southern Adelaide

In the Southern region, there were 62,913 admissions of females, just one per cent more than expected from the State rates (SAR of 101*).

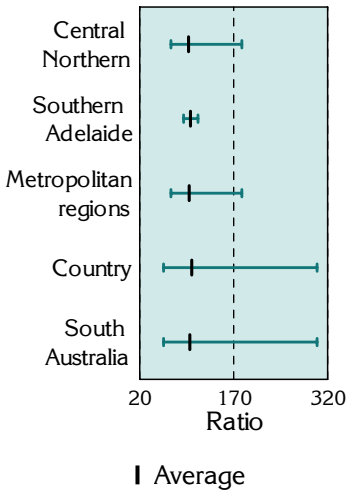
Elevated ratios in this region were mapped in the SLAs of Onkaparinga - North Coast (an SAR of 113**, 3,878 admissions) and - Morphett (112**, 4,862), and Marion - North (111**, 6,292).

Large numbers of admissions were recorded in several SLAs, including Marion - Central (6,945 admissions, 99), Onkaparinga - Woodcroft (5,664, 97*), Mitcham - West (4,720, 102), Holdfast Bay - North (4,567, 101) and Mitcham - Hills (4,406, 98).

Fewer females were admitted to hospital than expected in the SLAs of Onkaparinga - Hills (91**, 1,797 admissions) and Marion - South (90**, 2,975).

* **indicates statistical significance: see page 24**

Map 7.38
Admissions of females, metropolitan regions, 2003/2004

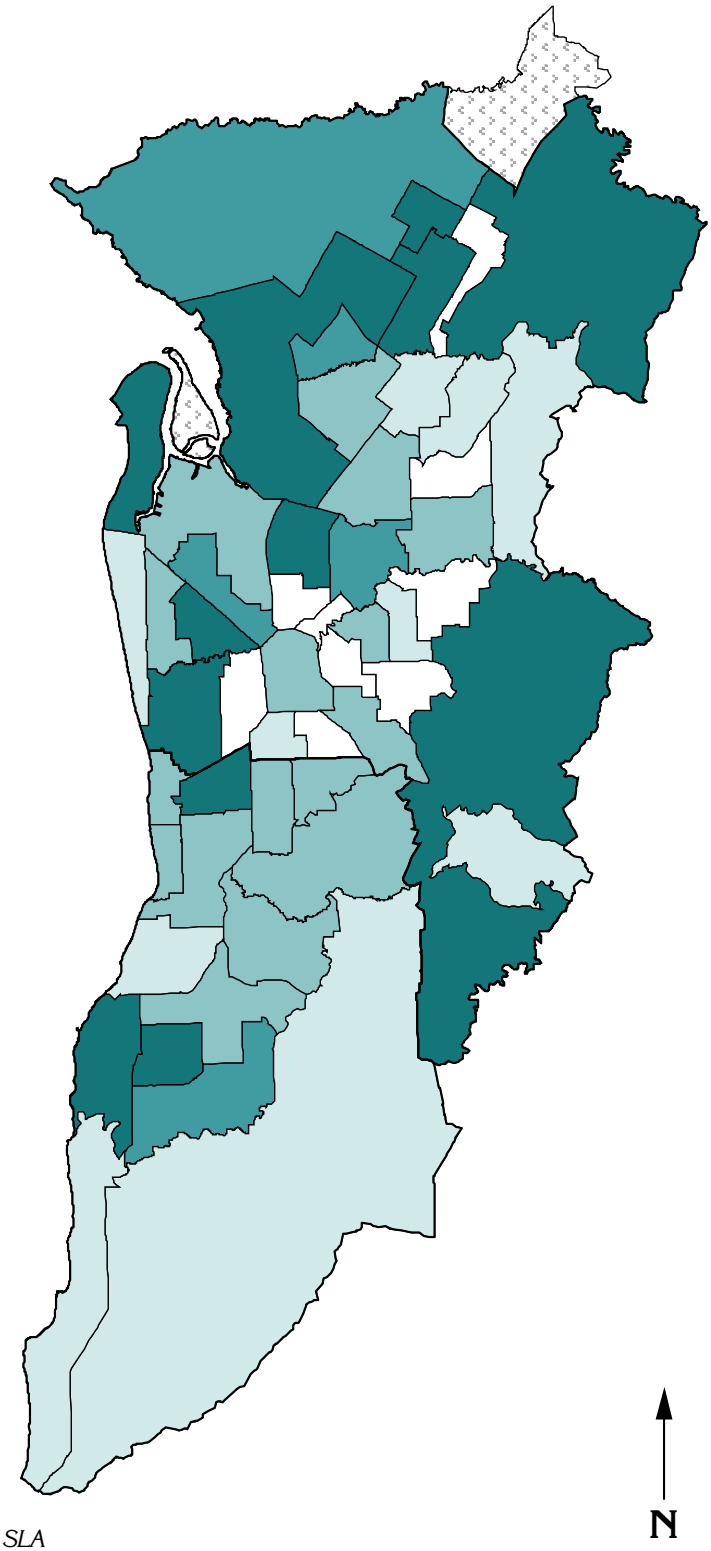


Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

SLA
Health Region

Standardised Admission Ratio (as an index)*, by SLA

- *110 and above*
- *105 to 109*
- *95 to 104*
- *90 to 94*
- *below 90*
- *data not mapped#*



**Index shows the number of admissions of females in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country South Australia

There was a slightly higher than expected rate of admissions for females in country South Australia (a standardised admission ratio (SAR) of 103**, 77,528 admissions). The map shows a similar geographic distribution of ratios to that for males, although there are more SLAs with elevated ratios (Map 7.39). **Northern and Far Western** and **Mid North** had the most highly elevated ratios (Table 7.48 and graph opposite).

Table 7.48: Regional totals, admissions of females, 2003/2004

Region	No.	SAR
Hills Mallee Southern	19,784	95**
Wakefield[1]	18,069	100
South East	10,336	94**
Northern & Far Western	10,380	129**
Eyre	6,209	106**
Mid North	6,365	111**
Riverland	6,385	109**
Country SA	**77,528**	**103****
Central Northern	142,023	98**
Southern	62,913	101*
Metropolitan regions	**204,936**	**99****
South Australia	**282,524**	**100**

[1]**Gawler is included in the Wakefield region**

The correlation analysis shows a weak association at the SLA level between high rates of admission of females and socioeconomic disadvantage (Table 8.2).

The Regions

There were 29% more admissions of females from **Northern and Far Western** than expected from the State rates (an SAR of 129**, 10,380 admissions). Within the region, there were elevated SARs in Unincorporated Whyalla (153**, 64 admissions), Port Augusta (147**, 3,464), Unincorporated Flinders Ranges (135**, 234), Whyalla (133**, 5,004), Coober Pedy (130**, 424) and Flinders Ranges (115**, 362); and fewer admissions than expected in Unincorporated Far North (62**, 405).

Mid North region had an overall SAR of 111** (6,365 admissions), with one third more admissions than expected from the State rates in Peterborough (an SAR of 133**, 490). Elevated SARs were also mapped in Barunga West (124**, 612), Port Pirie Balance (124**, 765), and Orroroo/Carrieton (121**, 240).

Females in the **Riverland** had nine per cent more admissions than expected (109**, 6,385). Within the region, Unincorporated Riverland had nearly twice the expected number (an SAR of 199, 37 admissions), followed by Berri and Barmera - Barmera (141**, 1,130) and Renmark Paringa – Paringa (116**, 312). Renmark Paringa - Renmark (1,526 admissions, 106*) and Berri and Barmera - Berri (1,302, 108**) both had large numbers of female residents admitted to hospital. The lowest SAR in the region was recorded for Loxton Waikerie - East (95, 1,246 admissions).

The overall admission rate for **Eyre** was six per cent above the State average, an SAR of 106** (6,209 admissions). There was considerable variation within the region, with SARs ranging from 303** in Unincorporated West Coast (238 admissions) to 84* in Franklin Harbor (197 admissions) (see graph opposite). SLAs with high SARs also included Le Hunte (142**, 353), Ceduna (135**, 785), Tumby Bay (114**, 576) and Lower Eyre Peninsula (112**, 738). Cleve (85**, 278) and Streaky Bay (86*, 266) both had fewer admissions than expected.

Wakefield had the expected admission rate based on the population size and structure (an SAR of 100, 18,069 admissions). Wakefield had an elevated SAR of 114** (1,360 admissions). Fewer females were admitted to hospital than expected in the SLAs of Yorke Peninsula - South (87**, 688) and Gawler (89**, 3,103).

There were fewer admissions of females than expected from the State rates in **Hills Mallee Southern** (an SAR of 95**, 19,784 admissions). Highly elevated ratios were mapped in the SLAs of The Coorong (137**, 1,389 admissions), Kangaroo Island (121**, 889) and Southern Mallee (121**, 465).

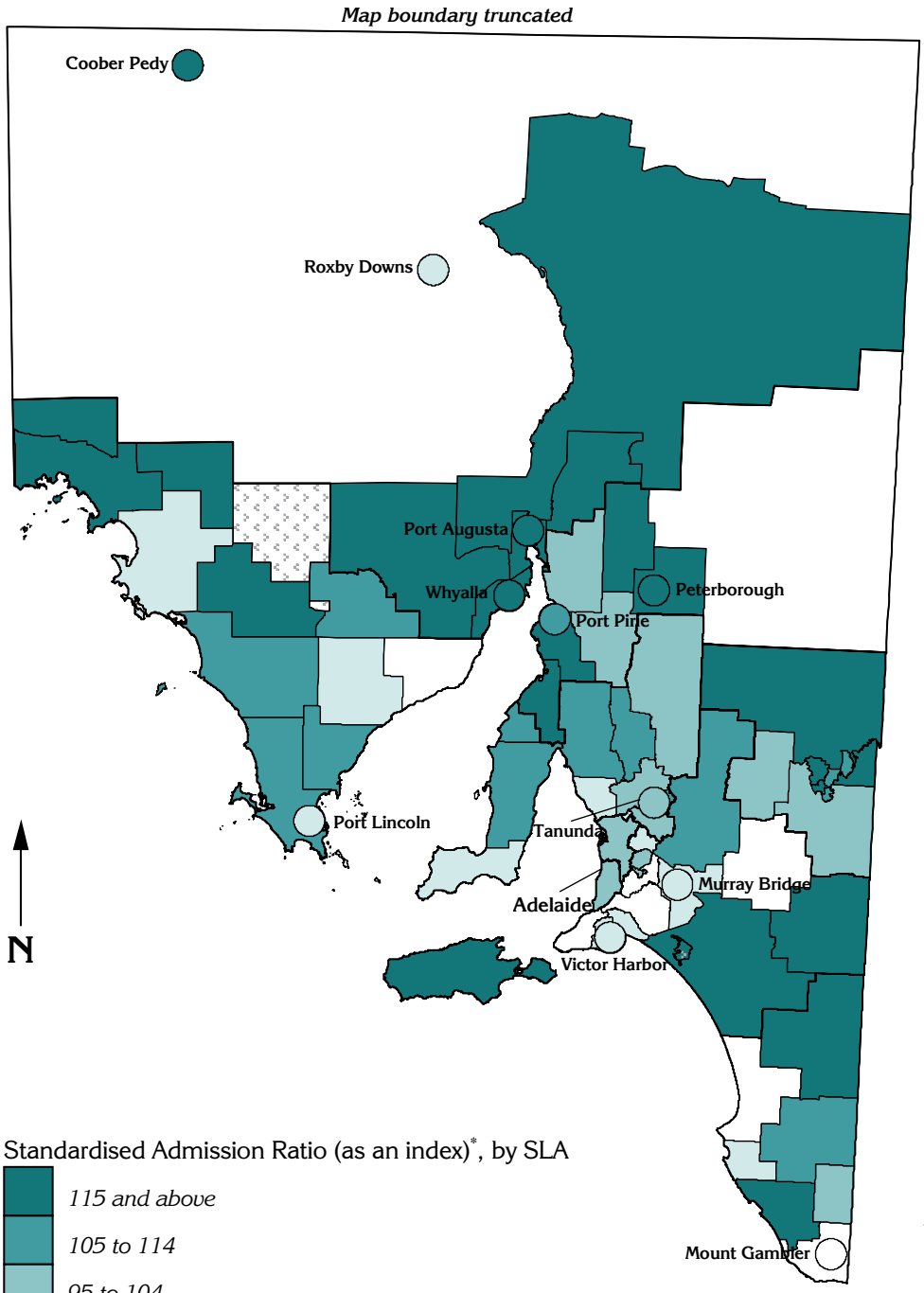
South East had an SAR of 94** (10,336 admissions). There was considerable variation in this region, with highly elevated ratios in the SLAs of Tatiara (122**, 1,398) and Wattle Range - West (120**, 1,926). Naracoorte and Lucindale had a relatively large number of admissions (1,560 admissions, 108**). Low SARs were mapped in Grant (58**, 730), Lacepede (80**, 338), Mount Gambier (84**, 3,590) and Robe (85**, 215).

ASGC remoteness classification

The pattern of admissions by remoteness for females closely follows the pattern evident for total admissions, with an SAR of 99** in the Major Cities class; ratios of 95**, 113** and 101 in the middle three classes; and an SAR of 117** in the Very Remote areas.

* **indicates statistical significance: see page 24**

Map 7.39
Admissions of females, South Australia, 2003/2004



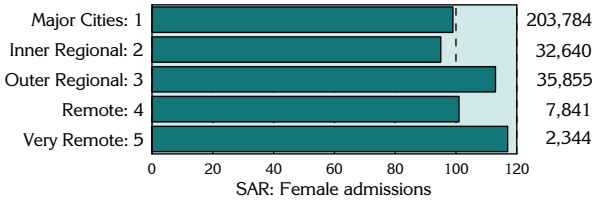
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Admission Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

*Index shows the number of admissions of females in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the SLA has a population of less than 100



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Admissions for a tonsillectomy, 2003/2004

Tonsillectomy involves the removal of a person's tonsils where, for example, there has been repeated infection of the tonsils over an extended period. There has been a trend of declining admission rates for tonsillectomies for some time. In 1980, there were 472 admissions for a tonsillectomy per 100,000 people (Sax 1983); by 1990 to 1992, the rate was down to 290.5 and by 2003/2004, it was less than half the 1980 level, at 202.7. The rate of admissions for country residents is higher in each period shown, and has declined by a lesser amount (27.8%) than in Metropolitan Adelaide (32.3%) (Table 7.49).

Table 7.49: Admissions[1] for a tonsillectomy

Age-standardised rate per 100,000

Section of State	1990-1992	1995/1996	2003/2004	Per cent change[2]
Metropolitan Adelaide (incl. Gawler)	292.2	229.6	197.9	-32.3
Country	298.6	237.8	215.5	-27.8
South Australia	290.5	231.9	202.7	-30.2

[1]Includes admissions to public acute hospitals, private hospitals and day surgery facilities, including admissions of same day patients

[2]Per cent change between the periods 1990-1992 and 2003/2004 in the rate of admissions for a tonsillectomy

Metropolitan regions

There were 2,145 admissions for a tonsillectomy in 2003/2004, three per cent fewer than expected from the rates for the metropolitan regions, excluding Gawler (a standardised admission ratio (SAR) of 97).

There is no identifiable spatial pattern in standardised admission ratios (Map 7.40); similarly, there is no consistent relationship in the correlation analysis between high rates of admission for a tonsillectomy, and socioeconomic status at the SLA level (Table 8.1).

Central Northern Adelaide

Central Northern Adelaide had 1,551 admissions for a tonsillectomy in 2003/2004, the number expected for its population size and structure (an SAR of 100). Salisbury Balance (with an SAR of 204**, 32 admissions) and Playford - Hills (189*, 14) had highly elevated SARs, with around twice the expected number of admissions for a tonsillectomy. Highly elevated ratios were also calculated for Charles Sturt - Inner East (147**, 58), Tea Tree Gully - North (141**, 93) and Adelaide Hills - Ranges (135, 29). Other elevated ratios of note (although not statistically significant) were in Charles Sturt - Inner West (an SAR of 124, 56) Campbelltown - East (116, 62), Walkerville (115, 14), Playford - West (113, 22) and Port Adelaide Enfield - Coast (110, 61).

Relatively large numbers of admissions (although not statistically significant ratios) were recorded for the SLAs of Salisbury - South-East (73 admissions, an SAR of 97), Tea Tree Gully - South (69, 106), Salisbury - Inner North (69, 105), Tea Tree Gully - Central (61, 106), Port Adelaide Enfield - East (58, 103), Salisbury - Central (58, 92), West Torrens - West (52, 105) and Port Adelaide Enfield - Port (50 admissions, 97).

Norwood Payneham St Peters - West had half the expected number of admissions for a tonsillectomy, with an SAR of 50** (16 admissions). Other SLAs with low ratios included Prospect (with an SAR of 69, 26 admissions), West Torrens - East (73, 32), Playford - East Central (76**, 39), Adelaide (79, 17), Burnside - North-East (81, 31), Unley - West (83, 26), Charles Sturt - Coastal (84, 44), Campbelltown - West (87, 30), Playford - West Central (87, 30), Unley - East (88, 32) and Playford - Elizabeth (89, 52).

Southern Adelaide

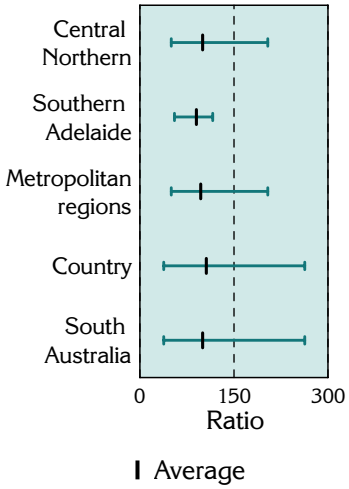
There were ten per cent fewer admissions for a tonsillectomy than expected from the metropolitan rates for Southern Adelaide (an SAR of 90*, 594 admissions). The SLAs of Holdfast Bay - South (an SAR of 116, 26 admissions), Mitcham - North-East (114, 33), Marion - Central (113, 64) and - North (112, 50), and Onkaparinga - Reservoir (109, 61) all had elevated ratios.

Onkaparinga - Woodcroft had 80 admissions for a tonsillectomy, two per cent fewer than expected (an SAR of 98).

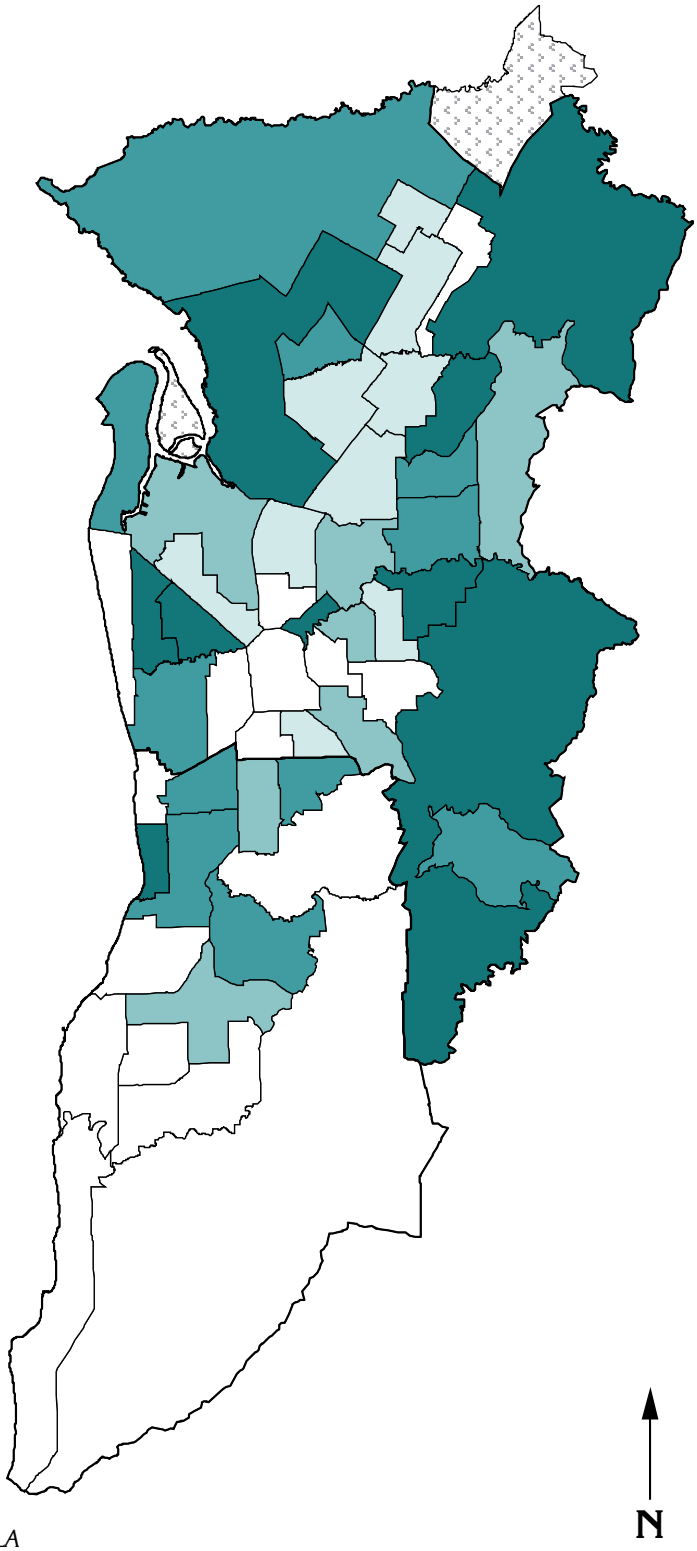
Onkaparinga - Hills had just over half the expected number of admissions (an SAR of 55*, 13 admissions). Low SARs were also recorded in Marion - South (67*, 33); Mitcham - Hills (70*, 32); Onkaparinga - South Coast (73*, 39), - North Coast (82, 29), - Morphett (83, 44) and - Hackham (75, 25); and Holdfast Bay - North (77, 23).

* **indicates statistical significance: see page 24**

Map 7.40
Admissions for a tonsillectomy, metropolitan regions, 2003/2004



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Admission Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

**Index shows the number of admissions of people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Country regions

Residents of country South Australia had six per cent more hospital admissions than expected, a standardised admission ratio (SAR) of 106** (950 admissions) (Table 7.50). There was considerable variation across the regions, with the most highly elevated SAR, of 130**, being recorded for **Northern and Far Western** (149 admissions), and the lowest ratio, of 59**, being recorded for **Riverland** (42 admissions) (see graph opposite). Many SLAs had fewer than five admissions and have been excluded from the data (Map 7.41). SLAs with elevated ratios were scattered throughout the State, in particular in the towns.

Table 7.50: Regional totals, admissions for a tonsillectomy, 2003/2004

Region	No.	SAR
Hills Mallee Southern	245	106
Wakefield[1]	237	118**
South East	122	88
Northern & Far Western	149	130**
Eyre	94	124*
Mid North	61	97
Riverland	42	59**
Country SA	**950**	**106****
Central Northern	1,551	100
Southern	594	90*
Metropolitan regions	**2,145**	**97**
South Australia	**3,096**	**100**

[1]**Gawler is included in the Wakefield region**

The correlation analysis shows a weak association at the SLA level between high rates of admission for a tonsillectomy and socioeconomic disadvantage (Table 8.2).

The Regions

The most highly elevated ratio in country South Australia was calculated for **Northern and Far Western**, with 30% more admissions for tonsillectomy than expected (an SAR of 130**, 149 admissions). Whyalla had a very highly elevated SAR, with nearly two thirds more admissions than expected (an SAR of 164**, 79 admissions), followed by Port Augusta (142*, 44) and Coober Pedy (119, five). Both Unincorporated Far North (an SAR of 68, nine admissions) and Roxby Downs (64, seven) had approximately one third fewer admissions than expected.

Eyre had almost one quarter more admissions than expected from the metropolitan rates (an SAR of 124*, 94 admissions). Both Cleve (263*, ten) and Ceduna (233**, 21) had more than double the expected number of admissions. Other elevated ratios were recorded for Streaky Bay (161, seven) and Port Lincoln (111, 36).

In **Wakefield**, 237 people were admitted for a tonsillectomy in 2003/2004 (an SAR of 118**). Yorke Peninsula - South had more than twice the expected number of admissions (212*, 15). Other SLAs with highly elevated ratios included Clare and Gilbert Valleys (154, 25), Barossa - Tanunda (130, eleven), Yorke Peninsula - North (125, 16), Copper Coast (124, 25), Light (122, 31), Wakefield (119, 16) and Gawler (111, 43).

Hills Mallee Southern recorded 245 people being admitted to hospital for a tonsillectomy (an SAR of 106). Murray Bridge (an SAR of 141*, 53), Alexandrina - Coastal (130, 22), Adelaide Hills Balance (124, 23) and The Coorong (123, 15) all had elevated ratios. The lowest ratio in the region was recorded for Adelaide Hills - North (an SAR of 61, nine).

Mid North had three per cent fewer admissions than expected (an SAR of 97, 61 admissions). Elevated, but not statistically significant, ratios were mapped in Peterborough (186, seven) and Mount Remarkable (126, seven). Northern Areas had fewer admissions than expected (an SAR of 83, eight).

There were 12% fewer admissions for a tonsillectomy than expected in the **South East** (an SAR of 88, 122). Although none of the SLAs had highly elevated ratios, Mount Gambier had a large number of admissions (56 admissions, an SAR of 105). Grant had 17% fewer admissions than expected (an SAR of 83, 14 admissions).

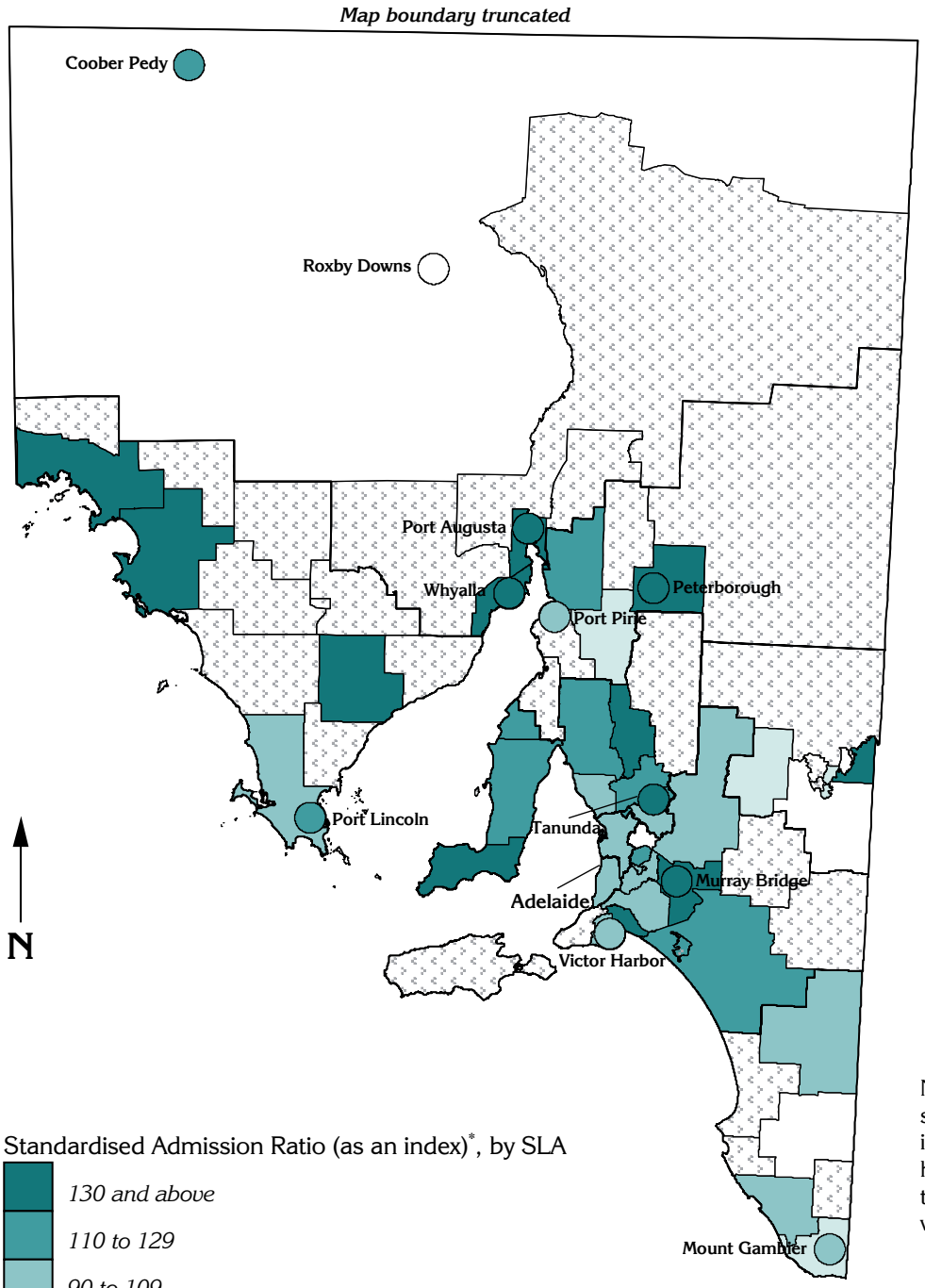
Riverland had nearly half the expected number of admissions (an SAR of 59**, 42). Renmark Paringa - Paringa was the only SLA in the region with more admissions than expected (an SAR of 143, five). Low ratios were recorded in Loxton Waikerie - East (38**, six), Renmark Paringa - Renmark (46*, eight), Berri and Barmera - Berri (78, 12) and Loxton Waikerie - West (80, eight).

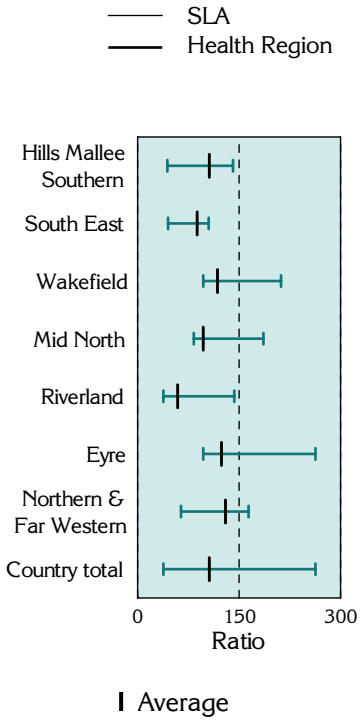
ASGC remoteness classification

There was relatively little variation across four of the classifications of remoteness with Major Cities having the lowest SAR of 98 and Inner Regional having an SAR of 107. The Very Remote areas had the highest SAR, of 118.

* **indicates statistical significance: see page 24**

Map 7.41
Admissions for a tonsillectomy, South Australia, 2003/2004





Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

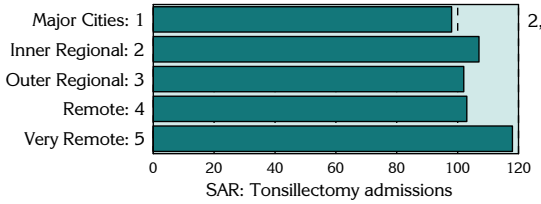
Standardised Admission Ratio (as an index)*, by SLA

- *130 and above*
- *110 to 129*
- *90 to 109*
- *70 to 89*
- *below 70*
- *data not mapped#*

**Index shows the number of admissions of people in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data were not mapped because the SLA has a population of less than 100, or there were fewer than five admissions

ASGC Remoteness classification Admissions



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Admissions of children aged 0 to 9 years for a myringotomy, 2003/2004

A myringotomy (incision into the eardrum, or tympanic membrane) is usually performed to relieve pressure and allow for drainage of fluid in the middle ear. Ventilation is maintained by putting a small tube (or grommet) in the incision.

Admission rates of children for a myringotomy have declined in both Metropolitan Adelaide and country South Australia (Table 7.51). There was a greater reduction in country South Australia (of 25.2%) than in Metropolitan Adelaide (19.6%), from 1990 to 1992 to 2003/2004: the decline in the rate for South Australia was 19.8%.

Table 7.51: Admissions[1] of children aged 0 to 9 years for a myringotomy

Age-standardised rate per 100,000

Section of State	1990-1992	1995/1996	2003/2004	Per cent change[2]
Metropolitan Adelaide (incl. Gawler)	2,013	2,037	1,619	-19.6
Country	1,752	1,624	1,310	-25.2
South Australia	1,906	1,912	1,528	-19.8

[1]Includes admissions to public acute hospitals, private hospitals and day surgery facilities, including admissions of same day patients

[2]Per cent change between the periods 1990-1992 and 2003/2004 in the rate of admissions for children aged 0 to 9 years for a myringotomy

Metropolitan regions

There were six per cent more admissions of children for a myringotomy than expected from the rates for the metropolitan regions (excluding Gawler), an SAR of 106* (2,093 admissions). A number of SLAs had elevated ratios, particularly in the outer-most north-western, north-eastern and eastern suburbs (Map 7.42).

The correlation analysis shows a very strong correlation between high rates of admission for a myringotomy and admission to a private hospital. There was a weak association between high rates of admission for a myringotomy and socioeconomic advantage at the SLA level (Table 8.1).

Central Northern Adelaide

The number of admissions for a myringotomy of children from Central Northern (1,434) was slightly above the State average, an SAR of 103. Playford - Hills had nearly four times the expected number of admissions with an SAR of 382**, but relatively small numbers, with 27 admissions. Other SLAs with highly elevated ratios included Adelaide Hills - Ranges (an SAR of 202**, 38 admissions), Salisbury Balance (174*, 27), Adelaide Hills - Central (169**, 38), Burnside - South-West (148*, 44), Unley - West (142*, 37), Playford - West (137, 24), Tea Tree Gully - North (136**, 85) and Walkerville (131, 13).

Although not statistically significant, elevated ratios were also recorded in Tea Tree Gully - Hills (127, 28) and - South (116, 66), Prospect (123, 41), Norwood Payneham St Peters - East (116, 28), Port Adelaide Enfield - East (115, 60), West Torrens - West (114, 49), Charles Sturt - Inner West 113, 45) and Burnside - North-East (111, 33).

Relatively large numbers of admissions for a myringotomy were recorded in the SLAs of Salisbury - South-East (69 admissions, an SAR of 97), - Inner North (65, 101) and - Central (61, 106), and Tea Tree Gully - Central (56, 107).

Port Adelaide Enfield - Port had just over half the expected number of admissions for a myringotomy (an SAR of 53**, 26 admissions). Other SLAs with low ratios included Charles Sturt - Coastal (57**, 24), Playford - Elizabeth (68*, 41), Charles Sturt - North-East (72, 35), West Torrens - East (75, 29), Salisbury - North-East (76, 34), Charles Sturt - Inner East (77, 28), Playford - East Central (77, 41) and - West Central (80, 30), Adelaide (85, eight), Port Adelaide Enfield - Coast (86, 44) and Campbelltown - West (89, 28).

Southern Adelaide

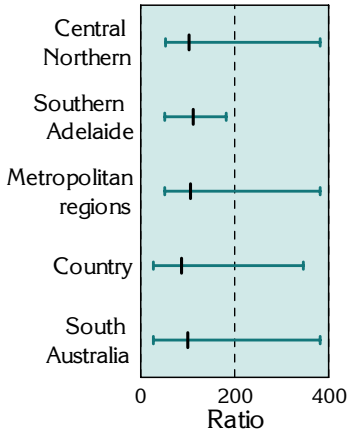
Southern Adelaide had a higher SAR than Central Northern, with 12% more admissions of children for a myringotomy than expected (an SAR of 112**, 659 admissions). Highly elevated ratios were calculated for Onkaparinga - Reservoir (an SAR of 182**, 87 admissions) and - Woodcroft (167**, 130), Holdfast Bay - South (164*, 29) and - North (147*, 33), and Marion - North (129, 53) and - Central (124, 59).

The Mitcham SLAs of - West (43 admissions, an SAR of 108) and - Hills (39 admissions, 99) had relatively large numbers of admissions.

Onkaparinga - North Coast had approximately half the expected number of admissions for a myringotomy (an SAR of 51**, 17), and the Onkaparinga SLAs of - Morphett (62**, 32), - South Coast (75, 38), and - Hackham (87, 27) all had low ratios, as did the SLA of Marion - South (63*, 27).

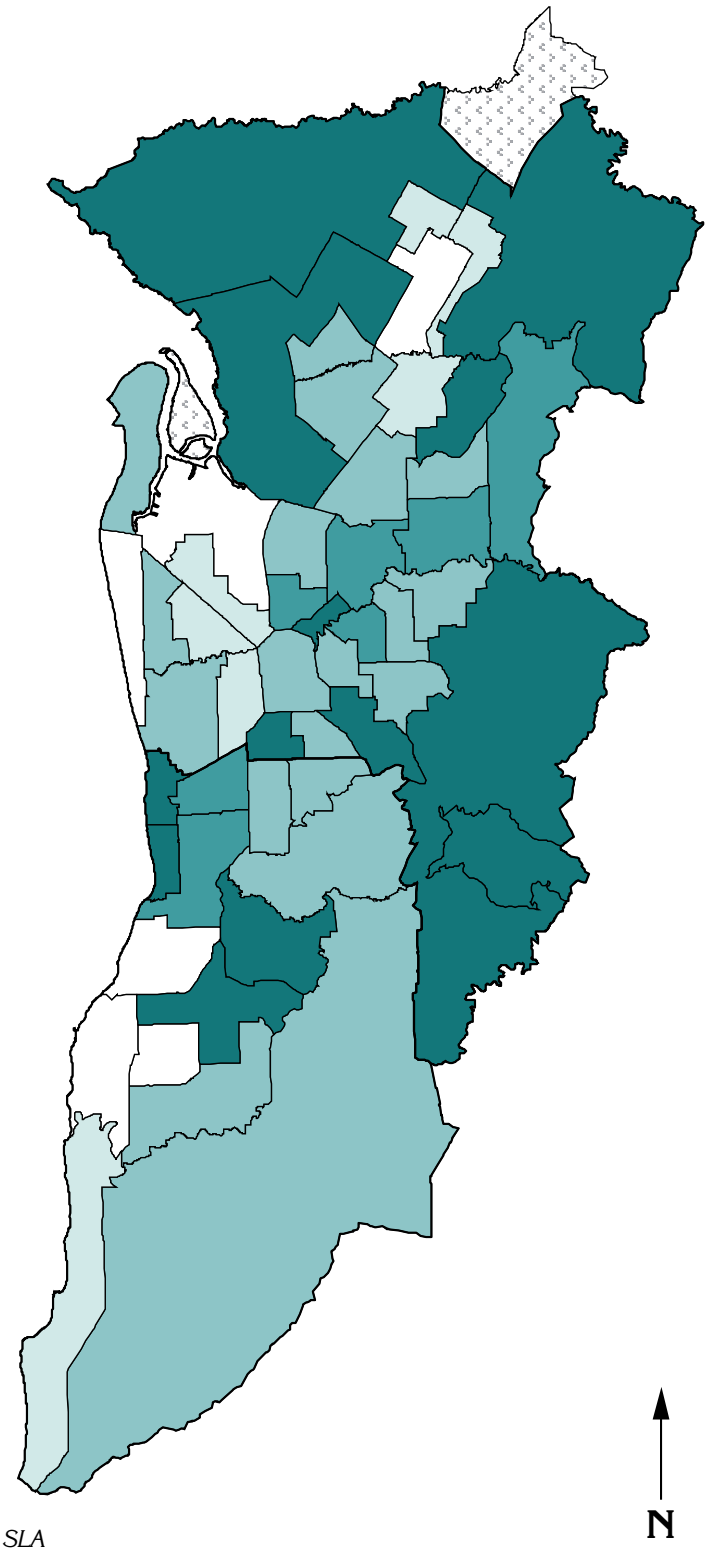
* **indicates statistical significance: see page 24**

Map 7.42
Admissions of children aged 0 to 9 years for a myringotomy, metropolitan regions, 2003/2004



Average

Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Admission Ratio (as an index)*, by SLA

- *130 and above*
- *115 to 129*
- *85 to 114*
- *70 to 84*
- *below 70*
- *data not mapped#*

**Index shows the number of admissions of children in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Admissions of children aged 0 to 9 years for a myringotomy, 2003/2004

Country regions

There were 13% fewer admissions in country regions than expected from the State rates, an SAR of 87** (760 admissions) (Table 7.52). The majority of SLAs in the country had too few admissions to be mapped. There was no distinct pattern of elevated SARs across the SLAs that were mapped (Map 7.43).

Table 7.52: Regional totals, admissions of children aged 0 to 9 years for a myringotomy, 2003/2004

Region	No.	SAR
Hills Mallee Southern	152	68**
Wakefield[1]	175	93
South East	193	140**
Northern & Far Western	61	54**
Eyre	68	89
Mid North	39	62**
Riverland	72	102
Country SA	**760**	**87****
Central Northern	1,434	103
Southern	659	112**
Metropolitan regions	**2,093**	**106***
South Australia	**2,854**	**100**

[1]**Gawler is included in the Wakefield region**

There was no consistent relationship between high rates of admission for a myringotomy and socioeconomic status, at the SLA level (Table 8.2).

The Regions

In the **South East**, there were 40% more admissions for a myringotomy than expected from the State rates, an SAR of 140** (193 admissions). Very highly elevated ratios were calculated for children in the SLAs of Robe (an SAR of 193, six), Mount Gambier (185**, 101) and Tatiara (179**, 31). Grant had a low SAR, with 28% fewer admissions than expected (an SAR of 72, eleven admissions).

The rate of admission in **Riverland** was slightly above average, with an SAR of 102 (72 admissions). Loxton Waikerie - East (an SAR of 162*, 25 admissions) and Berri and Barmera - Barmera (119, ten) both had elevated ratios. Low ratios were recorded for Berri and Barmera - Berri (an SAR of 63, ten) and Loxton Waikerie - West (79, eight).

In **Wakefield**, 175 children were admitted for a myringotomy in 2003/2004 (an SAR of 93). Elevated ratios were mapped in the SLAs of Light (134, 32), Gawler (127, 43) and Mallala (124, 20). A large number of SLAs in this region had low ratios, including Copper Coast (with an SAR of 62, 12 admissions), Barossa - Barossa (63, ten), Yorke Peninsula - North (67, eight), Wakefield (69, nine), Yorke Peninsula - South (71, five) and Clare and Gilbert Valleys (76, 12).

Eyre had eleven per cent fewer admissions for a myringotomy than expected (an SAR of 89, 68 admissions). Unincorporated West Coast (346*, five) and Cleve (209, eight) both had very highly elevated ratios, although with small numbers of admissions. Low SARs were mapped in Port Lincoln (84, 27) and Lower Eyre Peninsula (97, nine).

Hills Mallee Southern had a low SAR of 68**, with 152 admissions for a myringotomy. The highest SAR was just above average and was mapped for Adelaide Hills - North (an SAR of 101, 13). All other SLAs in the region had below average ratios, including Mount Barker Balance (an SAR of 27**, five admissions), The Coorong (49, six), Mid Murray (50, seven), Kangaroo Island (54, five), Murray Bridge (56**, 21), Victor Harbor (66, ten), Alexandrina - Strathalbyn (81, 14) and Mount Barker - Central (86, 34).

Mid North had less than two thirds the expected number of admissions for a myringotomy (an SAR of 62**, 39 admissions). Barunga West had an elevated SAR of 111 (five admissions). Low SARs were mapped in Port Pirie Balance (70, five admissions) and Port Pirie - City (75, 23).

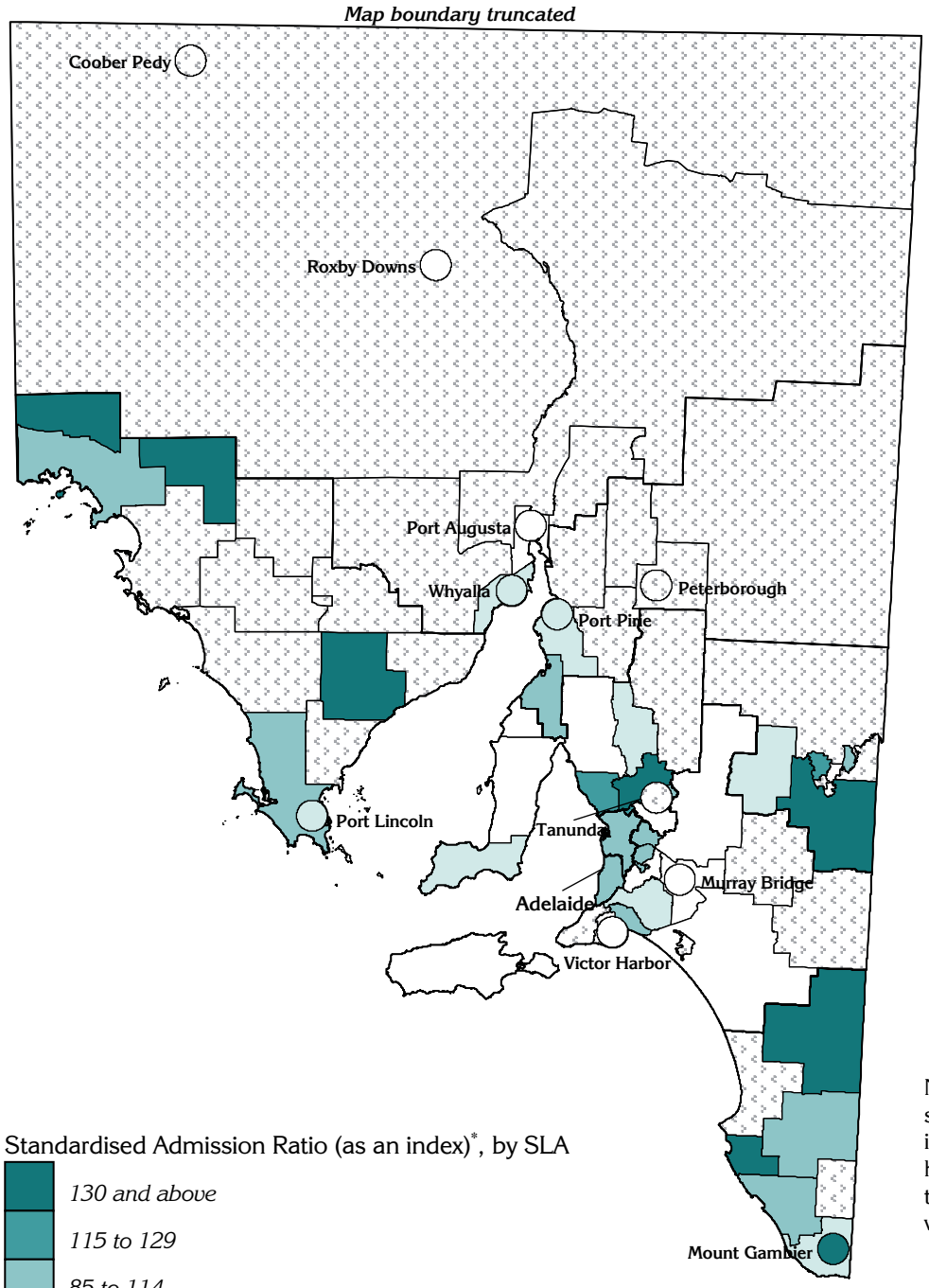
Northern and Far Western had just over half the expected number of admissions (an SAR of 54**, 61 admissions). Low ratios were mapped in Whyalla (an SAR of 72, 34), Port Augusta (46**, 14) and Roxby Downs (39*, five)

ASGC remoteness classification

There was a declining gradient across the remoteness classifications for admissions of children for a myringotomy, with the highest ratio recorded for Major Cities (105*), followed by Inner Regional (103), Outer Regional (80**), Remote (75*) and Very Remote (61*).

* **indicates statistical significance: see page 24**

Map 7.43
Admissions of children aged 0 to 9 years for a myringotomy, South Australia, 2003/2004



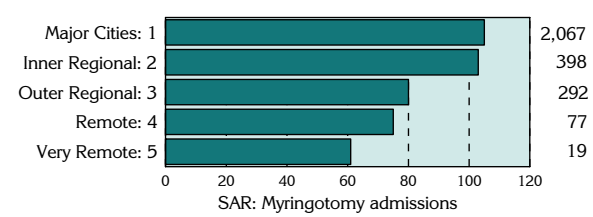
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Admission Ratio (as an index)*, by SLA

- *130 and above*
- *115 to 129*
- *85 to 114*
- *70 to 84*
- *below 70*
- *data not mapped#*

**Index shows the number of admissions of children in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data were not mapped because the SLA has a population of less than 100, or there were fewer than five admissions



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Admissions of females aged 15 to 44 years for a Caesarean section, 2003/2004

A Caesarean section is a surgical procedure where an incision (a cut) is made through the abdominal wall and uterus to deliver the baby. A Caesarean section is usually performed when it is safer for the mother or the baby than a vaginal delivery, or a vaginal delivery is not possible. In other cases, a woman may choose to have a Caesarean section rather than deliver her baby vaginally. Thus, some Caesarean sections are planned and some are performed as an emergency. Australia's rate of Caesarean sections is high by international standards; and in South Australia in 2003, 30% of births were by Caesarean section, compared to 17% in 1981 (PC 2006). Caesarean section rates are also higher when mothers are treated as private patients in either public or private hospitals in Australia (Roberts et al. 2000).

As Caesarean sections are generally performed on women aged from 15 to 44 years, this age range has been used in standardising the data. The rates of admission in 2003/2004 for a Caesarean section for females in this age group were similar in Metropolitan Adelaide and country South Australia (Table 7.53).

Table 7.53: Admissions[1] of females aged 15 to 44 years for a Caesarean section, 2003/2004

Section of State	No.[1]	Rate[2]
Metropolitan Adelaide (incl. Gawler)	3,834	30,245
Country	1,333	28,589
South Australia	5,167	29,800

[1]**Includes admissions to public acute hospitals, private hospitals and day surgery facilities, including admissions of same day patients**
[2]**Age-standardised rate per 100,000 births**

Metropolitan regions

The metropolitan regions (excluding Gawler) had a slightly above average standardised admission ratio (SAR) for a Caesarean section, with an SAR of 101 (3,781 admissions).

There were notably more admissions than expected for Caesarean sections in SLAs throughout the Southern region, with low ratios in Central Northern.

The correlation analysis shows a weak association at the SLA level between high rates of admission for a Caesarean section and socioeconomic advantage (Table 8.1).

Central Northern Adelaide

There were fewer admissions for a Caesarean section than expected in Central Northern (an SAR of 97, 2,600 admissions). SLAs with elevated ratios (none of which were statistically significant) included Tea Tree Gully - Central (an SAR of 112, 98 admissions), Salisbury - North-East (111, 77) and Adelaide Hills - Ranges (108, 42).

Relatively large numbers of women admitted for a Caesarean section were recorded for the SLAs of Salisbury - South-East (126 admissions, an SAR of 97), Port Adelaide Enfield - East (122, 100), Tea Tree Gully - South (116, 96), Salisbury - Inner North (105, 105), Salisbury - Central (103, 99) and Tea Tree Gully - North (101, 98).

SLAs with fewer admissions than expected included Port Adelaide Enfield - Port (65**, 58), Walkerville (80, 13), Norwood Payneham St Peters - East (80, 44), Playford - Hills (80, 12), Charles Sturt - North-East (an SAR of 87, 99), Salisbury Balance (88, 42), Playford - West Central (88, 53) and - West (89, 26), and Port Adelaide Enfield - Inner (an SAR of 89, 73).

Southern Adelaide

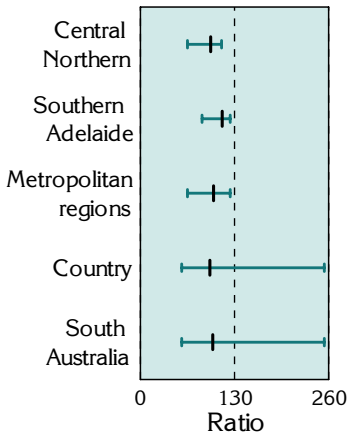
Southern had 13% more admissions for a Caesarean section than expected (an SAR of 113**, 1,181 admissions). A number of SLAs had elevated ratios, including Onkaparinga - Reservoir (an SAR of 124*, 118), - Woodcroft (119*, 141), - Morphett (118, 105), - Hackham (118, 52) and - Hills (122, 39); Holdfast Bay - North (121, 60); Mitcham - Hills (120, 75) and - West (an SAR of 111, 91); and Marion - Central (an SAR of116, 115) and - South (110, 85).

Marion - North had a relatively large number, with 92 admissions in 2003/2004 (an SAR of 105).

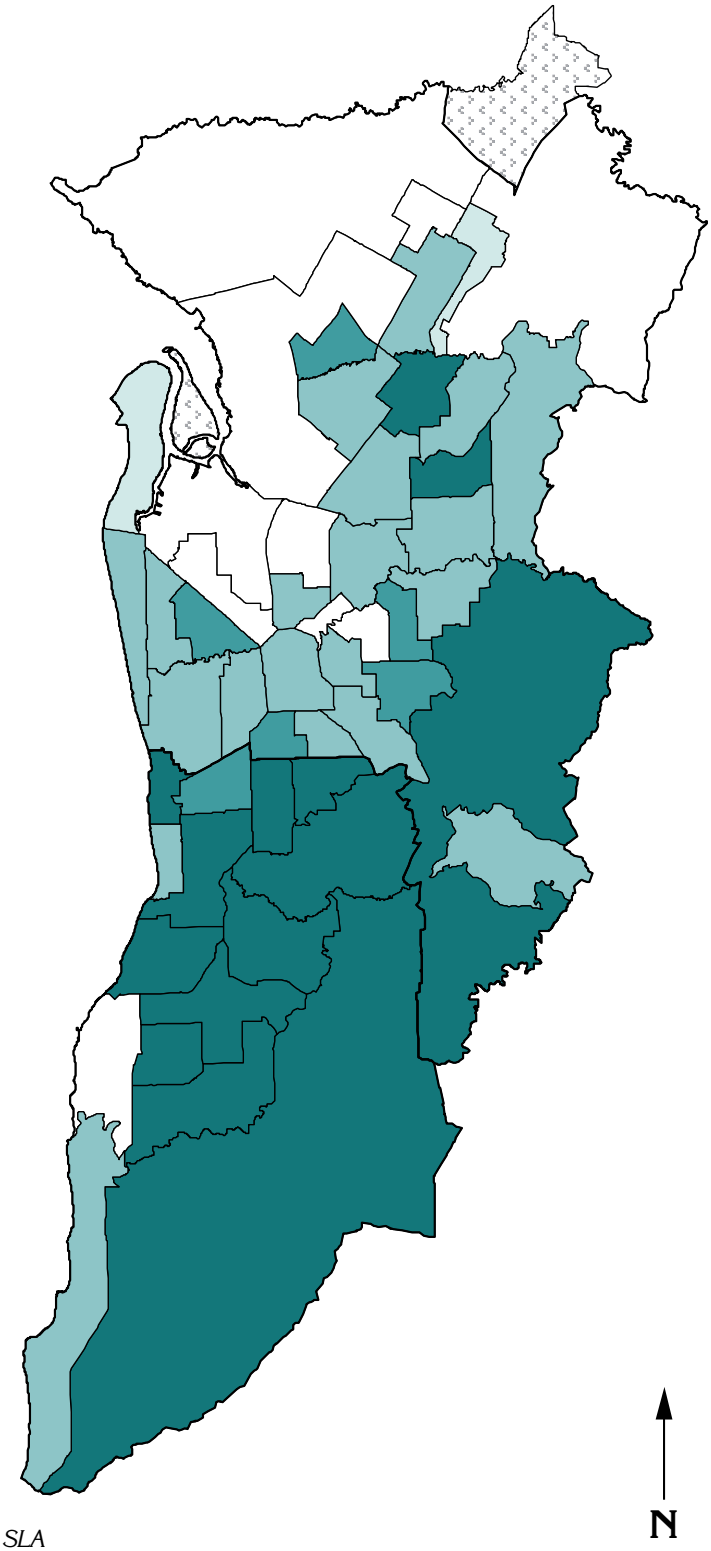
Onkaparinga - North Coast had 15% fewer admissions for a Caesarean section than expected from the State rates, with an SAR of 85 (46 admissions).

* **indicates statistical significance: see page 24**

Map 7.44
Admissions of females aged 15 to 44 years for a Caesarean section, metropolitan regions, 2003/2004



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.



SLA
Health Region

Standardised Admission Ratio (as an index)*, by SLA

- *115 and above*
- *105 to 114*
- *95 to 104*
- *85 to 94*
- *below 85*
- *data not mapped#*

**Index shows the number of admissions of females in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Admissions of females aged 15 to 44 years for a Caesarean section, 2003/2004

Country regions

In 2003/2004, 1,386 women were admitted for a Caesarean section, four per cent fewer than expected from the State rates (an SAR of 96) (Table 7.54). A number of SLAs in the State had too few admissions to be mapped. SLAs with elevated ratios were scattered throughout the State (Map 7.45).

Table 7.54: Regional totals, admissions of females aged 15 to 44 years for a Caesarean section, 2003/2004

Region	No.	SAR
Hills Mallee Southern	317	88*
Wakefield[1]	303	99
South East	207	91
Northern & Far Western	214	109
Eyre	134	105
Mid North	97	99
Riverland	114	91
Country SA	**1,386**	**96**
Central Northern	2,600	97
Southern	1,181	113**
Metropolitan regions	**3,781**	**101**
South Australia	**5,167**	**100**

[1] **Gawler is included in the Wakefield region**

The correlation analysis shows a weak association at the SLA level between high rates of admission for a Caesarean section and socioeconomic disadvantage (Table 8.2).

The Regions

Northern and Far Western had the highest SAR for a Caesarean section in country South Australia, with nine per cent more admissions than expected (an SAR of 109, 214 admissions). Flinders Ranges (145, eleven) and Port Augusta (143**, 88) both had highly elevated SARs. Unincorporated Far North also had an elevated SAR (116, 14). Low SARs were mapped in Coober Pedy (an SAR of 81, six) and Roxby Downs (78, 12).

Eyre had five per cent more admissions for a Caesarean section than expected (an SAR of 105, 134 admissions). Unincorporated West Coast had two and a half times the expected number of admissions (an SAR of 254**, eight admissions). Elevated SARs were also mapped for Tumby Bay (139, ten) and Port Lincoln (115, 66). Low SARs (and small numbers) were recorded for Ceduna (an SAR of 67, eleven), Le Hunte (81, five) and Streaky Bay (82, five).

In **Wakefield**, 303 women were admitted for a Caesarean section in 2003/2004 (an SAR of 99). SLAs with elevated SARs included Mallala (126, 28 admissions), Light (116, 51) and Copper Coast (109, 33). Gawler had a relatively large number of admissions (53 admissions, 101). Barossa - Tanunda (an SAR of 57, eight admissions), Yorke Peninsula - South (72, six), Wakefield (79, 15), Yorke Peninsula - North (87, 14) and Goyder (89, 13) all had fewer admissions than expected.

Mid North also had an SAR of 99 (97 admissions). Barunga West had twice as many admissions as expected (200*, nine). Other elevated ratios were mapped in Peterborough (109, eight), and Mount Remarkable (108, seven). Port Pirie - City recorded 50 admissions for a Caesarean section in 2003/2004 (an SAR of 94).

Riverland had nine per cent fewer admissions than expected with an SAR of 91 (114 admissions). Loxton Waikerie - West had a highly elevated SAR with 41% more admissions than expected (an SAR of 141, 25). SLAs with fewer admissions than expected included Renmark Paringa - Paringa (an SAR of 65, five), Loxton Waikerie - East (75, 18) and Berri and Barmera - Berri (80, 22).

South East also had an SAR of 91 (207 admissions). The highest SAR in this region was seven per cent above the average and was mapped for Lacepede (107, seven admissions). Wattle Range - West had a relatively large number with 30 admissions (an SAR of 93). Both Tatiara (an SAR of 85, 20) and Mount Gambier (an SAR of 85, 87) had 15% fewer admissions than expected from the State rates.

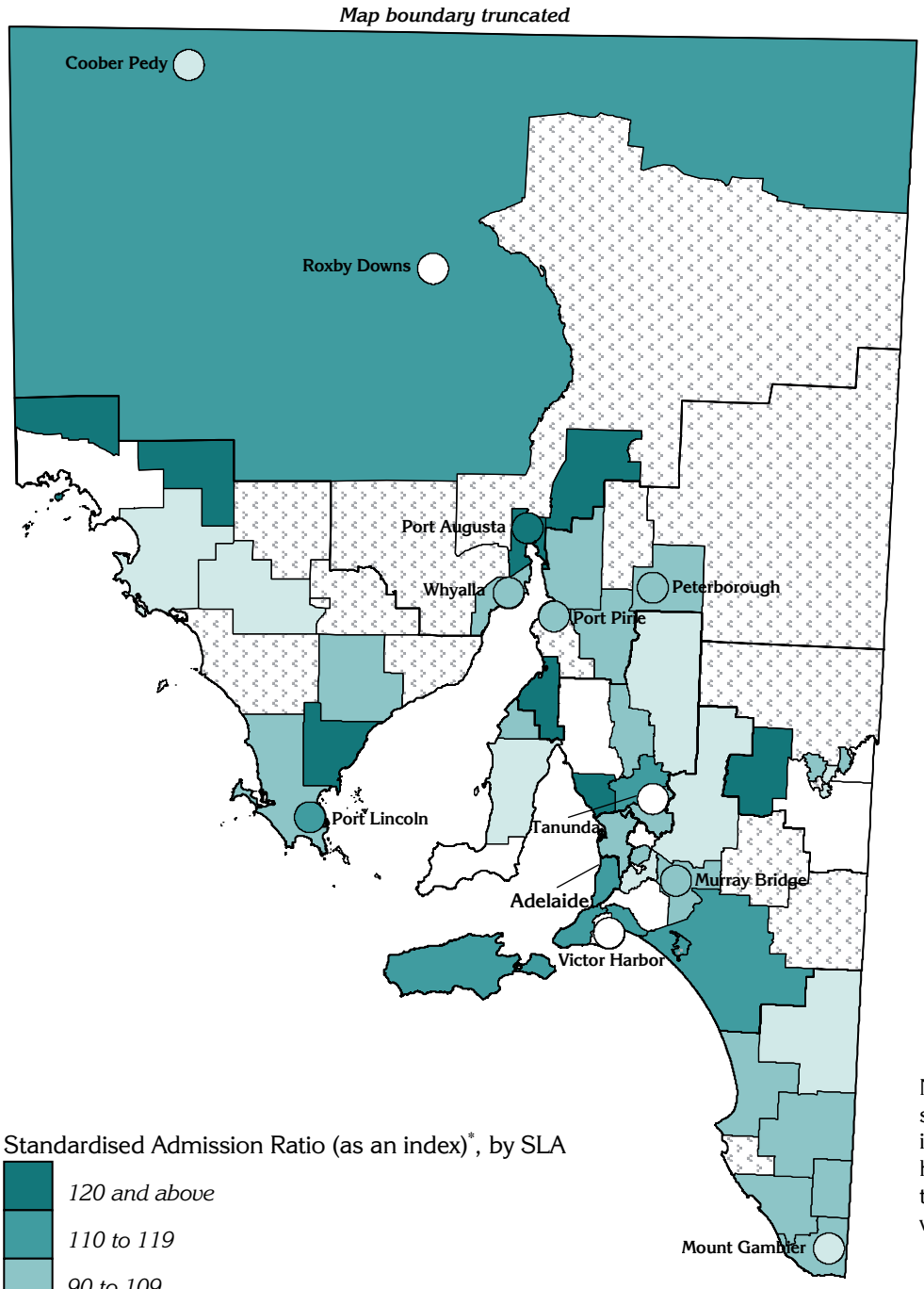
The lowest SAR in the country was recorded for **Hills Mallee Southern** with 12% fewer admissions than expected (an SAR of 88*, 317 admissions). Elevated SARs were mapped in the SLAs of Kangaroo Island (116, 16 admissions), The Coorong (116, 24), Yankalilla (114, ten) and Alexandrina - Coastal (113, 28).

ASGC remoteness classification

Major Cities, Outer Regional and Remote areas had an SAR of 101. The lowest SAR of 92* was recorded for Inner Regional Areas, followed by 98 in Very Remote.

* **indicates statistical significance: see page 24**

Map 7.45
Admissions of females aged 15 to 44 years for a Caesarean section, South Australia, 2003/2004



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

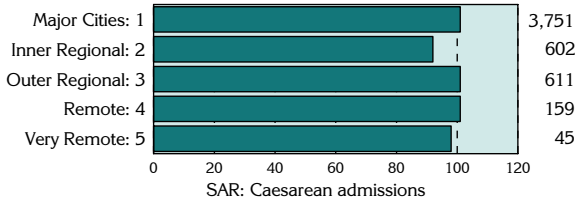
Standardised Admission Ratio (as an index)*, by SLA

- *120 and above*
- *110 to 119*
- *90 to 109*
- *80 to 89*
- *below 80*
- *data not mapped#*

**Index shows the number of admissions of females in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data were not mapped because the SLA has a population of less than 100, or there were fewer than five admissions

ASGC Remoteness classification Admissions



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Admissions of females aged 30 years and over for a hysterectomy, 2003/2004

A hysterectomy is a surgical procedure to remove a woman's uterus (or womb) and cervix. Hysterectomies may be performed through a vaginal (37%) or abdominal (45%) incision (cut), or using laparoscopic (keyhole) surgery (18%).

The rate of admission for a hysterectomy for females aged 30 years and over has declined by nearly one quarter (22.8%), from 745.4 per 100,000 women in 1990-1992 to 575.7 in 2003/2004 (Table 7.55). The rates in Metropolitan Adelaide were consistently lower than those in the country. There was an increase in the rate of admission for a hysterectomy in country areas, from 777.5 per 100,000 women in 1990-1992, to 846.9 in 1995/1996, followed by a decline to 608.8 in 2003/2004.

Table 7.55: Admissions[1] of females aged 30 years and over for a hysterectomy

Age-standardised rate per 100,000

Section of State	1990-1992	1995/1996	2003/2004	Per cent change[2]
Metropolitan Adelaide (incl. Gawler)	741.7	637.9	563.9	-24.0
Country	777.5	846.9	608.8	-21.7
South Australia	745.4	691.5	575.7	-22.8

[1] Includes admissions to public acute hospitals, private hospitals and day surgery facilities, including admissions of same day patients

[2]Per cent change between the periods 1990-1992 and 2003/2004 in the rate of admissions of females aged 30 years and over for a hysterectomy

Metropolitan regions

In 2003/2004, there were 1,985 admissions of females 30 years and over for a hysterectomy in the metropolitan regions (excluding Gawler), two per cent fewer than expected (a standardised admission ratio (SAR) of 98). SLAs with elevated ratios were concentrated in the north and the outer south; with low ratios in a number of inner SLAs, as well as throughout the east and south-east.

The correlation analysis shows a very strong correlation with admissions of females and a weak association between high rates of admission for a hysterectomy and socioeconomic disadvantage at the SLA level (Table 8.1).

Central Northern Adelaide

The SAR was lower in Central Northern than in Southern, with five per cent fewer admissions than expected (an SAR of 95, 1,337 admissions). Playford - Hills had over half the expected number of admissions for a hysterectomy (an SAR of 220*, 13), Salisbury Balance (182*, 18), Playford - West (152, 23), Salisbury - North-East (140*, 56), Playford - Elizabeth (134*, 56), Tea Tree Gully - Central (129, 65), Salisbury - Inner North (127, 52), Charles Sturt - Inner East (115, 44), Tea Tree Gully - South (111, 69) and Salisbury - South-East (110, 71).

Relatively large numbers of admissions for hysterectomy were recorded for Port Adelaide Enfield - Coast (58 admissions, an SAR of 103), Tea Tree Gully - North (56 admissions, 105), Salisbury - Central (48, 99) and Campbelltown - East (48 admissions, 92).

A large number of SLAs in this region had fewer admissions for a hysterectomy than expected. These included Prospect (51**, 18 admissions), West Torrens - East (57**, 23), Burnside - North-East (60**, 26), Norwood Payneham St Peters - East (61, 18), Playford - East Central (64*, 21), Unley - East (65*, 24), Adelaide Hills - Ranges (71, 15), Charles Sturt - Coastal (72*, 45), Burnside - South-West (73, 31), Walkerville (74, ten), Norwood Payneham St Peters - West (81, 26), Campbelltown - West (85, 30), Charles Sturt - Inner West (85, 39), West Torrens - West (86, 44), Port Adelaide Enfield - East (87, 45) and Adelaide Hills - Central (88, 24).

Southern Adelaide

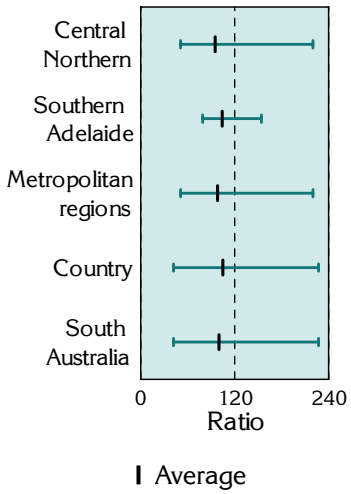
Southern Adelaide recorded four per cent more admissions than expected with an SAR of 104 (648 admissions). The Onkaparinga SLAs of - South Coast (154**, 68), - Morphett (136*, 60) and - North Coast (111, 36) all had more admissions for a hysterectomy than expected.

Large numbers of females aged 30 years and over were admitted for a hysterectomy in the SLAs of Onkaparinga - Woodcroft (63 admissions, an SAR of 96), Marion - Central (61 admissions, 96), Onkaparinga - Reservoir (55, 108) and Mitcham - Hills (49, 103).

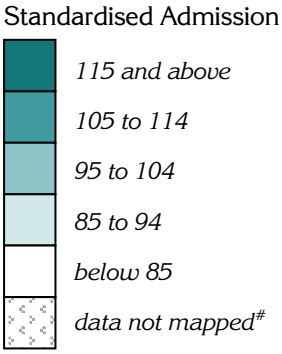
Fewer admissions than expected were recorded in the SLAs of Marion - South (an SAR of 79, 33 admissions) and Mitcham - West (83, 34).

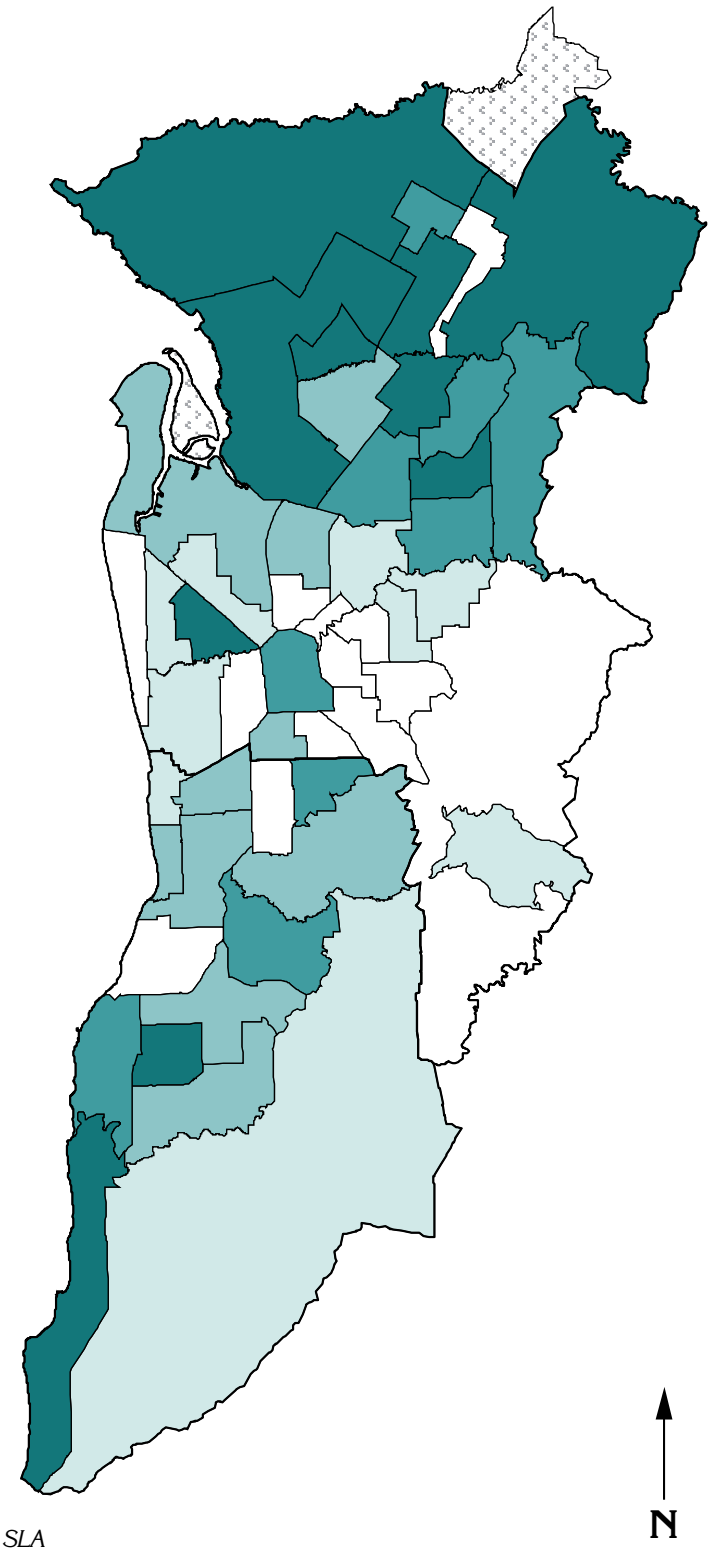
* **indicates statistical significance: see page 24**

Map 7.46
Admissions of females aged 30 years and over for a hysterectomy, metropolitan regions, 2003/2004



Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.





*Index shows the number of admissions of females in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map

Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Admissions of females aged 30 years and over for a hysterectomy, 2003/2004

Country regions

Five per cent more females aged 30 years and over were admitted to hospital for a hysterectomy than expected (an SAR of 105, 810 admissions) (Table 7.56). The majority of regions had elevated ratios, with the **Mid North** recording the highest at 46% more admissions than expected (146**, 82) and the lowest ratio with 30% fewer admissions than expected was recorded for **South East** (70**, 77 admissions).

Table 7.56: Regional totals, admissions of females aged 30 years and over for a hysterectomy, 2003/2004

Region	No.	SAR
Hills Mallee Southern	235	109
Wakefield[1]	220	118*
South East	77	70**
Northern & Far Western	59	73*
Eyre	67	112
Mid North	82	146**
Riverland	70	118
Country SA	**810**	**105**
Central Northern	1,337	95
Southern	648	104
Metropolitan regions	**1,985**	**98**
South Australia	**2,795**	**100**

[1]**Gawler is included in the Wakefield region**

The correlation analysis shows a weak association at the SLA level between high rates of admission for a hysterectomy and socioeconomic disadvantage (Table 8.2).

The Regions

The **Mid North** recorded nearly 50% more admissions for a hysterectomy than expected (an SAR of 146**, 82 admissions). SLAs within this region with elevated ratios included Peterborough (an SAR of 222, eight), Barunga West (202, ten), and Port Pirie - City (162**, 40) and Balance (155, ten). A low SAR with nearly 20% fewer admissions than expected was recorded for Northern Areas (an SAR of 81, seven).

In **Wakefield**, 220 female residents aged 30 and over were admitted for a hysterectomy (an SAR of 118*). Both Wakefield (an SAR of 211**, 25 admissions) and Barossa - Tanunda (200*, 17) had approximately twice the expected number of admissions. Other SLAs with elevated ratios included Yorke Peninsula - North (an SAR of 149, 21), Barossa - Angaston (147, 21), Light (143, 30) and Barossa - Barossa (141, 21).

Riverland had 18% more admissions than expected (an SAR of 118, 70 admissions). Within this region, highly elevated SARs were recorded for Renmark Paringa - Paringa (an SAR of 190, six admissions) and - Renmark (185**, 26), Loxton Waikerie - West (120, ten), Berri and Barmera - Berri (89, eleven) and - Barmera (88, seven), and Loxton Waikerie - East (76, ten).

Eyre had an SAR of 112 (67 admissions). Both Port Lincoln (152*, 37) and Ceduna (149, nine) had elevated ratios. Fewer admissions for a hysterectomy than expected were recorded for Lower Eyre Peninsula (66, five).

In **Hills Mallee Southern**, 235 females aged 30 years and over were admitted for a hysterectomy (an SAR of 109). Elevated ratios were recorded for the SLAs of Southern Mallee (an SAR of 190, seven), The Coorong (190*, 20), Murray Bridge (145*, 44), Yankalilla (140, eleven) and Adelaide Hills - North (122, 16).

Northern and Far Western had one quarter fewer admissions for a hysterectomy than expected (an SAR of 73*, 59 admissions). Many SLAs in this region had too few admissions to be mapped. Of those with sufficient numbers, Unincorporated Flinders Ranges had more than twice the expected number (an SAR of 227, five admissions), and both Whyalla (an SAR of 74, 27) and Port Augusta (an SAR of 80, 19) had fewer admissions than expected.

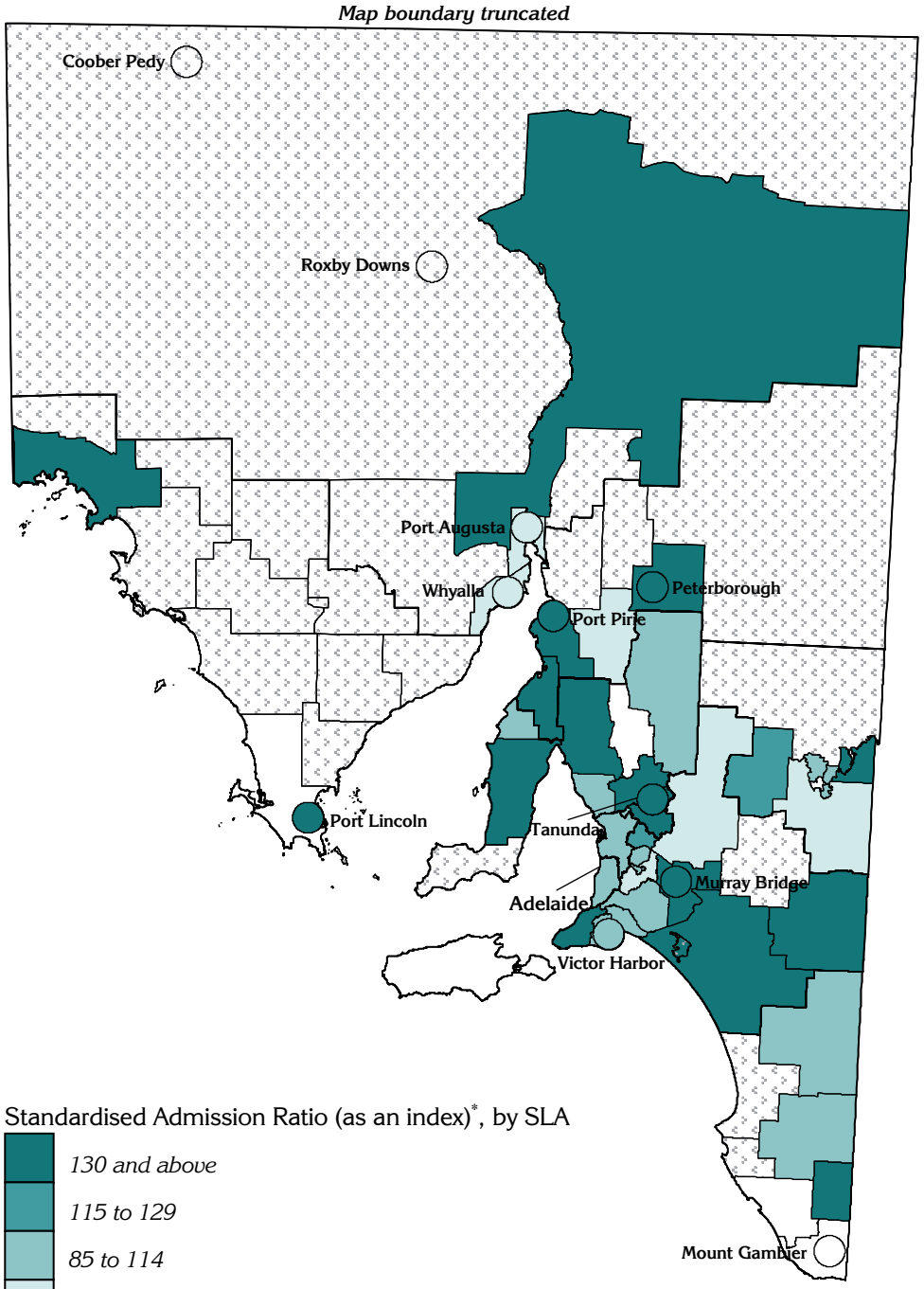
South East had the lowest SAR with 30% fewer admissions than expected (an SAR of 70**, 77 admissions). Wattle Range - East had a highly elevated SAR of 187 (ten admissions). There was considerable variation in the region with the lowest SAR of 42 recorded for Wattle Range - West (42*, seven), followed by Mount Gambier (53**, 22) and Grant (68, ten).

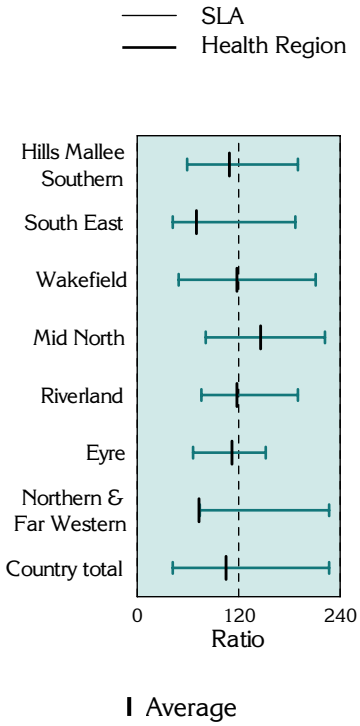
ASGC remoteness classification

The most highly elevated SAR was recorded for Inner Regional areas (114**) and declined to 77 for Very Remote areas. Major Cities had fewer admissions than expected with an SAR of 97.

* **indicates statistical significance: see page 24**

Map 7.47
Admissions of females aged 30 years and over for a hysterectomy, South Australia, 2003/2004





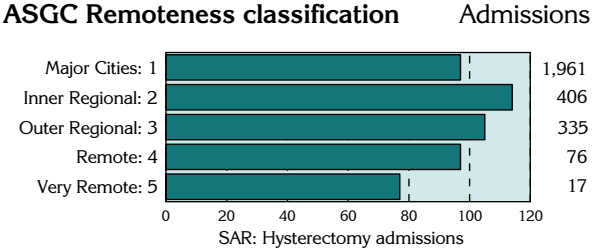
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Admission Ratio (as an index)*, by SLA

- *130 and above*
- *115 to 129*
- *85 to 114*
- *70 to 84*
- *below 70*
- *data not mapped#*

**Index shows the number of admissions of females in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals*

#Data were not mapped because the SLA has a population of less than 100, or there were fewer than five admissions



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Hospital booking lists: people waiting for more than six months for elective (non-urgent) surgical procedures, 30 June 2004

Each of the major metropolitan public acute hospitals (see Table 7.22, page 357) maintains a list of people who have been assessed as needing elective (i.e. non-urgent) surgery: these lists are referred to as 'booking lists'. People requiring urgent treatment for life-threatening conditions are not placed on a booking list but are admitted for treatment. A small number of people may be on the booking lists of more than one hospital.

The number of people on a booking list with a waiting period of more than six months decreased from 3,065 in 1992 to 2,560 in 2002, and then rose to 3,519 in 2004, an increase of nine per cent in the age standardised rate in South Australia over this 12-year period (Table 7.57). The larger percentage increase in the rate for country residents reflects, in part, their much smaller numbers on a booking list in earlier years.

Table 7.57: People waiting for elective surgery and on a booking list for more than six months[1]

Age-standardised rate per 100,000

Section of State	1992	2002	2004	Per cent change[2]
Metropolitan Adelaide (incl. Gawler)	256	196	272	6.3
Country	83	76	115	38.6
South Australia	211	168	230	9.0

[1] Includes people on a booking list of a public acute hospital: data based on people on a booking list for 181 days or longer: expressed here as 'for more than six months'

[2]Per cent change between 1992 and 2004 in the rate of people waiting for elective surgery and on a booking list for more than six months

Metropolitan regions

In 2004, 3,023 residents of the metropolitan regions (excluding Gawler) had been on a booking list for more than six months, 19% more than expected from the State rates (a standardised ratio of 119**) (Table 7.58).

The map (Map 7.48) and the correlation analysis show there is a very strong association at the SLA level between being on a booking list for more than six months, and socioeconomic disadvantage (Table 8.1). This is to be expected, as residents of some of the most disadvantaged SLAs also make the greatest use of public hospitals. However, the extent of their over-representation is greater than is indicated by their use of hospitals. For example, Onkaparinga - Morphett has an admission rate to a public hospital 14% above the metropolitan average, yet has almost twice the metropolitan rate of people on a booking list. In the north, people in the Salisbury SLAs of - South-East and - Central were also over-represented on a booking list (two thirds above the metropolitan average), compared with 16% and 15% above-average admission rates, respectively. In Playford - Elizabeth and - West Central, with 56% and 65% more admissions than the State average, there were also well above-average rates of people on a booking list, 67% and 58%, respectively (see Table 7.59 on page 434).

Central Northern Adelaide

There were 2,060 residents of Central Northern who had been on a hospital booking list for more than six months: this was 15% more people than expected from the State rates (a standardised ratio of 115**). Highly elevated ratios were recorded in the outer northern SLAs of Playford - Elizabeth (195**, 114 people), - West Central (184**, 47), and - East Central (140*, 56); Salisbury - South-East (191**, 153), - Central (188**, 113), - Inner North (174**, 86) and Salisbury Balance (131, 17); as well as in Tea Tree Gully - Central (132*, 77). There were also highly elevated ratios in the north-west and western SLAs of Port Adelaide Enfield - Port (168**, 103), - Inner (151**, 72), - East (138**, 97) and - Coast (131*, 88); and in Charles Sturt - North-East (140**, 85).

The lowest ratios were recorded for people in Adelaide Hills - Central (35**, ten), Burnside - North-East (40**, 21), Burnside - South-West (42**, 21), Unley - East (42**, 20), Adelaide Hills - Ranges (50*, eleven), Walkerville (56, ten) and Norwood Payneham St Peters - West (67*, 28).

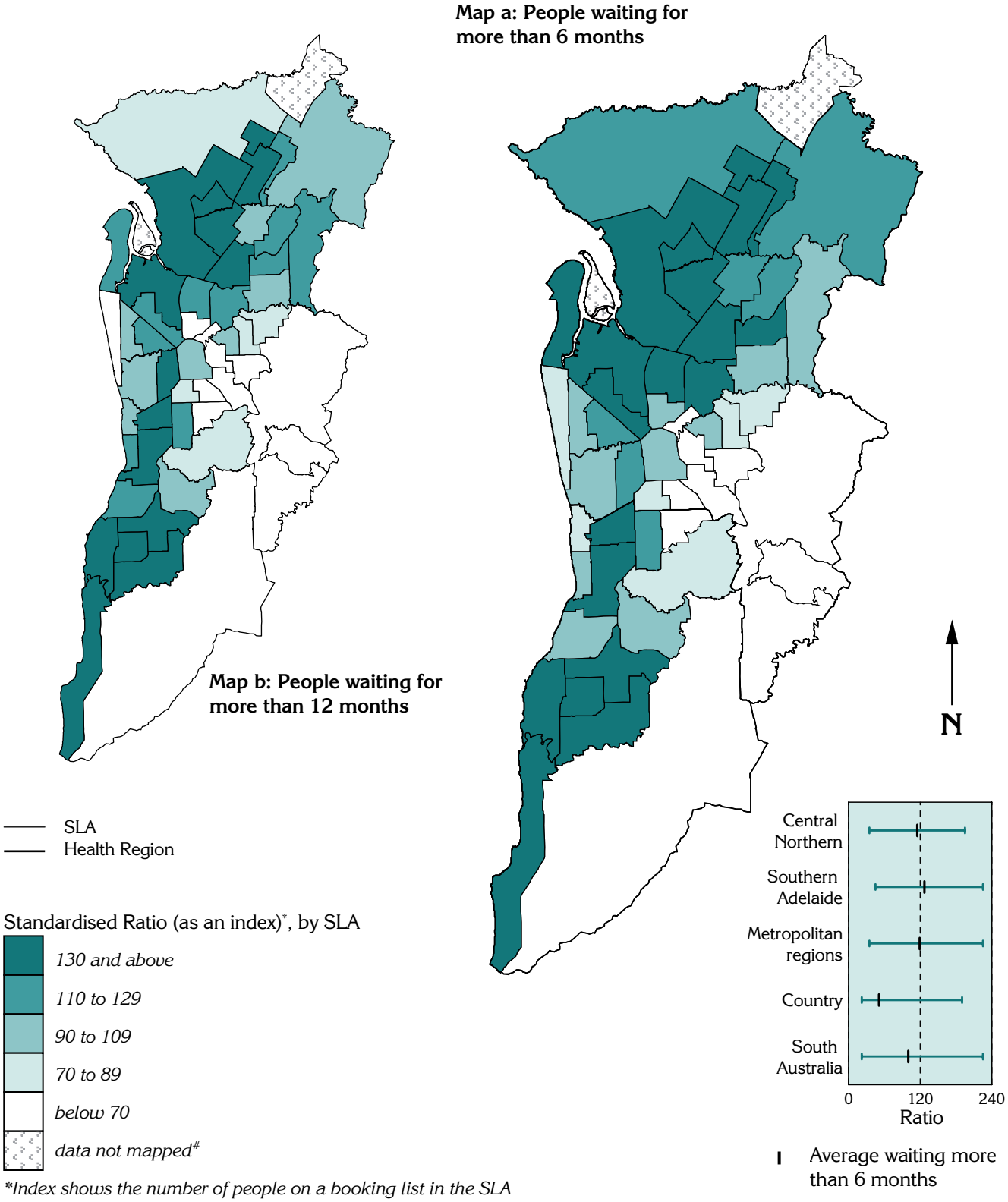
Southern Adelaide

Residents of the Southern region had a more highly elevated ratio (an SR of 127**) than recorded for Central Northern, with the most highly elevated ratio in Metropolitan Adelaide being in Onkaparinga - Morphett (225**, 120). There were also highly elevated ratios in the Onkaparinga SLAs of - Hackham (186**, 55), - South Coast (163**, 87), - North Coast (132*, 56) and - Woodcroft (156**, 116); and in Marion - Central (146**, 122) and - North (138**, 89).

Relatively few people in Mitcham - North-East (45**, 17) and Onkaparinga - Hills (64, 16) had been on a hospital booking list for more than six months.

* **indicates statistical significance: see page 24**

Map 7.48
Hospital booking lists: people waiting for elective (non-urgent) surgical procedures, metropolitan regions, 30 June 2004



*Index shows the number of people on a booking list in the SLA compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data for Torrens Island are mapped with Port Adelaide: Gawler has been mapped in the State map

Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Hospital booking lists: people waiting for more than six months for elective (non-urgent) surgical procedures, 30 June 2004

Country South Australia

In 2004, there were 49% fewer country people on a hospital booking list for more than six months than expected from the State rates (a standardised ratio of 51**), a total of 496 people (Table 7.58).

Standardised ratios were relatively low and all below 100 in country South Australia (Map 7.49). Due to the relatively small numbers of people on waiting lists, the map overleaf showing the spatial distribution of these individuals has been produced for each health region (which cover larger areas than the SLAs). The data will be discussed in terms of the major towns within these regions and the remaining area in that region (referred to as the 'balance').

Table7.58: Regional totals, People on a booking list for more than six months, at 30 June 2004

Region	No.	SR
Hills Mallee Southern	147	55**
Wakefield[1]	173	74**
South East	33	24**
Northern & Far Western	59	55**
Eyre	34	44**
Mid North	31	42**
Riverland	20	26**
Country SA	**496**	**51****
Central Northern	2,060	115**
Southern	963	127**
Metropolitan regions	**3,023**	**119****
South Australia	**3,519**	**100**

[1]**Gawler is included in the Wakefield region**

Being on a booking list for more than six months is weakly correlated at the SLA level with indicators of socioeconomic disadvantage (Table 8.2).

The Regions

There were 173 people on a booking list for six months or more in **Wakefield**, 26% fewer than expected from the State rates (a standardised ratio of 74**). The majority of these people were located in Wakefield Balance (171 people, 77**), with a further 32 in Gawler (an SR of 74).

In **Hills Mallee Southern**, there were 147 people waiting on a booking list for six months or more (a standardised ratio of 55**). The SLA of Hills Mallee Southern Balance had the highest ratio in the region (59**, 115 people), followed by Victor Harbor (54**, 18) and Murray Bridge (37**, 15).

Only 59 residents of **Northern and Far Western** were recorded as being on a booking list for six months or more (a ratio of 55**). Within the region, the towns of Roxby Downs (a ratio of 89, six people) and Coober Pedy (87, five people) had the highest ratios, although with very small numbers of people on a booking list. Other ratios of note were Port Augusta (74, 22), Northern and Far Western Balance (57, ten people) and Whyalla (33**, 16).

In **Eyre,** there were fewer than half the expected number of people on a waiting list (a standardised ratio of 44**, 34 people). Port Lincoln had a similar ratio of 45** (14 people) and Eyre Balance had a ratio of 44** (20 people).

Mid North had a standardised ratio of 42** (31 people). Port Pirie - City had a ratio of 48** (16 people) and there was a very low ratio of 34** (12 people) in Mid North Balance.

Riverland had a ratio approximately one quarter of that expected from the State rates (26**, 20 people).

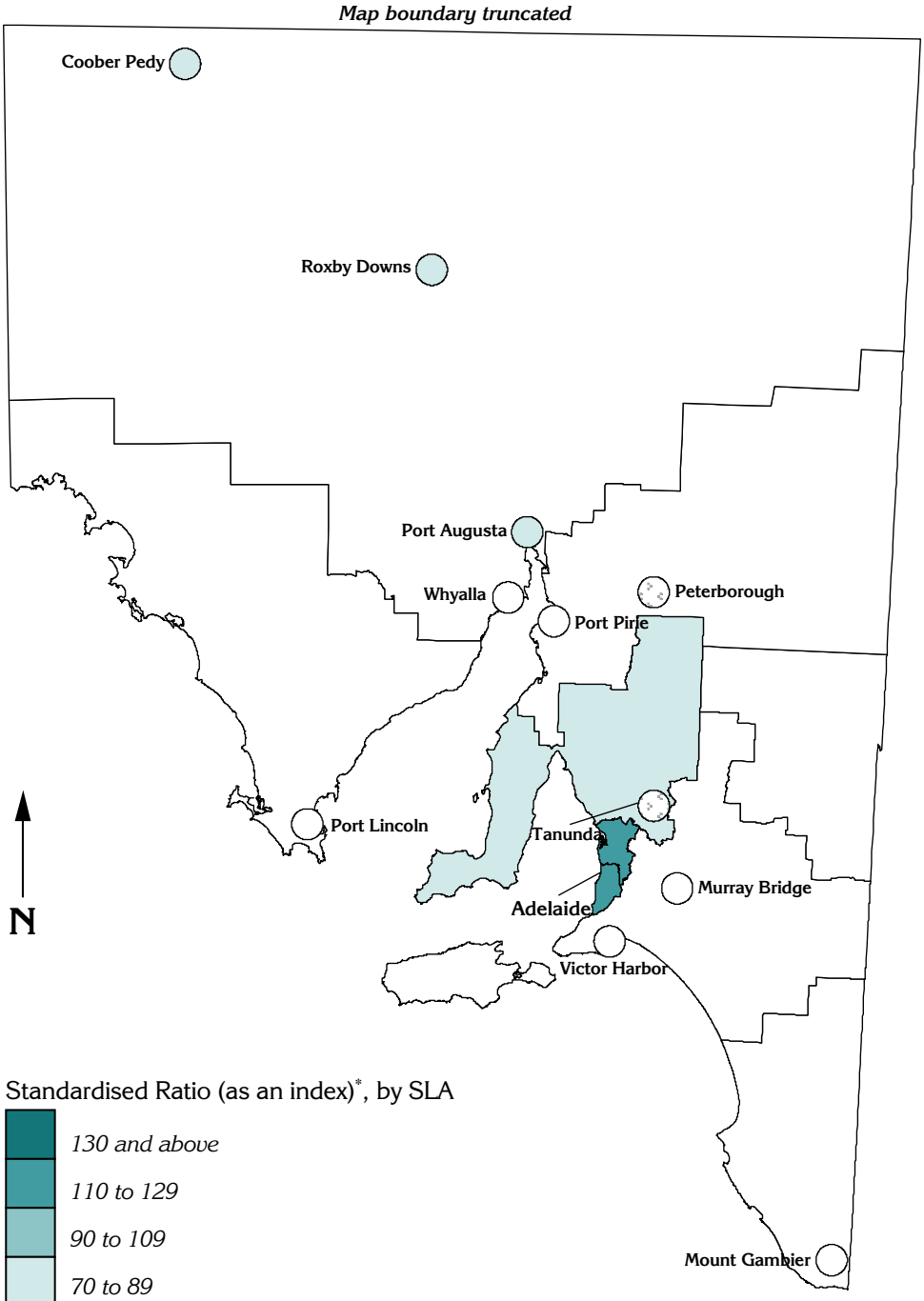
Similarly, **South East** had a very low standardised ratio, of 24**, representing 76% fewer people on a waiting list than expected from the State rates (33 people). Mount Gambier also had a very low ratio of 22** (eleven people) as did South East Balance (24**, 22).

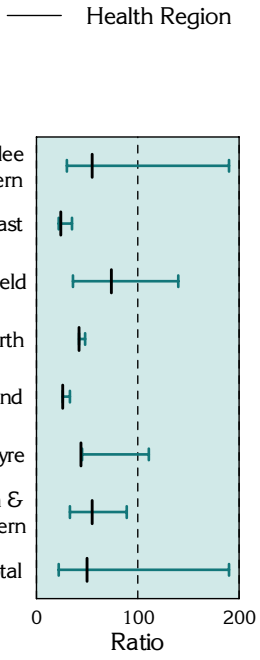
ASGC remoteness classification

There is a marked variation across the State, with the highest ratio of people on a booking list in the Major Cities areas (a ratio of 118**). The ratio then declines for the Inner Regional (57**) and Outer Regional (44**) areas, before increasing in the Remote (61**) and Very Remote (77**) areas.

* **indicates statistical significance: see page 24**

Map 7.49
Hospital booking lists: people waiting for more than six months for elective (non-urgent) surgical procedures, South Australia, 30 June 2004





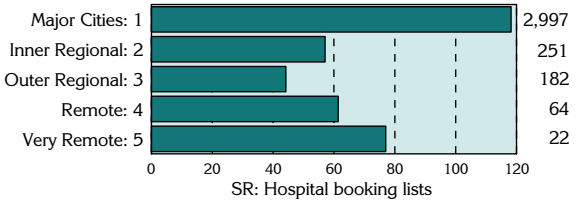
Note: The black vertical lines show the average ratio for this indicator in each region; the horizontal lines show the range of the indicator at the SLA level within the region.

Standardised Ratio (as an index)*, by SLA

- *130 and above*
- *110 to 129*
- *90 to 109*
- *70 to 89*
- *below 70*
- *data not mapped#*

*Index shows the number of people on booking lists for more than six months in the region or town compared with the number expected: expected numbers were derived by indirect age standardisation, based on SA totals

#Data were not mapped because the town had fewer than five people on a booking list



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

The hospitals with booking lists are: Flinders Medical Centre, Lyell McEwin Health Service, Modbury Hospital, Royal Adelaide Hospital, Women's and Children's Hospital, and The Queen Elizabeth Hospital. Reference to this table is made on page 430.

Table 7.59: Comparison of booking list and admission rates, selected SLAs, Metropolitan Adelaide, at 30 June 2004

SLA	Ratio of rate[1] (Booking List or Admissions) in SLA to Metropolitan Adelaide average for that category			
	Booking List	Admissions (not just admissions from a booking list)		
		All	to public acute hospitals	to private hospitals
Onkaparinga - Morphett	1.93	1.10	1.14	1.02
Playford - Elizabeth	1.67	1.24	1.56	0.62
Salisbury - South-East	1.63	1.10	1.16	1.00
Salisbury - Central	1.61	1.07	1.15	0.93
Onkaparinga - Hackham	1.60	0.99	1.16	0.67
Playford - West Central	1.58	1.29	1.65	0.56
Salisbury - Inner North	1.49	1.00	1.15	0.67
Port Adelaide Enfield - Port	1.44	1.11	1.38	0.60
Onkaparinga - South Coast	1.40	0.98	1.08	0.81
Onkaparinga - Woodcroft	1.34	0.87	0.84	0.92
Port Adelaide Enfield - Inner	1.29	1.13	1.21	0.99
Marion - Central	1.25	1.02	0.92	1.20
Playford - East Central	1.20	0.86	0.87	0.84
Charles Sturt - North-East	1.20	0.97	1.09	0.74
Port Adelaide Enfield - East	1.18	0.93	0.97	0.85
Marion - North	1.18	1.01	0.92	1.16
Onkaparinga - North Coast	1.13	1.16	1.36	0.79
Tea Tree Gully - Central	1.13	0.92	0.86	1.05
Port Adelaide Enfield - Coast	1.13	1.13	1.15	1.10
Salisbury Balance	1.13	0.98	0.95	1.05
West Torrens - East	1.08	0.75	0.72	0.81
Playford - Hills	1.07	0.84	0.77	0.96
Tea Tree Gully - North	1.06	0.97	0.84	1.25
Salisbury - North-East	1.02	1.00	0.94	1.11

[1] **'Ratio of rate' is the ratio of the age standardised rate per 100,000 of people on a booking list to the age standardised rate per 100,000 admissions**

8 Correlation analysis

Introduction

A correlation analysis has been undertaken to illustrate the extent of association at the SLA level between the indicators of socioeconomic status, health status and use of services.

Description

Correlation is the degree to which one variable is statistically associated with another. The correlation coefficient is a measure of the strength of this association. When high values for one variable are matched by high values for the other (or when low values are matched by low values), then they are positively correlated. Where the interdependence is inverse (i.e. high values for one are matched by low values for the other), the two variables are negatively correlated.

Methods

The Pearson product-moment correlation (r) has been used in this analysis to indicate the degree of correlation between pairs of variables. Pearson correlation coefficients range from +1 (complete positive correlation) through 0 (complete lack of correlation) to −1 (complete negative correlation). As a general rule, correlations of plus or minus 0.50 or above are considered to be of meaningful statistical significance (referred to in the text as 'strong'). Correlations of plus or minus 0.71 or above are of substantial statistical significance, because this higher value represents at least 50 per cent shared variation (r^2 greater than or equal to 0.5): these are referred to as being 'very strong' correlations.

Correlation coefficients were calculated by comparing the value (expressed as a percentage or as a standardised ratio) for each variable in each SLA with the value of each of the other variables. Correlation coefficients are generally referred to as being, for example, 'a correlation of low income families with the *paired* variable of hospital admissions of females'. However, to promote ease of reading where many correlation coefficients are quoted in the text, the word 'paired' has been omitted. For similar reasons the symbol used to indicate a correlation coefficient (r) has been omitted.

The results of the correlation analysis, which was undertaken separately for Adelaide and country South Australia, are shown in the following tables: coefficients from 0.5 to 0.7 and from 0.71 to 1 (both positive and negative) are highlighted in the tables, and are referred to in the individual map commentaries, where appropriate.

When discussing the results of the correlation analysis in the text, mention is often made of 'the indicators of socioeconomic disadvantage'. This reference is to variables such as those for single parent families, unemployed people, Indigenous people and housing authority rented dwellings. References to 'high socioeconomic status' reflect the variables for high income families, female labour force participation and managers and administrators and professionals.

The associations discussed in the text are, in general, limited to the strongest associations; this approach is largely a response to the limited space available for comment. The extent of any association with the other variables analysed can be ascertained from an examination of the correlation matrices: Tables 8.1 and 8.2 for correlations at the SLA level, and Tables A12 and A13 for correlations at the BoD area level (for Burden of Disease estimates and infant mortality).

Results

Metropolitan regions

There were notable correlations at the SLA level between the indicators of socioeconomic disadvantage and a number of the indicators of health status. The strongest of these were with low birthweight, perinatal risk factor scores, termination of pregnancy, smoking during pregnancy, premature deaths of males and females, and avoidable mortality (Table 8.1).

Similarly strong associations were also evident in the correlation analysis with a majority of the indicators of use of services.

A number of the indicators of socioeconomic disadvantage are also highly correlated, supporting the associations seen earlier in the atlas. For example, the very strong inverse correlation between areas with high rates of jobless families and those with high rates of female labour force participation is an example of the variation in population characteristics between SLAs across the metropolitan regions. Another is the very strong (positive) correlation between areas with high proportions of jobless families and people receiving the Disability Support Pension. Responses to the Census question on Internet use at home provide an example of how strong an indicator this can be, with a very strong (positive) correlation with high income families and a very strong inverse correlation with low income families.

Country South Australia

As noted in Chapter 2, SLAs in non–metropolitan areas range in size from 18.4 square kilometres in Unincorporated Yorke to 671,466 square kilometres in Unincorporated Far North in country South Australia. They also range from sparsely populated rural and remote areas to large country towns: from 17 people in Unincorporated Lincoln to 23,600 people in Mount Gambier. Despite these wide variations, the correlation analysis has been produced, and the results are presented in Table 8.2.

It is clear from the matrix of correlation coefficients that there are substantially fewer correlations of significance at the SLA level in country South Australia than was the case in the metropolitan regions. This is, in part, a result of the number of SLAs with relatively small numbers of cases (population, deaths, hospital admissions, etc.), which reduces the strength of the analysis.

As was the case for the metropolitan regions, a number of the indicators of socioeconomic disadvantage are highly correlated. For example, the very strong inverse correlation between areas with high rates of jobless families and those with high rates of female labour force participation shows the variation in population characteristics between SLAs across the State. Another is the (positive) correlation between areas with high proportions of single parent families and of dwellings without a motor vehicle; and between high proportions of jobless families and people receiving the Disability Support Pension. Responses to the Census question on Internet use at home provides an example of how strong an indicator this can be, with a very strong (positive) correlation with high income families and a very strong inverse correlation with low income families.

For the indicators of health status, of note is the very strong inverse correlation between incidence of lung cancer and high rates of educational participation at age 16. Avoidable mortality was very strongly correlated with high proportions of the Indigenous population at the SLA level.

The indicators of health service use were only weakly correlated with socioeconomic disadvantage.

Table 8.1: Correlation matrix for SLAs in the metropolitan regions

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37	V38	V39	V40	
V1	1.00	0.82	0.03	-0.68	0.87	0.62	0.42	-0.54	0.50	0.44	0.78	-0.73	-0.62	-0.53	-0.75	-0.63	-0.70	0.52	-0.11	-0.49	0.02	0.34	-0.03	-0.28	-0.46	-0.61	0.68	0.30	0.72	0.39	0.58	0.67	0.55	0.20	0.45	0.66	0.03	-0.13	0.35	0.04	**V1**
V2	0.82	1.00	-0.04	-0.79	0.81	0.29	0.08	-0.24	0.17	0.13	0.53	-0.49	-0.34	-0.24	-0.61	-0.42	-0.46	0.17	-0.30	-0.73	-0.23	0.03	-0.39	-0.66	-0.09	-0.27	0.42	-0.04	0.50	0.05	0.32	0.40	0.34	-0.10	0.12	0.45	0.11	-0.21	0.10	0.17	**V2**
V3	0.03	-0.04	1.00	-0.45	-0.14	0.06	-0.21	0.20	0.03	0.11	-0.01	0.12	-0.11	-0.32	0.02	0.16	-0.09	0.06	-0.16	0.41	-0.10	-0.06	0.28	0.03	0.18	0.03	-0.08	-0.13	-0.05	0.01	-0.08	0.07	0.04	0.06	0.05	-0.03	-0.40	0.04	-0.31	-0.55	**V3**
V4	-0.68	-0.79	-0.45	1.00	-0.53	-0.11	0.17	0.00	-0.01	0.00	-0.34	0.33	0.18	0.25	0.45	0.19	0.38	-0.07	0.32	0.40	0.23	0.16	0.26	0.66	-0.10	0.09	-0.39	0.21	-0.27	0.09	-0.15	-0.26	-0.17	0.10	-0.09	-0.32	0.00	0.16	0.05	0.12	**V4**
V5	0.87	0.81	-0.14	-0.53	1.00	0.62	0.49	-0.59	0.56	0.53	0.77	-0.68	-0.67	-0.52	-0.75	-0.64	-0.70	0.59	-0.16	-0.55	-0.03	0.43	-0.10	-0.23	-0.44	-0.62	0.57	0.38	0.79	0.48	0.65	0.63	0.53	0.25	0.45	0.69	-0.11	-0.10	0.34	0.07	**V5**
V6	0.62	0.29	0.06	-0.11	0.62	1.00	0.86	-0.85	0.94	0.86	0.86	-0.71	-0.91	-0.78	-0.71	-0.69	-0.74	0.89	0.08	-0.10	0.22	0.84	0.40	0.42	-0.79	-0.92	0.55	0.79	0.86	0.84	0.82	0.69	0.78	0.62	0.75	0.73	-0.37	-0.06	0.44	-0.17	**V6**
V7	0.42	0.08	-0.21	0.17	0.49	0.86	1.00	-0.96	0.95	0.84	0.82	-0.73	-0.88	-0.74	-0.67	-0.75	-0.73	0.84	0.35	0.03	0.46	0.86	0.48	0.56	-0.95	-0.94	0.52	0.92	0.82	0.89	0.89	0.66	0.64	0.71	0.77	0.75	-0.26	0.09	0.67	-0.13	**V7**
V8	-0.54	-0.24	0.20	0.00	-0.59	-0.85	-0.96	1.00	-0.92	-0.79	-0.90	0.86	0.89	0.77	0.79	0.82	0.80	-0.81	-0.27	0.12	-0.39	-0.78	-0.40	-0.37	0.95	0.95	-0.63	-0.86	-0.86	-0.84	-0.93	-0.67	-0.69	-0.64	-0.76	-0.83	0.20	-0.05	-0.68	0.08	**V8**
V9	0.50	0.17	0.03	-0.01	0.56	0.94	0.95	-0.92	1.00	0.92	0.87	-0.72	-0.96	-0.85	-0.71	-0.73	-0.79	0.91	0.24	0.05	0.39	0.89	0.50	0.53	-0.89	-0.97	0.50	0.89	0.87	0.93	0.90	0.72	0.72	0.76	0.83	0.79	-0.41	0.02	0.57	-0.28	**V9**
V10	0.44	0.13	0.11	0.00	0.53	0.86	0.84	-0.79	0.92	1.00	0.78	-0.58	-0.91	-0.86	-0.66	-0.66	-0.78	0.87	0.13	0.11	0.30	0.85	0.64	0.59	-0.78	-0.88	0.44	0.89	0.85	0.96	0.84	0.72	0.66	0.81	0.83	0.77	-0.56	0.09	0.51	-0.40	**V10**
V11	0.78	0.53	-0.01	-0.34	0.77	0.86	0.82	-0.90	0.87	0.78	1.00	-0.89	-0.94	-0.83	-0.89	-0.81	-0.89	0.82	0.13	-0.25	0.29	0.70	0.30	0.15	-0.85	-0.94	0.68	0.73	0.93	0.78	0.90	0.76	0.75	0.61	0.76	0.90	-0.20	0.03	0.56	-0.15	**V11**
V12	-0.73	-0.49	0.12	0.33	-0.68	-0.71	-0.73	0.86	-0.72	-0.58	-0.89	1.00	0.76	0.69	0.90	0.83	0.82	-0.66	-0.09	0.33	-0.20	-0.56	-0.15	-0.01	0.79	0.81	-0.76	-0.65	-0.83	-0.65	-0.84	-0.64	-0.65	-0.46	-0.67	-0.86	-0.05	-0.06	-0.61	-0.03	**V12**
V13	-0.62	-0.34	-0.11	0.18	-0.67	-0.91	-0.88	0.89	-0.96	-0.91	-0.94	0.76	1.00	0.91	0.80	0.76	0.85	-0.89	-0.16	0.05	-0.32	-0.82	-0.46	-0.37	0.86	0.96	-0.52	-0.83	-0.91	-0.89	-0.90	-0.76	-0.73	-0.71	-0.80	-0.86	0.42	-0.06	-0.54	0.32	**V13**
V14	-0.53	-0.24	-0.32	0.25	-0.52	-0.78	-0.74	0.77	-0.85	-0.86	-0.83	0.69	0.91	1.00	0.76	0.71	0.81	-0.83	-0.03	-0.06	-0.19	-0.72	-0.55	-0.38	0.76	0.84	-0.49	-0.76	-0.82	-0.83	-0.81	-0.63	-0.63	-0.67	-0.77	-0.83	0.48	-0.25	-0.46	0.51	**V14**
V15	-0.75	-0.61	0.02	0.45	-0.75	-0.71	-0.67	0.79	-0.71	-0.66	-0.89	0.90	0.80	0.76	1.00	0.83	0.86	-0.66	0.16	0.41	0.00	-0.54	-0.18	0.06	0.70	0.77	-0.67	-0.63	-0.90	-0.68	-0.85	-0.67	-0.66	-0.48	-0.67	-0.90	0.17	-0.08	-0.54	0.02	**V15**
V16	-0.63	-0.42	0.16	0.19	-0.64	-0.69	-0.75	0.82	-0.73	-0.66	-0.81	0.83	0.76	0.71	0.83	1.00	0.80	-0.69	-0.04	0.27	-0.16	-0.67	-0.26	-0.15	0.76	0.79	-0.64	-0.73	-0.83	-0.70	-0.85	-0.64	-0.69	-0.49	-0.69	-0.83	0.15	-0.13	-0.62	0.11	**V16**
V17	-0.70	-0.46	-0.09	0.38	-0.70	-0.74	-0.73	0.80	-0.79	-0.78	-0.89	0.82	0.85	0.81	0.86	0.80	1.00	-0.75	-0.11	0.08	-0.29	-0.61	-0.44	-0.15	0.77	0.84	-0.64	-0.73	-0.88	-0.79	-0.88	-0.73	-0.67	-0.67	-0.78	-0.88	0.27	-0.11	-0.56	0.28	**V17**
V18	0.52	0.17	0.06	-0.07	0.59	0.89	0.84	-0.81	0.91	0.87	0.82	-0.66	-0.89	-0.83	-0.66	-0.69	-0.75	1.00	0.14	0.04	0.28	0.87	0.47	0.52	-0.79	-0.89	0.57	0.85	0.84	0.88	0.84	0.63	0.63	0.69	0.78	0.78	-0.44	0.16	0.49	-0.35	**V18**
V19	-0.11	-0.30	-0.16	0.32	-0.16	0.08	0.35	-0.27	0.24	0.13	0.13	-0.09	-0.16	-0.03	0.16	-0.04	-0.11	0.14	1.00	0.53	0.94	0.24	0.27	0.42	-0.40	-0.30	0.06	0.29	-0.01	0.22	0.21	0.18	-0.08	0.39	0.28	0.00	0.23	0.00	0.39	-0.21	**V19**
V20	-0.49	-0.73	0.41	0.40	-0.55	-0.10	0.03	0.12	0.05	0.11	-0.25	0.33	0.05	-0.06	0.41	0.27	0.08	0.04	0.53	1.00	0.54	0.09	0.58	0.65	-0.05	0.02	-0.27	0.14	-0.31	0.15	-0.12	-0.08	-0.22	0.33	0.12	-0.26	-0.19	0.22	0.02	-0.53	**V20**
V21	0.02	-0.23	-0.10	0.23	-0.03	0.22	0.46	-0.39	0.39	0.30	0.29	-0.20	-0.32	-0.19	0.00	-0.16	-0.29	0.28	0.94	0.54	1.00	0.36	0.40	0.48	-0.53	-0.46	0.14	0.41	0.13	0.37	0.35	0.31	0.07	0.56	0.45	0.15	0.12	0.06	0.45	-0.30	**V21**
V22	0.34	0.03	-0.06	0.16	0.43	0.84	0.86	-0.78	0.89	0.85	0.70	-0.56	-0.82	-0.72	-0.54	-0.67	-0.61	0.87	0.24	0.09	0.36	1.00	0.41	0.66	-0.77	-0.86	0.44	0.89	0.75	0.88	0.77	0.60	0.62	0.69	0.74	0.63	-0.38	0.10	0.47	-0.29	**V22**
V23	-0.03	-0.39	0.28	0.26	-0.10	0.40	0.48	-0.40	0.50	0.64	0.30	-0.15	-0.46	-0.55	-0.18	-0.26	-0.44	0.47	0.27	0.58	0.40	0.41	1.00	0.71	-0.53	-0.46	0.18	0.60	0.32	0.64	0.41	0.30	0.28	0.71	0.61	0.36	-0.43	0.21	0.36	-0.51	**V23**
V24	-0.28	-0.66	0.03	0.66	-0.23	0.42	0.56	-0.37	0.53	0.59	0.15	-0.01	-0.37	-0.38	0.06	-0.15	-0.15	0.52	0.42	0.65	0.48	0.66	0.71	1.00	-0.50	-0.44	0.00	0.66	0.20	0.64	0.32	0.19	0.20	0.62	0.48	0.13	-0.38	0.21	0.26	-0.38	**V24**
V25	-0.46	-0.09	0.18	-0.10	-0.44	-0.79	-0.95	0.95	-0.89	-0.78	-0.85	0.79	0.86	0.76	0.70	0.76	0.77	-0.79	-0.40	-0.05	-0.53	-0.77	-0.53	-0.50	1.00	0.93	-0.56	-0.87	-0.78	-0.84	-0.88	-0.64	-0.63	-0.74	-0.80	-0.80	0.17	-0.11	-0.72	0.17	**V25**
V26	-0.61	-0.27	0.03	0.09	-0.62	-0.92	-0.94	0.95	-0.97	-0.88	-0.94	0.81	0.96	0.84	0.77	0.79	0.84	-0.89	-0.30	0.02	-0.46	-0.86	-0.46	-0.44	0.93	1.00	-0.60	-0.87	-0.89	-0.90	-0.92	-0.75	-0.73	-0.75	-0.84	-0.84	0.28	-0.07	-0.62	0.24	**V26**
V27	0.68	0.42	-0.08	-0.39	0.57	0.55	0.52	-0.63	0.50	0.44	0.68	-0.76	-0.52	-0.49	-0.67	-0.64	-0.64	0.57	0.06	-0.27	0.14	0.44	0.18	0.00	-0.56	-0.60	1.00	0.52	0.64	0.49	0.63	0.42	0.39	0.34	0.56	0.65	0.00	0.06	0.45	-0.02	**V27**
V28	0.30	-0.04	-0.13	0.21	0.38	0.79	0.92	-0.86	0.89	0.89	0.73	-0.65	-0.83	-0.76	-0.63	-0.73	-0.73	0.85	0.29	0.14	0.41	0.89	0.60	0.66	-0.87	-0.87	0.52	1.00	0.80	0.95	0.88	0.64	0.62	0.79	0.83	0.76	-0.39	0.19	0.62	-0.31	**V28**
V29	0.72	0.50	-0.05	-0.27	0.79	0.86	0.82	-0.86	0.87	0.85	0.93	-0.83	-0.91	-0.82	-0.90	-0.83	-0.88	0.84	-0.01	-0.31	0.13	0.75	0.32	0.20	-0.78	-0.89	0.64	0.80	1.00	0.85	0.94	0.76	0.74	0.62	0.77	0.91	-0.33	0.03	0.51	-0.13	**V29**
V30	0.39	0.05	0.01	0.09	0.48	0.84	0.89	-0.84	0.93	0.96	0.78	-0.65	-0.89	-0.83	-0.68	-0.70	-0.79	0.88	0.22	0.15	0.37	0.88	0.64	0.64	-0.84	-0.90	0.49	0.95	0.85	1.00	0.89	0.69	0.65	0.84	0.86	0.79	-0.47	0.14	0.57	-0.35	**V30**
V31	0.58	0.32	-0.08	-0.15	0.65	0.82	0.89	-0.93	0.90	0.84	0.90	-0.84	-0.90	-0.81	-0.85	-0.85	-0.88	0.84	0.21	-0.12	0.35	0.77	0.41	0.32	-0.88	-0.92	0.63	0.88	0.94	0.89	1.00	0.72	0.68	0.72	0.83	0.90	-0.31	0.06	0.64	-0.22	**V31**
V32	0.67	0.40	0.07	-0.26	0.63	0.69	0.66	-0.67	0.72	0.72	0.76	-0.64	-0.76	-0.63	-0.67	-0.64	-0.73	0.63	0.18	-0.08	0.31	0.60	0.30	0.19	-0.64	-0.75	0.42	0.64	0.76	0.69	0.72	1.00	0.65	0.54	0.66	0.71	-0.23	-0.01	0.51	-0.14	**V32**
V33	0.55	0.34	0.04	-0.17	0.53	0.78	0.64	-0.69	0.72	0.66	0.75	-0.65	-0.73	-0.63	-0.66	-0.69	-0.67	0.63	-0.08	-0.22	0.07	0.62	0.28	0.20	-0.63	-0.73	0.39	0.62	0.74	0.65	0.68	0.65	1.00	0.51	0.61	0.70	-0.33	-0.09	0.32	-0.12	**V33**
V34	0.20	-0.10	0.06	0.10	0.25	0.62	0.71	-0.64	0.76	0.81	0.61	-0.46	-0.71	-0.67	-0.48	-0.49	-0.67	0.69	0.39	0.33	0.56	0.69	0.71	0.62	-0.74	-0.75	0.34	0.79	0.62	0.84	0.72	0.54	0.51	1.00	0.90	0.65	-0.39	0.11	0.53	-0.48	**V34**
V35	0.45	0.12	0.05	-0.09	0.45	0.75	0.77	-0.76	0.83	0.83	0.76	-0.67	-0.80	-0.77	-0.67	-0.69	-0.78	0.78	0.28	0.12	0.45	0.74	0.61	0.48	-0.80	-0.84	0.56	0.83	0.77	0.86	0.83	0.66	0.61	0.90	1.00	0.77	-0.33	0.09	0.57	-0.39	**V35**
V36	0.66	0.45	-0.03	-0.32	0.69	0.73	0.75	-0.83	0.79	0.77	0.90	-0.86	-0.86	-0.83	-0.90	-0.83	-0.88	0.78	0.00	-0.26	0.15	0.63	0.36	0.13	-0.80	-0.84	0.65	0.76	0.91	0.79	0.90	0.71	0.70	0.65	0.77	1.00	-0.29	0.13	0.58	-0.22	**V36**
V37	0.03	0.11	-0.40	0.00	-0.11	-0.37	-0.26	0.20	-0.41	-0.56	-0.20	-0.05	0.42	0.48	0.17	0.15	0.27	-0.44	0.23	-0.19	0.12	-0.38	-0.43	-0.38	0.17	0.28	0.00	-0.39	-0.33	-0.47	-0.31	-0.23	-0.33	-0.39	-0.33	-0.29	1.00	-0.14	0.00	0.49	**V37**
V38	-0.13	-0.21	0.04	0.16	-0.10	-0.06	0.09	-0.05	0.02	0.09	0.03	-0.06	-0.06	-0.25	-0.08	-0.13	-0.11	0.16	0.00	0.22	0.06	0.10	0.21	0.21	-0.11	-0.07	0.06	0.19	0.03	0.14	0.06	-0.01	-0.09	0.11	0.09	0.13	-0.14	1.00	0.18	-0.23	**V38**
V39	0.35	0.10	-0.31	0.05	0.34	0.44	0.67	-0.68	0.57	0.51	0.56	-0.61	-0.54	-0.46	-0.54	-0.62	-0.56	0.49	0.39	0.02	0.45	0.47	0.36	0.26	-0.72	-0.62	0.45	0.62	0.51	0.57	0.64	0.51	0.32	0.53	0.57	0.58	0.00	0.18	1.00	-0.04	**V39**
V40	0.04	0.17	-0.55	0.12	0.07	-0.17	-0.13	0.08	-0.28	-0.40	-0.15	-0.03	0.32	0.51	0.02	0.11	0.28	-0.35	-0.21	-0.53	-0.30	-0.29	-0.51	-0.38	0.17	0.24	-0.02	-0.31	-0.13	-0.35	-0.22	-0.14	-0.12	-0.48	-0.39	-0.22	0.49	-0.23	-0.04	1.00	**V40**
	V1	**V2**	**V3**	**V4**	**V5**	**V6**	**V7**	**V8**	**V9**	**V10**	**V11**	**V12**	**V13**	**V14**	**V15**	**V16**	**V17**	**V18**	**V19**	**V20**	**V21**	**V22**	**V23**	**V24**	**V25**	**V26**	**V27**	**V28**	**V29**	**V30**	**V31**	**V32**	**V33**	**V34**	**V35**	**V36**	**V37**	**V38**	**V39**	**V40**	

Figures highlighted thus ▭ indicate correlations of strong significance between the appropriate variables in the matrix; those highlighted thus ■ indicate correlations of very strong significance

Age distribution	Children aged 0 to 4 years	V1
	Children aged 5 to 14 years	V2
	Young people aged 15 to 24 years	V3
	People aged 65 years and over	V4
Total Fertility Rate	Total Fertility Rate	V5
Families	Single parent families	V6
	Low income families	V7
	High income families	V8
	Jobless families	V9
Labour force	Unemployment	V10
	Unskilled and semi-skilled workers	V11
	Managers and administrators; professionals	V12
	Female labour force participation	V13
Education	Full-time participation in education at age 16	V14
	Average publicly examined achievement scores	V15
	Average publicly assessed achievement scores	V16
	Average school assessed achievement scores	V17
Aboriginal and Torres Strait Islander people	Aboriginal and Torres Strait Islander people	V18
NESB	Resident for five years or more	V19
	Resident for less than five years	V20
	Poor proficency in English	V21

Housing	Dwellings rented from the SA Housing Trust	V22
	Rent assistance	V23
Transport	Dwellings with no motor vehicle	V24
People who used the Internet at home	People who used the Internet at home	V25
ABS SEIFA	Index of Relative Socio-Economic Disadvantage	V26
Income support payments	Age pensioners	V27
	Disability support pensioners	V28
	Female sole parent pensioners	V29
	People receiving an unemployment benefit	V30
	Children in welfare-dependent/ low income families	V31
Perinatal	Low birthweight babies	V32
	High risk of poor pregnancy outcome	V33
	Terminations of pregnancy	V34
	Terminations of pregnancy, 15 to 19 year olds	V35
	Smoking during pregnancy	V36
Immunisation	Immunisation status at 12 months of age	V37
Overweight and obesity in childhood	Overweight (not obese) four year old boys	V38
	Obese four year old boys	V39
Dental health	Decayed, missing or filled teeth, 12 year olds	V40

Table 8.1: Correlation matrix for SLAs in the metropolitan regions ...cont

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37	V38	V39	V40	
V41	-0.05	-0.17	0.15	0.01	-0.08	0.14	0.00	0.01	0.04	0.04	-0.04	0.01	0.02	-0.05	0.03	0.01	0.06	0.20	-0.27	0.08	-0.28	0.14	0.05	0.17	0.05	0.00	0.33	0.08	-0.04	0.08	-0.06	-0.22	0.11	-0.02	0.01	-0.03	-0.32	0.04	-0.07	-0.11	**V41**
V42	0.54	0.24	0.33	-0.38	0.40	0.65	0.46	-0.52	0.59	0.59	0.64	-0.62	-0.62	-0.66	-0.61	-0.54	-0.67	0.67	-0.09	0.02	0.05	0.52	0.43	0.21	-0.52	-0.61	0.68	0.56	0.62	0.61	0.57	0.47	0.64	0.53	0.65	0.67	-0.33	0.08	0.29	-0.36	**V42**
V43	-0.37	-0.35	-0.02	0.32	-0.35	-0.19	-0.30	0.36	-0.30	-0.33	-0.42	0.36	0.39	0.37	0.39	0.33	0.47	-0.17	-0.34	0.04	-0.42	-0.10	-0.25	0.08	0.37	0.38	-0.21	-0.22	-0.37	-0.28	-0.41	-0.47	-0.12	-0.37	-0.43	-0.42	-0.05	-0.04	-0.33	0.16	**V43**
V44	-0.02	0.08	0.12	-0.26	-0.02	-0.23	-0.32	0.26	-0.30	-0.30	-0.20	0.12	0.25	0.16	0.11	0.17	0.19	-0.15	-0.29	-0.11	-0.35	-0.31	-0.24	-0.34	0.34	0.29	0.16	-0.31	-0.22	-0.30	-0.27	-0.30	-0.09	-0.29	-0.26	-0.14	-0.07	0.18	-0.23	0.03	**V44**
V45	0.26	-0.08	0.07	0.18	0.31	0.73	0.77	-0.68	0.80	0.79	0.63	-0.43	-0.75	-0.68	-0.40	-0.52	-0.61	0.73	0.34	0.31	0.50	0.75	0.66	0.69	-0.75	-0.79	0.25	0.75	0.60	0.78	0.64	0.61	0.54	0.77	0.72	0.58	-0.34	0.17	0.48	-0.41	**V45**
V46	0.25	-0.07	-0.11	0.21	0.33	0.69	0.74	-0.66	0.73	0.72	0.57	-0.45	-0.68	-0.60	-0.47	-0.50	-0.53	0.72	0.11	0.04	0.22	0.69	0.53	0.57	-0.70	-0.69	0.31	0.75	0.64	0.71	0.66	0.50	0.44	0.61	0.62	0.59	-0.33	0.11	0.43	-0.19	**V46**
V47	0.27	-0.13	0.12	0.16	0.26	0.80	0.80	-0.72	0.84	0.81	0.65	-0.47	-0.78	-0.73	-0.43	-0.50	-0.60	0.81	0.31	0.30	0.46	0.78	0.66	0.71	-0.78	-0.81	0.34	0.79	0.61	0.80	0.67	0.57	0.56	0.75	0.76	0.57	-0.45	0.13	0.45	-0.42	**V47**
V48	0.33	0.18	-0.14	-0.09	0.39	0.54	0.60	-0.61	0.61	0.57	0.59	-0.56	-0.60	-0.53	-0.54	-0.56	-0.60	0.58	0.31	0.02	0.47	0.58	0.30	0.27	-0.61	-0.66	0.44	0.66	0.58	0.65	0.69	0.45	0.43	0.62	0.59	0.60	-0.09	0.09	0.54	-0.27	**V48**
V49	0.14	-0.21	0.07	0.31	0.19	0.76	0.75	-0.65	0.80	0.83	0.52	-0.38	-0.69	-0.67	-0.39	-0.51	-0.49	0.74	0.12	0.24	0.23	0.83	0.61	0.77	-0.66	-0.71	0.24	0.83	0.61	0.84	0.64	0.51	0.64	0.72	0.72	0.51	-0.53	0.09	0.31	-0.38	**V49**
V50	0.32	0.14	-0.30	0.05	0.44	0.64	0.75	-0.78	0.69	0.61	0.64	-0.73	-0.63	-0.54	-0.70	-0.71	-0.64	0.62	0.01	-0.18	0.12	0.63	0.25	0.27	-0.68	-0.68	0.54	0.77	0.70	0.70	0.77	0.47	0.64	0.56	0.65	0.73	-0.18	0.12	0.55	-0.04	**V50**
V51	0.35	0.03	0.32	-0.04	0.42	0.83	0.77	-0.71	0.89	0.92	0.70	-0.51	-0.88	-0.89	-0.57	-0.60	-0.70	0.88	0.08	0.23	0.22	0.86	0.59	0.61	-0.69	-0.82	0.37	0.83	0.75	0.88	0.75	0.61	0.63	0.72	0.75	0.69	-0.64	0.13	0.37	-0.54	**V51**
V52	0.54	0.17	0.00	-0.04	0.51	0.77	0.83	-0.78	0.84	0.81	0.78	-0.65	-0.84	-0.76	-0.61	-0.67	-0.68	0.84	0.35	0.02	0.43	0.80	0.48	0.49	-0.82	-0.86	0.57	0.81	0.80	0.81	0.80	0.73	0.51	0.66	0.76	0.74	-0.28	0.14	0.56	-0.25	**V52**
V53	0.35	0.08	-0.39	0.24	0.30	0.58	0.63	-0.61	0.53	0.46	0.53	-0.53	-0.47	-0.28	-0.43	-0.51	-0.37	0.48	0.21	-0.15	0.29	0.52	0.29	0.37	-0.63	-0.60	0.48	0.57	0.51	0.54	0.48	0.45	0.49	0.41	0.46	0.44	0.13	0.07	0.46	0.27	**V53**
V54	-0.16	-0.26	-0.21	0.38	-0.07	0.26	0.26	-0.18	0.22	0.32	0.03	-0.02	-0.11	-0.07	-0.04	-0.13	-0.05	0.26	-0.07	0.11	-0.04	0.36	0.34	0.46	-0.14	-0.17	0.20	0.41	0.15	0.36	0.14	-0.02	0.23	0.33	0.31	0.07	-0.25	0.05	0.10	-0.06	**V54**
V55	0.01	0.08	-0.09	-0.03	-0.05	-0.10	-0.20	0.14	-0.26	-0.32	-0.19	0.03	0.27	0.24	0.13	0.13	0.24	-0.23	-0.26	-0.14	-0.31	-0.24	-0.33	-0.26	0.25	0.23	0.08	-0.26	-0.25	-0.30	-0.29	-0.26	-0.14	-0.52	-0.38	-0.26	0.16	0.03	-0.21	0.23	**V55**
V56	-0.11	-0.15	-0.06	0.16	-0.12	0.06	0.00	0.06	0.00	0.05	-0.06	0.15	0.03	0.08	0.10	0.17	0.10	0.07	-0.18	0.01	-0.11	0.05	0.10	0.16	0.00	0.03	-0.11	0.05	-0.07	0.04	-0.08	-0.04	-0.01	0.04	-0.09	-0.08	-0.12	-0.03	0.02	0.01	**V56**
V57	-0.68	-0.44	0.30	0.17	-0.65	-0.69	-0.76	0.81	-0.71	-0.66	-0.82	0.82	0.72	0.62	0.82	0.81	0.77	-0.67	-0.14	0.34	-0.26	-0.60	-0.30	-0.14	0.78	0.79	-0.70	-0.73	-0.85	-0.71	-0.83	-0.70	-0.61	-0.55	-0.71	-0.84	0.04	-0.05	-0.64	-0.07	**V57**
V58	0.27	0.02	-0.03	0.13	0.33	0.55	0.58	-0.52	0.58	0.65	0.46	-0.37	-0.56	-0.51	-0.45	-0.49	-0.49	0.50	-0.10	0.00	0.00	0.51	0.47	0.37	-0.48	-0.52	0.22	0.59	0.55	0.61	0.51	0.48	0.54	0.46	0.47	0.49	-0.41	0.18	0.43	-0.07	**V58**
V59	-0.33	-0.46	-0.01	0.39	-0.32	0.10	0.11	-0.07	0.06	0.06	-0.13	0.01	0.05	0.05	0.08	0.09	0.10	0.04	-0.19	0.15	-0.20	0.08	0.25	0.33	-0.07	0.03	-0.03	0.17	-0.05	0.13	-0.02	-0.20	0.12	0.07	-0.01	-0.02	-0.11	-0.03	-0.05	0.13	**V59**
V60	0.28	0.44	-0.07	-0.32	0.23	0.07	0.06	-0.14	0.03	-0.04	0.16	-0.30	-0.08	-0.05	-0.32	-0.32	-0.15	0.02	-0.15	-0.38	-0.19	0.10	-0.34	-0.34	-0.04	-0.09	0.18	0.04	0.20	0.00	0.19	0.17	0.13	-0.23	-0.09	0.18	0.09	-0.10	0.15	0.25	**V60**
V61	0.49	0.16	0.17	-0.17	0.41	0.68	0.72	-0.74	0.75	0.78	0.77	-0.68	-0.79	-0.82	-0.66	-0.70	-0.81	0.76	0.36	0.20	0.48	0.67	0.61	0.41	-0.78	-0.81	0.64	0.78	0.73	0.80	0.80	0.61	0.50	0.72	0.79	0.75	-0.29	0.22	0.58	-0.50	**V61**
V62	0.54	0.26	0.32	-0.34	0.44	0.63	0.60	-0.65	0.69	0.72	0.76	-0.65	-0.77	-0.85	-0.67	-0.67	-0.82	0.72	0.19	0.14	0.33	0.57	0.55	0.28	-0.67	-0.75	0.63	0.66	0.70	0.72	0.72	0.57	0.55	0.65	0.72	0.76	-0.36	0.27	0.46	-0.59	**V62**
V63	0.50	0.31	0.26	-0.30	0.50	0.74	0.67	-0.72	0.77	0.79	0.76	-0.70	-0.82	-0.84	-0.80	-0.67	-0.79	0.68	-0.09	-0.07	0.05	0.63	0.47	0.24	-0.66	-0.75	0.51	0.74	0.81	0.79	0.80	0.61	0.67	0.63	0.70	0.80	-0.44	0.01	0.39	-0.36	**V63**
V64	0.55	0.30	0.38	-0.32	0.53	0.75	0.66	-0.70	0.79	0.86	0.79	-0.65	-0.86	-0.92	-0.77	-0.69	-0.83	0.75	-0.07	0.00	0.08	0.66	0.56	0.31	-0.66	-0.77	0.52	0.74	0.84	0.82	0.80	0.68	0.67	0.65	0.74	0.81	-0.55	0.09	0.36	-0.47	**V64**
V65	0.45	0.29	0.17	-0.27	0.46	0.68	0.64	-0.70	0.70	0.70	0.70	-0.69	-0.74	-0.75	-0.77	-0.62	-0.73	0.61	-0.09	-0.11	0.03	0.57	0.38	0.19	-0.62	-0.69	0.48	0.69	0.74	0.72	0.75	0.53	0.63	0.57	0.63	0.74	-0.35	-0.04	0.39	-0.28	**V65**
V66	0.47	0.14	-0.07	0.01	0.48	0.75	0.80	-0.79	0.80	0.80	0.77	-0.68	-0.77	-0.69	-0.65	-0.74	-0.77	0.78	0.30	0.12	0.47	0.77	0.54	0.50	-0.79	-0.85	0.61	0.85	0.77	0.86	0.81	0.69	0.64	0.74	0.82	0.71	-0.23	0.22	0.56	-0.29	**V66**
V67	0.46	0.13	-0.07	0.02	0.48	0.74	0.80	-0.78	0.79	0.79	0.77	-0.67	-0.76	-0.69	-0.64	-0.73	-0.76	0.79	0.32	0.13	0.48	0.77	0.53	0.51	-0.79	-0.85	0.61	0.85	0.76	0.86	0.81	0.69	0.63	0.74	0.82	0.71	-0.22	0.24	0.57	-0.30	**V67**
V68	-0.63	-0.54	0.21	0.39	-0.66	-0.51	-0.58	0.71	-0.56	-0.43	-0.74	0.85	0.61	0.53	0.79	0.71	0.71	-0.48	-0.03	0.38	-0.17	-0.36	-0.02	0.17	0.63	0.64	-0.56	-0.48	-0.69	-0.48	-0.74	-0.56	-0.51	-0.35	-0.50	-0.77	-0.09	-0.02	-0.60	-0.04	**V68**
V69	0.02	-0.28	0.08	0.32	0.01	0.43	0.44	-0.32	0.45	0.55	0.28	-0.09	-0.38	-0.36	-0.10	-0.27	-0.30	0.51	0.33	0.44	0.41	0.58	0.58	0.71	-0.40	-0.45	0.25	0.58	0.31	0.59	0.32	0.33	0.30	0.56	0.52	0.19	-0.32	0.25	0.17	-0.37	**V69**
V70	-0.58	-0.27	-0.20	0.26	-0.54	-0.75	-0.76	0.78	-0.83	-0.86	-0.84	0.72	0.87	0.87	0.76	0.75	0.91	-0.76	-0.18	-0.11	-0.39	-0.66	-0.65	-0.35	0.80	0.86	-0.54	-0.79	-0.82	-0.84	-0.86	-0.74	-0.67	-0.79	-0.83	-0.85	0.36	-0.15	-0.58	0.44	**V70**
V71	0.25	0.26	0.02	-0.18	0.34	0.17	0.23	-0.26	0.29	0.29	0.34	-0.25	-0.34	-0.30	-0.33	-0.35	-0.39	0.16	0.01	-0.08	0.11	0.16	0.18	-0.06	-0.25	-0.29	0.10	0.19	0.33	0.26	0.32	0.35	0.24	0.39	0.37	0.36	-0.05	-0.02	0.25	-0.22	**V71**
V72	0.62	0.32	0.10	-0.23	0.58	0.83	0.80	-0.84	0.87	0.78	0.88	-0.78	-0.89	-0.83	-0.76	-0.72	-0.81	0.75	0.18	-0.04	0.36	0.69	0.41	0.29	-0.82	-0.89	0.50	0.72	0.79	0.76	0.81	0.74	0.71	0.68	0.78	0.79	-0.25	0.04	0.56	-0.31	**V72**
V73	-0.43	-0.11	-0.10	0.09	-0.32	-0.73	-0.64	0.66	-0.67	-0.56	-0.62	0.59	0.64	0.61	0.51	0.44	0.50	-0.66	-0.18	-0.03	-0.28	-0.59	-0.26	-0.35	0.65	0.69	-0.44	-0.59	-0.54	-0.58	-0.57	-0.47	-0.53	-0.37	-0.49	-0.51	0.23	-0.06	-0.36	0.14	**V73**
V74	0.11	0.11	0.02	-0.04	0.21	0.14	0.23	-0.24	0.28	0.27	0.27	-0.18	-0.30	-0.29	-0.24	-0.30	-0.31	0.15	0.04	0.02	0.15	0.19	0.23	0.06	-0.24	-0.27	0.06	0.21	0.25	0.25	0.28	0.24	0.17	0.39	0.35	0.28	-0.08	0.07	0.23	-0.27	**V74**
V75	0.31	0.32	0.03	-0.23	0.40	0.18	0.22	-0.26	0.30	0.30	0.37	-0.28	-0.35	-0.31	-0.36	-0.36	-0.43	0.16	0.00	-0.11	0.10	0.15	0.17	-0.10	-0.25	-0.30	0.12	0.18	0.37	0.26	0.34	0.41	0.28	0.39	0.38	0.40	-0.04	-0.06	0.25	-0.18	**V75**
V76	0.18	0.23	-0.11	-0.16	0.16	-0.16	-0.05	0.01	-0.05	-0.09	0.08	-0.12	-0.02	0.05	-0.08	-0.13	-0.11	-0.15	0.19	-0.10	0.17	-0.09	-0.11	-0.27	-0.03	-0.01	0.02	-0.09	0.02	-0.10	0.04	0.21	-0.03	0.09	0.11	0.10	0.26	-0.06	0.25	-0.08	**V76**
V77	-0.03	0.22	-0.08	-0.21	0.04	-0.49	-0.45	0.41	-0.44	-0.33	-0.28	0.26	0.35	0.35	0.16	0.13	0.16	-0.43	-0.21	-0.22	-0.23	-0.42	-0.19	-0.44	0.41	0.41	-0.17	-0.41	-0.21	-0.38	-0.27	-0.16	-0.31	-0.24	-0.24	-0.15	0.17	-0.08	-0.13	0.12	**V77**
V78	-0.13	0.01	0.18	-0.11	-0.23	-0.22	-0.36	0.26	-0.34	-0.42	-0.28	0.13	0.35	0.26	0.11	0.22	0.30	-0.33	-0.42	-0.14	-0.50	-0.39	-0.29	-0.33	0.36	0.37	-0.09	-0.40	-0.28	-0.37	-0.32	-0.35	-0.15	-0.54	-0.42	-0.32	0.15	-0.15	-0.37	0.29	**V78**
V79	0.38	0.45	0.20	-0.44	0.39	0.18	0.17	-0.28	0.25	0.22	0.43	-0.41	-0.38	-0.37	-0.53	-0.41	-0.48	0.13	-0.17	-0.28	-0.05	0.04	0.09	-0.29	-0.24	-0.28	0.22	0.14	0.43	0.20	0.39	0.38	0.30	0.25	0.26	0.48	-0.06	0.08	0.19	-0.12	**V79**
V80	0.64	0.33	0.10	-0.29	0.57	0.76	0.71	-0.80	0.75	0.68	0.82	-0.86	-0.77	-0.76	-0.84	-0.79	-0.80	0.72	0.01	-0.15	0.16	0.64	0.33	0.19	-0.74	-0.79	0.69	0.72	0.83	0.72	0.84	0.63	0.68	0.52	0.71	0.80	-0.20	0.13	0.56	-0.16	**V80**
	V1	**V2**	**V3**	**V4**	**V5**	**V6**	**V7**	**V8**	**V9**	**V10**	**V11**	**V12**	**V13**	**V14**	**V15**	**V16**	**V17**	**V18**	**V19**	**V20**	**V21**	**V22**	**V23**	**V24**	**V25**	**V26**	**V27**	**V28**	**V29**	**V30**	**V31**	**V32**	**V33**	**V34**	**V35**	**V36**	**V37**	**V38**	**V39**	**V40**	

Figures highlighted thus ▭ indicate correlations of strong significance between the appropriate variables in the matrix; those highlighted thus ■ indicate correlations of very strong significance

Age distribution	Children aged 0 to 4 years	V1
	Children aged 5 to 14 years	V2
	Young people aged 15 to 24 years	V3
	People aged 65 years and over	V4
Total Fertility Rate	Total Fertility Rate	V5
Families	Single parent families	V6
	Low income families	V7
	High income families	V8
	Jobless families	V9
Labour force	Unemployment	V10
	Unskilled and semi-skilled workers	V11
	Managers and administrators; professionals	V12
	Female labour force participation	V13
Education	Full-time participation in education at age 16	V14
	Average publicly examined achievement scores	V15
	Average publicly assessed achievement scores	V16
	Average school assessed achievement scores	V17
Aboriginal and Torres Strait Islander people	Aboriginal and Torres Strait Islander people	V18
NESB	Resident for five years or more	V19
	Resident for less than five years	V20
	Poor proficency in English	V21

Housing	Dwellings rented from the SA Housing Trust	V22
	Rent assistance	V23
Transport	Dwellings with no motor vehicle	V24
People who used the Internet at home	People who used the Internet at home	V25
ABS SEIFA	Index of Relative Socio-Economic Disadvantage	V26
Income support payments	Age pensioners	V27
	Disability support pensioners	V28
	Female sole parent pensioners	V29
	People receiving an unemployment benefit	V30
	Children in welfare-dependent/ low income families	V31
Perinatal	Low birthweight babies	V32
	High risk of poor pregnancy outcome	V33
	Terminations of pregnancy	V34
	Terminations of pregnancy, 15 to 19 year olds	V35
	Smoking during pregnancy	V36
Immunisation	Immunisation status at 12 months of age	V37
Overweight and obesity in childhood	Overweight (not obese) four year old boys	V38
	Obese four year old boys	V39
Dental health	Decayed, missing or filled teeth, 12 year olds	V40

Table 8.1: Correlation matrix for SLAs in the metropolitan regions ...cont

	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51	V52	V53	V54	V55	V56	V57	V58	V59	V60	V61	V62	V63	V64	V65	V66	V67	V68	V69	V70	V71	V72	V73	V74	V75	V76	V77	V78	V79	V80	
V1	-0.05	0.54	-0.37	-0.02	0.26	0.25	0.27	0.33	0.14	0.32	0.35	0.54	0.35	-0.16	0.01	-0.11	-0.68	0.27	-0.33	0.28	0.49	0.54	0.50	0.55	0.45	0.47	0.46	-0.63	0.02	-0.58	0.25	0.62	-0.43	0.11	0.31	0.18	-0.03	-0.13	0.38	0.64	**V1**
V2	-0.17	0.24	-0.35	0.08	-0.08	-0.07	-0.13	0.18	-0.21	0.14	0.03	0.17	0.08	-0.26	0.08	-0.15	-0.44	0.02	-0.46	0.44	0.16	0.26	0.31	0.30	0.29	0.14	0.13	-0.54	-0.28	-0.27	0.26	0.32	-0.11	0.11	0.32	0.23	0.22	0.01	0.45	0.33	**V2**
V3	0.15	0.33	-0.02	0.12	0.07	-0.11	0.12	-0.14	0.07	-0.30	0.32	0.00	-0.39	-0.21	-0.09	-0.06	0.30	-0.03	-0.01	-0.07	0.17	0.32	0.26	0.38	0.17	-0.07	-0.07	0.21	0.08	-0.20	0.02	0.10	-0.10	0.02	0.03	-0.11	-0.08	0.18	0.20	0.10	**V3**
V4	0.01	-0.38	0.32	-0.26	0.18	0.21	0.16	-0.09	0.31	0.05	-0.04	-0.04	0.24	0.38	-0.03	0.16	0.17	0.13	0.39	-0.32	-0.17	-0.34	-0.30	-0.32	-0.27	0.01	0.02	0.39	0.32	0.26	-0.18	-0.23	0.09	-0.04	-0.23	-0.16	-0.21	-0.11	-0.44	-0.29	**V4**
V5	-0.08	0.40	-0.35	-0.02	0.31	0.33	0.26	0.39	0.19	0.44	0.42	0.51	0.30	-0.07	-0.05	-0.12	-0.65	0.33	-0.32	0.23	0.41	0.44	0.50	0.53	0.46	0.48	0.48	-0.66	0.01	-0.54	0.34	0.58	-0.32	0.21	0.40	0.16	0.04	-0.23	0.39	0.57	**V5**
V6	0.14	0.65	-0.19	-0.23	0.73	0.69	0.80	0.54	0.76	0.64	0.83	0.77	0.58	0.26	-0.10	0.06	-0.69	0.55	0.10	0.07	0.68	0.63	0.74	0.75	0.68	0.75	0.74	-0.51	0.43	-0.75	0.17	0.83	-0.73	0.14	0.18	-0.16	-0.49	-0.22	0.18	0.76	**V6**
V7	0.00	0.46	-0.30	-0.32	0.77	0.74	0.80	0.60	0.75	0.75	0.77	0.83	0.63	0.26	-0.20	0.00	-0.76	0.58	0.11	0.06	0.72	0.60	0.67	0.66	0.64	0.80	0.80	-0.58	0.44	-0.76	0.23	0.80	-0.64	0.23	0.22	-0.05	-0.45	-0.36	0.17	0.71	**V7**
V8	0.01	-0.52	0.36	0.26	-0.68	-0.66	-0.72	-0.61	-0.65	-0.78	-0.71	-0.78	-0.61	-0.18	0.14	0.06	0.81	-0.52	-0.07	-0.14	-0.74	-0.65	-0.72	-0.70	-0.70	-0.79	-0.78	0.71	-0.32	0.78	-0.26	-0.84	0.66	-0.24	-0.26	0.01	0.41	0.26	-0.28	-0.80	**V8**
V9	0.04	0.59	-0.30	-0.30	0.80	0.73	0.84	0.61	0.80	0.69	0.89	0.84	0.53	0.22	-0.26	0.00	-0.71	0.58	0.06	0.03	0.75	0.69	0.77	0.79	0.70	0.80	0.79	-0.56	0.45	-0.83	0.29	0.87	-0.67	0.28	0.30	-0.05	-0.44	-0.34	0.25	0.75	**V9**
V10	0.04	0.59	-0.33	-0.30	0.79	0.72	0.81	0.57	0.83	0.61	0.92	0.81	0.46	0.32	-0.32	0.05	-0.66	0.65	0.06	-0.04	0.78	0.72	0.79	0.86	0.70	0.80	0.79	-0.43	0.55	-0.86	0.29	0.78	-0.56	0.27	0.30	-0.09	-0.33	-0.42	0.22	0.68	**V10**
V11	-0.04	0.64	-0.42	-0.20	0.63	0.57	0.65	0.59	0.52	0.64	0.70	0.78	0.53	0.03	-0.19	-0.06	-0.82	0.46	-0.13	0.16	0.77	0.76	0.76	0.79	0.70	0.77	0.77	-0.74	0.28	-0.84	0.34	0.88	-0.62	0.27	0.37	0.08	-0.28	-0.28	0.43	0.82	**V11**
V12	0.01	-0.62	0.36	0.12	-0.43	-0.45	-0.47	-0.56	-0.38	-0.73	-0.51	-0.65	-0.53	-0.02	0.03	0.15	0.82	-0.37	0.01	-0.30	-0.68	-0.65	-0.70	-0.65	-0.69	-0.68	-0.67	0.85	-0.09	0.72	-0.25	-0.78	0.59	-0.18	-0.28	-0.12	0.26	0.13	-0.41	-0.86	**V12**
V13	0.02	-0.62	0.39	0.25	-0.75	-0.68	-0.78	-0.60	-0.69	-0.63	-0.88	-0.84	-0.47	-0.11	0.27	0.03	0.72	-0.56	0.05	-0.08	-0.79	-0.77	-0.82	-0.86	-0.74	-0.77	-0.76	0.61	-0.38	0.87	-0.34	-0.89	0.64	-0.30	-0.35	-0.02	0.35	0.35	-0.38	-0.77	**V13**
V14	-0.05	-0.66	0.37	0.16	-0.68	-0.60	-0.73	-0.53	-0.67	-0.54	-0.89	-0.76	-0.28	-0.07	0.24	0.08	0.62	-0.51	0.05	-0.05	-0.82	-0.85	-0.84	-0.92	-0.75	-0.69	-0.69	0.53	-0.36	0.87	-0.30	-0.83	0.61	-0.29	-0.31	0.05	0.35	0.26	-0.37	-0.76	**V14**
V15	0.03	-0.61	0.39	0.11	-0.40	-0.47	-0.43	-0.54	-0.39	-0.70	-0.57	-0.61	-0.43	-0.04	0.13	0.10	0.82	-0.45	0.08	-0.32	-0.66	-0.67	-0.80	-0.77	-0.77	-0.65	-0.64	0.79	-0.10	0.76	-0.33	-0.76	0.51	-0.24	-0.36	-0.08	0.16	0.11	-0.53	-0.84	**V15**
V16	0.01	-0.54	0.33	0.17	-0.52	-0.50	-0.50	-0.56	-0.51	-0.71	-0.60	-0.67	-0.51	-0.13	0.13	0.17	0.81	-0.49	0.09	-0.32	-0.70	-0.67	-0.67	-0.69	-0.62	-0.74	-0.73	0.71	-0.27	0.75	-0.35	-0.72	0.44	-0.30	-0.36	-0.13	0.13	0.22	-0.41	-0.79	**V16**
V17	0.06	-0.67	0.47	0.19	-0.61	-0.53	-0.60	-0.60	-0.49	-0.64	-0.70	-0.68	-0.37	-0.05	0.24	0.10	0.77	-0.49	0.10	-0.15	-0.81	-0.82	-0.79	-0.83	-0.73	-0.77	-0.76	0.71	-0.30	0.91	-0.39	-0.81	0.50	-0.31	-0.43	-0.11	0.16	0.30	-0.48	-0.80	**V17**
V18	0.20	0.67	-0.17	-0.15	0.73	0.72	0.81	0.58	0.74	0.62	0.88	0.84	0.48	0.26	-0.23	0.07	-0.67	0.50	0.04	0.02	0.76	0.72	0.68	0.75	0.61	0.78	0.79	-0.48	0.51	-0.76	0.16	0.75	-0.66	0.15	0.16	-0.15	-0.43	-0.33	0.13	0.72	**V18**
V19	-0.27	-0.09	-0.34	-0.29	0.34	0.11	0.31	0.31	0.12	0.01	0.08	0.35	0.21	-0.07	-0.26	-0.18	-0.14	-0.10	-0.19	-0.15	0.36	0.19	-0.09	-0.07	-0.09	0.30	0.32	-0.03	0.33	-0.18	0.01	0.18	-0.18	0.04	0.00	0.19	-0.21	-0.42	-0.17	0.01	**V19**
V20	0.08	0.02	0.04	-0.11	0.31	0.04	0.30	0.02	0.24	-0.18	0.23	0.02	-0.15	0.11	-0.14	0.01	0.34	0.00	0.15	-0.38	0.20	0.14	-0.07	0.00	-0.11	0.12	0.13	0.38	0.44	-0.11	-0.08	-0.04	-0.03	0.02	-0.11	-0.10	-0.22	-0.14	-0.28	-0.15	**V20**
V21	-0.28	0.05	-0.42	-0.35	0.50	0.22	0.46	0.47	0.23	0.12	0.22	0.43	0.29	-0.04	-0.31	-0.11	-0.26	0.00	-0.20	-0.19	0.48	0.33	0.05	0.08	0.03	0.47	0.48	-0.17	0.41	-0.39	0.11	0.36	-0.28	0.15	0.10	0.17	-0.23	-0.50	-0.05	0.16	**V21**
V22	0.14	0.52	-0.10	-0.31	0.75	0.69	0.78	0.58	0.83	0.63	0.86	0.80	0.52	0.36	-0.24	0.05	-0.60	0.51	0.08	0.10	0.67	0.57	0.63	0.66	0.57	0.77	0.77	-0.36	0.58	-0.66	0.16	0.69	-0.59	0.19	0.15	-0.09	-0.42	-0.39	0.04	0.64	**V22**
V23	0.05	0.43	-0.25	-0.24	0.66	0.53	0.66	0.30	0.61	0.25	0.59	0.48	0.29	0.34	-0.33	0.10	-0.30	0.47	0.25	-0.34	0.61	0.55	0.47	0.56	0.38	0.54	0.53	-0.02	0.58	-0.65	0.18	0.41	-0.26	0.23	0.17	-0.11	-0.19	-0.29	0.09	0.33	**V23**
V24	0.17	0.21	0.08	-0.34	0.69	0.57	0.71	0.27	0.77	0.27	0.61	0.49	0.37	0.46	-0.26	0.16	-0.14	0.37	0.33	-0.34	0.41	0.28	0.24	0.31	0.19	0.50	0.51	0.17	0.71	-0.35	-0.06	0.29	-0.35	0.06	-0.10	-0.27	-0.44	-0.33	-0.29	0.19	**V24**
V25	0.05	-0.52	0.37	0.34	-0.75	-0.70	-0.78	-0.61	-0.66	-0.68	-0.69	-0.82	-0.63	-0.14	0.25	0.00	0.78	-0.48	-0.07	-0.04	-0.78	-0.67	-0.66	-0.66	-0.62	-0.79	-0.79	0.63	-0.40	0.80	-0.25	-0.82	0.65	-0.24	-0.25	-0.03	0.41	0.36	-0.24	-0.74	**V25**
V26	0.00	-0.61	0.38	0.29	-0.79	-0.69	-0.81	-0.66	-0.71	-0.68	-0.82	-0.86	-0.60	-0.17	0.23	0.03	0.79	-0.52	0.03	-0.09	-0.81	-0.75	-0.75	-0.77	-0.69	-0.85	-0.85	0.64	-0.45	0.86	-0.29	-0.89	0.69	-0.27	-0.30	-0.01	0.41	0.37	-0.28	-0.79	**V26**
V27	0.33	0.68	-0.21	0.16	0.25	0.31	0.34	0.44	0.24	0.54	0.37	0.57	0.48	0.20	0.08	-0.11	-0.70	0.22	-0.03	0.18	0.64	0.63	0.51	0.52	0.48	0.61	0.61	-0.56	0.25	-0.54	0.10	0.50	-0.44	0.06	0.12	0.02	-0.17	-0.09	0.22	0.69	**V27**
V28	0.08	0.56	-0.22	-0.31	0.75	0.75	0.79	0.66	0.83	0.77	0.83	0.81	0.57	0.41	-0.26	0.05	-0.73	0.59	0.17	0.04	0.78	0.66	0.74	0.74	0.69	0.85	0.85	-0.48	0.58	-0.79	0.19	0.72	-0.59	0.21	0.18	-0.09	-0.41	-0.40	0.14	0.72	**V28**
V29	-0.04	0.62	-0.37	-0.22	0.60	0.64	0.61	0.58	0.61	0.70	0.75	0.80	0.51	0.15	-0.25	-0.07	-0.85	0.55	-0.05	0.20	0.73	0.70	0.81	0.84	0.74	0.77	0.76	-0.69	0.31	-0.82	0.33	0.79	-0.54	0.25	0.37	0.02	-0.21	-0.28	0.43	0.83	**V29**
V30	0.08	0.61	-0.28	-0.30	0.78	0.71	0.80	0.65	0.84	0.70	0.88	0.81	0.54	0.36	-0.30	0.04	-0.71	0.61	0.13	0.00	0.80	0.72	0.79	0.82	0.72	0.86	0.86	-0.48	0.59	-0.84	0.26	0.76	-0.58	0.25	0.26	-0.10	-0.38	-0.37	0.20	0.72	**V30**
V31	-0.06	0.57	-0.41	-0.27	0.64	0.66	0.67	0.69	0.64	0.77	0.75	0.80	0.48	0.14	-0.29	-0.08	-0.83	0.51	-0.02	0.19	0.80	0.72	0.80	0.80	0.75	0.81	0.81	-0.74	0.32	-0.86	0.32	0.81	-0.57	0.28	0.34	0.04	-0.27	-0.32	0.39	0.84	**V31**
V32	-0.22	0.47	-0.47	-0.30	0.61	0.50	0.57	0.45	0.51	0.47	0.61	0.73	0.45	-0.02	-0.26	-0.04	-0.70	0.48	-0.20	0.17	0.61	0.57	0.61	0.68	0.53	0.69	0.69	-0.56	0.33	-0.74	0.35	0.74	-0.47	0.24	0.41	0.21	-0.16	-0.35	0.38	0.63	**V32**
V33	0.11	0.64	-0.12	-0.09	0.54	0.44	0.56	0.43	0.64	0.64	0.63	0.51	0.49	0.23	-0.14	-0.01	-0.61	0.54	0.12	0.13	0.50	0.55	0.67	0.67	0.63	0.64	0.63	-0.51	0.30	-0.67	0.24	0.71	-0.53	0.17	0.28	-0.03	-0.31	-0.15	0.30	0.68	**V33**
V34	-0.02	0.53	-0.37	-0.29	0.77	0.61	0.75	0.62	0.72	0.56	0.72	0.66	0.41	0.33	-0.52	0.04	-0.55	0.46	0.07	-0.23	0.72	0.65	0.63	0.65	0.57	0.74	0.74	-0.35	0.56	-0.79	0.39	0.68	-0.37	0.39	0.39	0.09	-0.24	-0.54	0.25	0.52	**V34**
V35	0.01	0.65	-0.43	-0.26	0.72	0.62	0.76	0.59	0.72	0.65	0.75	0.76	0.46	0.31	-0.38	-0.09	-0.71	0.47	-0.01	-0.09	0.79	0.72	0.70	0.74	0.63	0.82	0.82	-0.50	0.52	-0.83	0.37	0.78	-0.49	0.35	0.38	0.11	-0.24	-0.42	0.26	0.71	**V35**
V36	-0.03	0.67	-0.42	-0.14	0.58	0.59	0.57	0.60	0.51	0.73	0.69	0.74	0.44	0.07	-0.26	-0.08	-0.84	0.49	-0.02	0.18	0.75	0.76	0.80	0.81	0.74	0.71	0.71	-0.77	0.19	-0.85	0.36	0.79	-0.51	0.28	0.40	0.10	-0.15	-0.32	0.48	0.80	**V36**
V37	-0.32	-0.33	-0.05	-0.07	-0.34	-0.33	-0.45	-0.09	-0.53	-0.18	-0.64	-0.28	0.13	-0.25	0.16	-0.12	0.04	-0.41	-0.11	0.09	-0.29	-0.36	-0.44	-0.55	-0.35	-0.23	-0.22	-0.09	-0.32	0.36	-0.05	-0.25	0.23	-0.08	-0.04	0.26	0.17	0.15	-0.06	-0.20	**V37**
V38	0.04	0.08	-0.04	0.18	0.17	0.11	0.13	0.09	0.09	0.12	0.13	0.14	0.07	0.05	0.03	-0.03	-0.05	0.18	-0.03	-0.10	0.22	0.27	0.01	0.09	-0.04	0.22	0.24	-0.02	0.25	-0.15	-0.02	0.04	-0.06	0.07	-0.06	-0.06	-0.08	-0.15	0.08	0.13	**V38**
V39	-0.07	0.29	-0.33	-0.23	0.48	0.43	0.45	0.54	0.31	0.55	0.37	0.56	0.46	0.10	-0.21	0.02	-0.64	0.43	-0.05	0.15	0.58	0.46	0.39	0.36	0.39	0.56	0.57	-0.60	0.17	-0.58	0.25	0.56	-0.36	0.23	0.25	0.25	-0.13	-0.37	0.19	0.56	**V39**
V40	-0.11	-0.36	0.16	0.03	-0.41	-0.19	-0.42	-0.27	-0.38	-0.04	-0.54	-0.25	0.27	-0.06	0.23	0.01	-0.07	-0.07	0.13	0.25	-0.50	-0.59	-0.36	-0.47	-0.28	-0.29	-0.30	-0.04	-0.37	0.44	-0.22	-0.31	0.14	-0.27	-0.18	-0.08	0.12	0.29	-0.12	-0.16	**V40**
	V41	**V42**	**V43**	**V44**	**V45**	**V46**	**V47**	**V48**	**V49**	**V50**	**V51**	**V52**	**V53**	**V54**	**V55**	**V56**	**V57**	**V58**	**V59**	**V60**	**V61**	**V62**	**V63**	**V64**	**V65**	**V66**	**V67**	**V68**	**V69**	**V70**	**V71**	**V72**	**V73**	**V74**	**V75**	**V76**	**V77**	**V78**	**V79**	**V80**	

Figures highlighted thus ▭ indicate correlations of strong significance between the appropriate variables in the matrix; those highlighted thus ■ indicate correlations of very strong significance

Cancer incidence	All cancers	V41
	Lung cancer	V42
	Female breast cancer	V43
	Prostate cancer	V44
Premature mortality	Deaths of males aged 15 to 64 years	V45
	Deaths of females aged 15 to 64 years	V46
Avoidable mortality	Avoidable mortality	V47
Community based services	Community health services	V48
	Community mental health services	V49
	Child and Adolescent Mental Health Services	V50
	Clients of the Department for Families and Communities	V51
Home and community care	Domiciliary care	V52
	Home nursing (RDNS)	V53
	Home delivered meals (Meals on Wheels)	V54
Screening services	Breast screening participation	V55
	Breast cancer detected through screening	V56
	Cervical screening participation	V57
	Cervical screening outcomes: High grade abnormality	V58
	Cervical screening outcomes: Low grade abnormality	V59

General medical practitioners	Population per GP	V60
	GP services - males	V61
	GP services - females	V62
Emergency department attendances	Total attendances	V63
	Triage 1,2 and 3 (urgent)	V64
	Triage 4 and 5 (semi-urgent and non-urgent)	V65
Outpatient department attendances	All outpatient department attendances	V66
	Attendances for consultations with specialist medical practitioners	V67
Specialist medical practitioner services in private practice	Consultations funded under Medicare	V68
All specialist medical practitioner services	All consultations (in outpatient departments and funded under Medicare)	V69
Private health insurance	Private health insurance	V70
Hospital admissions	Total admissions	V71
	Public acute hospitals	V72
	Private hospitals	V73
	Admissions of males	V74
	Admissions of females	V75
	Tonsillectomy	V76
	Myringotomy	V77
	Caesarean section	V78
	Hysterectomy	V79
Hospital booking lists	People waiting for more than six months	V80

Table 8.1: Correlation matrix for SLAs in the metropolitan regions ...cont

	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51	V52	V53	V54	V55	V56	V57	V58	V59	V60	V61	V62	V63	V64	V65	V66	V67	V68	V69	V70	V71	V72	V73	V74	V75	V76	V77	V78	V79	V80	
V41	1.00	0.44	0.61	0.61	-0.03	-0.02	0.12	-0.04	0.15	0.16	0.19	-0.06	0.03	0.39	0.40	0.24	0.14	0.08	0.43	-0.13	0.06	0.14	0.05	0.06	0.04	0.06	0.06	0.17	0.20	0.09	-0.29	-0.07	-0.19	-0.18	-0.35	-0.33	-0.26	0.28	-0.31	0.04	**V41**
V42	0.44	1.00	-0.01	0.14	0.44	0.33	0.50	0.42	0.47	0.48	0.63	0.52	0.38	0.26	-0.06	0.01	-0.51	0.39	0.25	0.07	0.65	0.73	0.67	0.70	0.61	0.61	0.60	-0.41	0.35	-0.69	0.13	0.57	-0.48	0.10	0.15	-0.04	-0.22	-0.06	0.27	0.71	**V42**
V43	0.61	-0.01	1.00	0.24	-0.33	-0.19	-0.25	-0.31	-0.05	-0.16	-0.16	-0.36	-0.11	0.19	0.36	0.48	0.46	-0.09	0.52	-0.06	-0.44	-0.41	-0.29	-0.33	-0.25	-0.34	-0.34	0.44	-0.04	0.51	-0.42	-0.46	0.10	-0.31	-0.47	-0.29	-0.14	0.37	-0.38	-0.25	**V43**
V44	0.61	0.14	0.24	1.00	-0.31	-0.37	-0.28	-0.16	-0.32	-0.04	-0.21	-0.27	-0.21	-0.04	0.30	-0.11	0.23	-0.15	0.14	-0.10	-0.18	-0.02	-0.18	-0.18	-0.17	-0.24	-0.24	0.08	-0.20	0.26	-0.17	-0.26	0.12	-0.16	-0.18	-0.06	0.04	0.26	-0.04	-0.18	**V44**
V45	-0.03	0.44	-0.33	-0.31	1.00	0.65	0.91	0.49	0.75	0.49	0.77	0.70	0.50	0.21	-0.38	0.03	-0.48	0.46	0.06	-0.20	0.61	0.60	0.52	0.60	0.44	0.74	0.74	-0.35	0.56	-0.73	0.51	0.76	-0.52	0.48	0.53	0.12	-0.31	-0.46	0.28	0.52	**V45**
V46	-0.02	0.33	-0.19	-0.37	0.65	1.00	0.81	0.35	0.74	0.51	0.68	0.69	0.46	0.25	-0.27	0.21	-0.54	0.51	0.12	-0.14	0.53	0.44	0.51	0.56	0.46	0.57	0.58	-0.28	0.43	-0.59	0.13	0.56	-0.63	0.11	0.15	-0.12	-0.44	-0.41	0.15	0.49	**V46**
V47	0.12	0.50	-0.25	-0.28	0.91	0.81	1.00	0.45	0.82	0.50	0.82	0.75	0.47	0.26	-0.23	0.12	-0.48	0.45	0.09	-0.20	0.68	0.62	0.59	0.65	0.52	0.70	0.71	-0.28	0.57	-0.72	0.15	0.77	-0.69	0.19	0.14	-0.15	-0.49	-0.38	0.02	0.58	**V47**
V48	-0.04	0.42	-0.31	-0.16	0.49	0.35	0.45	1.00	0.39	0.65	0.48	0.49	0.42	0.25	-0.21	0.00	-0.61	0.33	-0.01	0.12	0.63	0.53	0.57	0.46	0.61	0.67	0.67	-0.61	0.27	-0.65	0.19	0.60	-0.46	0.19	0.18	-0.03	-0.29	-0.38	0.23	0.58	**V48**
V49	0.15	0.47	-0.05	-0.32	0.75	0.74	0.82	0.39	1.00	0.59	0.84	0.65	0.45	0.44	-0.19	0.13	-0.44	0.59	0.25	-0.08	0.57	0.49	0.64	0.67	0.58	0.68	0.68	-0.18	0.62	-0.62	0.14	0.63	-0.54	0.18	0.12	-0.24	-0.51	-0.27	-0.02	0.52	**V49**
V50	0.16	0.48	-0.16	-0.04	0.49	0.51	0.50	0.65	0.59	1.00	0.56	0.46	0.50	0.43	-0.03	-0.04	-0.67	0.50	0.28	0.13	0.50	0.46	0.67	0.53	0.71	0.69	0.68	-0.71	0.21	-0.59	0.28	0.66	-0.44	0.27	0.27	-0.03	-0.29	-0.16	0.25	0.70	**V50**
V51	0.19	0.63	-0.16	-0.21	0.77	0.68	0.82	0.48	0.84	0.56	1.00	0.75	0.29	0.28	-0.23	0.06	-0.48	0.55	0.10	0.02	0.71	0.71	0.79	0.86	0.71	0.70	0.69	-0.34	0.52	-0.79	0.24	0.75	-0.58	0.25	0.23	-0.15	-0.41	-0.30	0.19	0.65	**V51**
V52	-0.06	0.52	-0.36	-0.27	0.70	0.69	0.75	0.49	0.65	0.46	0.75	1.00	0.56	0.06	-0.35	-0.04	-0.76	0.45	-0.12	0.08	0.75	0.67	0.62	0.71	0.53	0.71	0.72	-0.42	0.48	-0.74	0.14	0.69	-0.61	0.10	0.17	-0.02	-0.35	-0.44	0.20	0.67	**V52**
V53	0.03	0.38	-0.11	-0.21	0.50	0.46	0.47	0.42	0.45	0.50	0.29	0.56	1.00	0.39	-0.09	0.01	-0.70	0.44	0.13	0.03	0.36	0.27	0.32	0.28	0.33	0.67	0.67	-0.33	0.49	-0.43	0.11	0.46	-0.39	0.09	0.12	-0.04	-0.28	-0.15	0.10	0.50	**V53**
V54	0.39	0.26	0.19	-0.04	0.21	0.25	0.26	0.25	0.44	0.43	0.28	0.06	0.39	1.00	0.07	0.17	-0.17	0.32	0.29	-0.12	0.14	0.08	0.21	0.14	0.25	0.41	0.39	0.13	0.54	-0.12	0.01	0.06	-0.05	0.09	-0.04	-0.23	-0.17	-0.08	-0.29	0.14	**V54**
V55	0.40	-0.06	0.36	0.30	-0.38	-0.27	-0.23	-0.21	-0.19	-0.03	-0.23	-0.35	-0.09	0.07	1.00	0.14	0.29	-0.17	0.17	0.23	-0.20	-0.20	-0.16	-0.25	-0.09	-0.22	-0.23	0.05	-0.21	0.36	-0.47	-0.22	-0.19	-0.40	-0.50	-0.38	-0.29	0.55	-0.38	-0.17	**V55**
V56	0.24	0.01	0.48	-0.11	0.03	0.21	0.12	0.00	0.13	-0.04	0.06	-0.04	0.01	0.17	0.14	1.00	0.18	0.05	0.32	-0.13	-0.14	-0.18	0.01	-0.02	0.03	-0.09	-0.10	0.13	0.00	0.08	-0.19	-0.06	-0.11	-0.10	-0.23	-0.24	-0.19	0.08	-0.14	-0.09	**V56**
V57	0.14	-0.51	0.46	0.23	-0.48	-0.54	-0.48	-0.61	-0.44	-0.67	-0.48	-0.76	-0.70	-0.17	0.29	0.18	1.00	-0.49	0.13	-0.24	-0.68	-0.59	-0.61	-0.61	-0.58	-0.75	-0.74	0.69	-0.29	0.74	-0.27	-0.67	0.46	-0.19	-0.31	-0.10	0.16	0.34	-0.35	-0.73	**V57**
V58	0.08	0.39	-0.09	-0.15	0.46	0.51	0.45	0.33	0.59	0.50	0.55	0.45	0.44	0.32	-0.17	0.05	-0.49	1.00	0.22	-0.06	0.40	0.37	0.51	0.54	0.47	0.50	0.49	-0.28	0.32	-0.58	0.23	0.48	-0.30	0.21	0.24	-0.06	-0.18	-0.30	0.25	0.46	**V58**
V59	0.43	0.25	0.52	0.14	0.06	0.12	0.09	-0.01	0.25	0.28	0.10	-0.12	0.13	0.29	0.17	0.32	0.13	0.22	1.00	-0.15	-0.10	-0.13	0.11	0.01	0.16	0.00	-0.01	0.04	0.02	0.06	-0.23	-0.07	-0.13	-0.14	-0.25	-0.31	-0.17	0.32	-0.13	0.09	**V59**
V60	-0.13	0.07	-0.06	-0.10	-0.20	-0.14	-0.20	0.12	-0.08	0.13	0.02	0.08	0.03	-0.12	0.23	-0.13	-0.24	-0.06	-0.15	1.00	0.04	0.03	0.24	0.13	0.30	0.00	-0.01	-0.30	-0.25	-0.06	-0.09	0.03	-0.10	-0.13	-0.07	-0.05	-0.01	0.20	0.12	0.22	**V60**
V61	0.06	0.65	-0.44	-0.18	0.61	0.53	0.68	0.63	0.57	0.50	0.71	0.75	0.36	0.14	-0.20	-0.14	-0.68	0.40	-0.10	0.04	1.00	0.94	0.70	0.78	0.61	0.80	0.80	-0.46	0.54	-0.85	0.16	0.71	-0.61	0.16	0.16	0.00	-0.38	-0.37	0.20	0.69	**V61**
V62	0.14	0.73	-0.41	-0.02	0.60	0.44	0.62	0.53	0.49	0.46	0.71	0.67	0.27	0.08	-0.20	-0.18	-0.59	0.37	-0.13	0.03	0.94	1.00	0.72	0.82	0.62	0.74	0.74	-0.45	0.47	-0.84	0.26	0.71	-0.51	0.24	0.27	0.05	-0.27	-0.32	0.34	0.69	**V62**
V63	0.05	0.67	-0.29	-0.18	0.52	0.51	0.59	0.57	0.64	0.67	0.79	0.62	0.32	0.21	-0.16	0.01	-0.61	0.51	0.11	0.24	0.70	0.72	1.00	0.94	0.98	0.65	0.63	-0.56	0.27	-0.84	0.27	0.76	-0.56	0.22	0.29	-0.13	-0.33	-0.13	0.41	0.79	**V63**
V64	0.06	0.70	-0.33	-0.18	0.60	0.56	0.65	0.46	0.67	0.53	0.86	0.71	0.28	0.14	-0.25	-0.02	-0.61	0.54	0.01	0.13	0.78	0.82	0.94	1.00	0.84	0.68	0.67	-0.47	0.38	-0.88	0.31	0.76	-0.52	0.27	0.34	-0.07	-0.26	-0.20	0.43	0.77	**V64**
V65	0.04	0.61	-0.25	-0.17	0.44	0.46	0.52	0.61	0.58	0.71	0.71	0.53	0.33	0.25	-0.09	0.03	-0.58	0.47	0.16	0.30	0.61	0.62	0.98	0.84	1.00	0.59	0.57	-0.58	0.18	-0.76	0.23	0.72	-0.56	0.18	0.25	-0.15	-0.36	-0.08	0.38	0.76	**V65**
V66	0.06	0.61	-0.34	-0.24	0.74	0.57	0.70	0.67	0.68	0.69	0.70	0.71	0.67	0.41	-0.22	-0.09	-0.75	0.50	0.00	0.00	0.80	0.74	0.65	0.68	0.59	1.00	1.00	-0.50	0.73	-0.79	0.32	0.74	-0.50	0.30	0.33	0.02	-0.29	-0.30	0.21	0.75	**V66**
V67	0.06	0.60	-0.34	-0.24	0.74	0.58	0.71	0.67	0.68	0.68	0.69	0.72	0.67	0.39	-0.23	-0.10	-0.74	0.49	-0.01	-0.01	0.80	0.74	0.63	0.67	0.57	1.00	1.00	-0.50	0.73	-0.79	0.31	0.74	-0.49	0.30	0.32	0.02	-0.29	-0.30	0.20	0.74	**V67**
V68	0.17	-0.41	0.44	0.08	-0.35	-0.28	-0.28	-0.61	-0.18	-0.71	-0.34	-0.42	-0.33	0.13	0.05	0.13	0.69	-0.28	0.04	-0.30	-0.46	-0.45	-0.56	-0.47	-0.58	-0.50	-0.50	1.00	0.23	0.63	-0.40	-0.69	0.37	-0.30	-0.43	-0.23	0.02	0.12	-0.52	-0.71	**V68**
V69	0.20	0.35	-0.04	-0.20	0.56	0.43	0.57	0.27	0.62	0.21	0.52	0.48	0.49	0.54	-0.21	0.00	-0.29	0.32	0.02	-0.25	0.54	0.47	0.27	0.38	0.18	0.73	0.73	0.23	1.00	-0.39	0.04	0.29	-0.27	0.09	0.02	-0.16	-0.31	-0.25	-0.18	0.27	**V69**
V70	0.09	-0.69	0.51	0.26	-0.73	-0.59	-0.72	-0.65	-0.62	-0.59	-0.79	-0.74	-0.43	-0.12	0.36	0.08	0.74	-0.58	0.06	-0.06	-0.85	-0.84	-0.84	-0.88	-0.76	-0.79	-0.79	0.63	-0.39	1.00	-0.42	-0.85	0.52	-0.37	-0.44	-0.08	0.20	0.41	-0.46	-0.79	**V70**
V71	-0.29	0.13	-0.42	-0.17	0.51	0.13	0.15	0.19	0.14	0.28	0.24	0.14	0.11	0.01	-0.47	-0.19	-0.27	0.23	-0.23	-0.09	0.16	0.26	0.27	0.31	0.23	0.32	0.31	-0.40	0.04	-0.42	1.00	0.50	0.38	0.95	0.98	0.69	0.52	-0.23	0.69	0.26	**V71**
V72	-0.07	0.57	-0.46	-0.26	0.76	0.56	0.77	0.60	0.63	0.66	0.75	0.69	0.46	0.06	-0.22	-0.06	-0.67	0.48	-0.07	0.03	0.71	0.71	0.76	0.76	0.72	0.74	0.74	-0.69	0.29	-0.85	0.50	1.00	-0.61	0.47	0.50	0.15	-0.31	-0.29	0.43	0.78	**V72**
V73	-0.19	-0.48	0.10	0.12	-0.52	-0.63	-0.69	-0.46	-0.54	-0.44	-0.58	-0.61	-0.39	-0.05	-0.19	-0.11	0.46	-0.30	-0.13	-0.10	-0.61	-0.51	-0.56	-0.52	-0.56	-0.50	-0.49	0.37	-0.27	0.52	0.38	-0.61	1.00	0.37	0.37	0.47	0.81	0.10	0.17	-0.59	**V73**
V74	-0.18	0.10	-0.31	-0.16	0.48	0.11	0.19	0.19	0.18	0.27	0.25	0.10	0.09	0.09	-0.40	-0.10	-0.19	0.21	-0.14	-0.13	0.16	0.24	0.22	0.27	0.18	0.30	0.30	-0.30	0.09	-0.37	0.95	0.47	0.37	1.00	0.89	0.62	0.45	-0.21	0.57	0.20	**V74**
V75	-0.35	0.15	-0.47	-0.18	0.53	0.15	0.14	0.18	0.12	0.27	0.23	0.17	0.12	-0.04	-0.50	-0.23	-0.31	0.24	-0.25	-0.07	0.16	0.27	0.29	0.34	0.25	0.33	0.32	-0.43	0.02	-0.44	0.98	0.50	0.37	0.89	1.00	0.70	0.53	-0.24	0.72	0.29	**V75**
V76	-0.33	-0.04	-0.29	-0.06	0.12	-0.12	-0.15	-0.03	-0.24	-0.03	-0.15	-0.02	-0.04	-0.23	-0.38	-0.24	-0.10	-0.06	-0.31	-0.05	0.00	0.05	-0.13	-0.07	-0.15	0.02	0.02	-0.23	-0.16	-0.08	0.69	0.15	0.47	0.62	0.70	1.00	0.62	-0.29	0.53	0.01	**V76**
V77	-0.26	-0.22	-0.14	0.04	-0.31	-0.44	-0.49	-0.29	-0.51	-0.29	-0.41	-0.35	-0.28	-0.17	-0.29	-0.19	0.16	-0.18	-0.17	-0.01	-0.38	-0.27	-0.33	-0.26	-0.36	-0.29	-0.29	0.02	-0.31	0.20	0.52	-0.31	0.81	0.45	0.53	0.62	1.00	-0.03	0.39	-0.24	**V77**
V78	0.28	-0.06	0.37	0.26	-0.46	-0.41	-0.38	-0.38	-0.27	-0.16	-0.30	-0.44	-0.15	-0.08	0.55	0.08	0.34	-0.30	0.32	0.20	-0.37	-0.32	-0.13	-0.20	-0.08	-0.30	-0.30	0.12	-0.25	0.41	-0.23	-0.29	0.10	-0.21	-0.24	-0.29	-0.03	1.00	-0.09	-0.10	**V78**
V79	-0.31	0.27	-0.38	-0.04	0.28	0.15	0.02	0.23	-0.02	0.25	0.19	0.20	0.10	-0.29	-0.38	-0.14	-0.35	0.25	-0.13	0.12	0.20	0.34	0.41	0.43	0.38	0.21	0.20	-0.52	-0.18	-0.46	0.69	0.43	0.17	0.57	0.72	0.53	0.39	-0.09	1.00	0.41	**V79**
V80	0.04	0.71	-0.25	-0.18	0.52	0.49	0.58	0.58	0.52	0.70	0.65	0.67	0.50	0.14	-0.17	-0.09	-0.73	0.46	0.09	0.22	0.69	0.69	0.79	0.77	0.76	0.75	0.74	-0.71	0.27	-0.79	0.26	0.78	-0.59	0.20	0.29	0.01	-0.24	-0.10	0.41	1.00	**V80**
	V41	**V42**	**V43**	**V44**	**V45**	**V46**	**V47**	**V48**	**V49**	**V50**	**V51**	**V52**	**V53**	**V54**	**V55**	**V56**	**V57**	**V58**	**V59**	**V60**	**V61**	**V62**	**V63**	**V64**	**V65**	**V66**	**V67**	**V68**	**V69**	**V70**	**V71**	**V72**	**V73**	**V74**	**V75**	**V76**	**V77**	**V78**	**V79**	**V80**	

Figures highlighted thus ▭ indicate correlations of strong significance between the appropriate variables in the matrix; those highlighted thus ■ indicate correlations of very strong significance

Cancer incidence	All cancers	V41
	Lung cancer	V42
	Female breast cancer	V43
	Prostate cancer	V44
Premature mortality	Deaths of males aged 15 to 64 years	V45
	Deaths of females aged 15 to 64 years	V46
Avoidable mortality	Avoidable mortality	V47
Community based services	Community health services	V48
	Community mental health services	V49
	Child and Adolescent Mental Health Services	V50
	Clients of the Department for Families and Communities	V51
Home and community care	Domiciliary care	V52
	Home nursing (RDNS)	V53
	Home delivered meals (Meals on Wheels)	V54
Screening services	Breast screening participation	V55
	Breast cancer detected through screening	V56
	Cervical screening participation	V57
	Cervical screening outcomes: High grade abnormality	V58
	Cervical screening outcomes: Low grade abnormality	V59

General medical practitioners	Population per GP	V60
	GP services - males	V61
	GP services - females	V62
Emergency department attendances	Total attendances	V63
	Triage 1,2 and 3 (urgent)	V64
	Triage 4 and 5 (semi-urgent and non-urgent)	V65
Outpatient department attendances	All outpatient department attendances	V66
	Attendances for consultations with specialist medical practitioners	V67
Specialist medical practitioner services in private practice	Consultations funded under Medicare	V68
All specialist medical practitioner services	All consultations (in outpatient departments and funded under Medicare)	V69
Private health insurance	Private health insurance	V70
Hospital admissions	Total admissions	V71
	Public acute hospitals	V72
	Private hospitals	V73
	Admissions of males	V74
	Admissions of females	V75
	Tonsillectomy	V76
	Myringotomy	V77
	Caesarean section	V78
	Hysterectomy	V79
Hospital booking lists	People waiting for more than six months	V80

Table 8.2: Correlation matrix for SLAs in country South Australia

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	
V1	1.00	0.57	0.41	-0.72	0.14	0.22	-0.38	0.41	-0.15	0.36	0.32	-0.27	0.06	-0.21	-0.12	-0.14	0.06	0.33	-0.04	0.19	0.04	0.17	-0.33	0.12	0.09	-0.14	-0.07	-0.32	0.15	0.44	-0.09	0.08	0.27	0.03	**V1**
V2	0.57	1.00	0.12	-0.57	0.19	-0.19	-0.57	0.55	-0.52	-0.04	-0.11	0.05	0.46	0.31	0.13	0.20	0.28	-0.08	-0.25	0.04	-0.10	-0.06	-0.53	-0.39	0.46	0.38	-0.39	-0.62	-0.25	0.01	-0.33	0.06	0.07	-0.35	**V2**
V3	0.41	0.12	1.00	-0.55	-0.38	0.54	-0.31	0.36	0.05	0.45	0.52	-0.52	-0.08	-0.35	0.08	-0.31	-0.31	0.46	0.18	0.14	0.17	0.30	0.01	0.42	-0.04	-0.38	0.18	-0.18	0.35	0.41	0.09	0.24	0.31	-0.03	**V3**
V4	-0.72	-0.57	-0.55	1.00	0.22	-0.20	0.50	-0.47	0.10	-0.25	-0.41	0.22	0.02	0.38	-0.03	0.17	0.03	-0.46	-0.10	-0.14	-0.09	0.00	0.38	-0.08	-0.15	0.24	-0.05	0.33	-0.08	-0.27	0.08	-0.12	-0.18	-0.10	**V4**
V5	0.14	0.19	-0.38	0.22	1.00	-0.33	-0.10	0.15	-0.17	-0.23	-0.23	0.12	0.27	0.47	-0.04	0.07	0.07	-0.56	-0.11	0.17	0.00	0.13	-0.21	-0.37	0.19	0.41	-0.57	-0.03	-0.29	-0.26	-0.43	-0.20	-0.03	-0.08	**V5**
V6	0.22	-0.19	0.54	-0.20	-0.33	1.00	0.29	-0.17	0.66	0.56	0.36	-0.57	-0.62	-0.39	-0.37	-0.53	-0.44	0.50	0.38	0.15	0.25	0.56	0.35	0.78	-0.41	-0.70	0.41	0.40	0.72	0.51	0.55	0.24	0.34	0.33	**V6**
V7	-0.38	-0.57	-0.31	0.50	-0.10	0.29	1.00	-0.89	0.69	0.41	-0.11	0.22	-0.58	-0.22	-0.35	-0.01	-0.12	0.23	0.12	-0.15	0.05	0.02	0.34	0.47	-0.73	-0.51	0.43	0.70	0.21	0.28	0.50	-0.03	-0.08	0.29	**V7**
V8	0.41	0.55	0.36	-0.47	0.15	-0.17	-0.89	1.00	-0.55	-0.32	0.18	-0.37	0.47	0.30	0.26	-0.13	-0.09	-0.25	-0.02	0.19	-0.01	0.04	-0.32	-0.41	0.73	0.44	-0.45	-0.55	-0.13	-0.25	-0.55	0.11	0.12	-0.19	**V8**
V9	-0.15	-0.52	0.05	0.10	-0.17	0.66	0.69	-0.55	1.00	0.43	0.27	-0.24	-0.87	-0.52	-0.34	-0.40	-0.40	0.33	0.35	0.02	0.19	0.31	0.34	0.68	-0.58	-0.78	0.46	0.87	0.57	0.28	0.55	0.05	0.09	0.65	**V9**
V10	0.36	-0.04	0.45	-0.25	-0.23	0.56	0.41	-0.32	0.43	1.00	0.27	-0.29	-0.39	-0.52	-0.31	-0.23	-0.15	0.66	0.14	-0.05	0.09	0.20	0.00	0.63	-0.60	-0.59	0.24	0.28	0.38	0.89	0.52	0.27	0.36	0.17	**V10**
V11	0.32	-0.11	0.52	-0.41	-0.23	0.36	-0.11	0.18	0.27	0.27	1.00	-0.49	-0.25	-0.45	-0.09	-0.45	-0.34	0.43	0.24	0.39	0.33	0.18	0.07	0.40	-0.31	-0.61	0.28	0.15	0.39	0.32	0.19	0.16	0.14	0.35	**V11**
V12	-0.27	0.05	-0.52	0.22	0.12	-0.57	0.22	-0.37	-0.24	-0.29	-0.49	1.00	0.22	0.15	0.21	0.61	0.55	-0.07	-0.44	-0.31	-0.29	-0.51	-0.29	-0.28	-0.03	0.22	0.06	-0.20	-0.60	-0.33	-0.27	-0.32	-0.39	-0.35	**V12**
V13	0.06	0.46	-0.08	0.02	0.27	-0.62	-0.58	0.47	-0.87	-0.39	-0.25	0.22	1.00	0.56	0.33	0.46	0.31	-0.44	-0.30	0.04	-0.13	-0.21	-0.32	-0.66	0.53	0.77	-0.46	-0.67	-0.49	-0.25	-0.54	-0.07	-0.03	-0.47	**V13**
V14	-0.21	0.31	-0.35	0.38	0.47	-0.39	-0.22	0.30	-0.52	-0.52	-0.45	0.15	0.56	1.00	0.04	0.23	0.07	-0.66	-0.14	0.11	-0.03	-0.05	0.01	-0.60	0.46	0.74	-0.42	-0.32	-0.29	-0.43	-0.37	0.02	-0.06	-0.51	**V14**
V15	-0.12	0.13	0.08	-0.03	-0.04	-0.37	-0.35	0.26	-0.34	-0.31	-0.09	0.21	0.33	0.04	1.00	0.35	0.27	-0.17	-0.42	-0.30	-0.41	-0.28	-0.39	-0.31	0.36	0.31	-0.20	-0.36	-0.37	-0.36	-0.31	-0.01	-0.14	-0.24	**V15**
V16	-0.14	0.20	-0.31	0.17	0.07	-0.53	-0.01	-0.13	-0.40	-0.23	-0.45	0.61	0.46	0.23	0.35	1.00	0.57	-0.17	-0.38	-0.27	-0.29	-0.37	-0.31	-0.34	0.11	0.39	-0.16	-0.34	-0.53	-0.23	-0.32	-0.20	-0.32	-0.39	**V16**
V17	0.06	0.28	-0.31	0.03	0.07	-0.44	-0.12	-0.09	-0.40	-0.15	-0.34	0.55	0.31	0.07	0.27	0.57	1.00	-0.07	-0.51	-0.30	-0.37	-0.39	-0.34	-0.25	0.14	0.29	-0.18	-0.41	-0.44	-0.14	-0.15	-0.12	-0.14	-0.42	**V17**
V18	0.33	-0.08	0.46	-0.46	-0.56	0.50	0.23	-0.25	0.33	0.66	0.43	-0.07	-0.44	-0.66	-0.17	-0.17	-0.07	1.00	0.04	-0.07	0.03	-0.03	0.01	0.71	-0.54	-0.74	0.67	0.04	0.32	0.67	0.40	0.33	0.24	0.14	**V18**
V19	-0.04	-0.25	0.18	-0.10	-0.11	0.38	0.12	-0.02	0.35	0.14	0.24	-0.44	-0.30	-0.14	-0.42	-0.38	-0.51	0.04	1.00	0.58	0.86	0.24	0.46	0.14	-0.09	-0.22	0.05	0.39	0.40	0.18	0.38	0.00	0.07	0.34	**V19**
V20	0.19	0.04	0.14	-0.14	0.17	0.15	-0.15	0.19	0.02	-0.05	0.39	-0.31	0.04	0.11	-0.30	-0.27	-0.30	-0.07	0.58	1.00	0.78	0.22	0.31	0.00	0.05	-0.07	-0.13	0.00	0.16	0.02	0.11	0.05	0.06	0.07	**V20**
V21	0.04	-0.10	0.17	-0.09	0.00	0.25	0.05	-0.01	0.19	0.09	0.33	-0.29	-0.13	-0.03	-0.41	-0.29	-0.37	0.03	0.86	0.78	1.00	0.23	0.42	0.09	-0.12	-0.19	0.00	0.20	0.29	0.17	0.32	0.00	0.07	0.15	**V21**
V22	0.17	-0.06	0.30	0.00	0.13	0.56	0.02	0.04	0.31	0.20	0.18	-0.51	-0.21	-0.05	-0.28	-0.37	-0.39	-0.03	0.24	0.22	0.23	1.00	0.13	0.48	-0.11	-0.28	0.04	0.25	0.55	0.23	0.24	0.16	0.58	0.15	**V22**
V23	-0.33	-0.53	0.01	0.38	-0.21	0.35	0.34	-0.32	0.34	0.00	0.07	-0.29	-0.32	0.01	-0.39	-0.31	-0.34	0.01	0.46	0.31	0.42	0.13	1.00	0.22	-0.22	-0.20	0.36	0.40	0.53	0.15	0.50	0.10	0.09	0.21	**V23**
V24	0.12	-0.39	0.42	-0.08	-0.37	0.78	0.47	-0.41	0.68	0.63	0.40	-0.28	-0.66	-0.60	-0.31	-0.34	-0.25	0.71	0.14	0.00	0.09	0.48	0.22	1.00	-0.65	-0.88	0.59	0.43	0.58	0.55	0.54	0.28	0.36	0.29	**V24**
V25	0.09	0.46	-0.04	-0.15	0.19	-0.41	-0.73	0.73	-0.58	-0.60	-0.31	-0.03	0.53	0.46	0.36	0.11	0.14	-0.54	-0.09	0.05	-0.12	-0.11	-0.22	-0.65	1.00	0.71	-0.47	-0.52	-0.31	-0.54	-0.53	-0.06	-0.08	-0.21	**V25**
V26	-0.14	0.38	-0.38	0.24	0.41	-0.70	-0.51	0.44	-0.78	-0.59	-0.61	0.22	0.77	0.74	0.31	0.39	0.29	-0.74	-0.22	-0.07	-0.19	-0.28	-0.20	-0.88	0.71	1.00	-0.65	-0.54	-0.55	-0.50	-0.54	-0.16	-0.20	-0.49	**V26**
V27	-0.07	-0.39	0.18	-0.05	-0.57	0.41	0.43	-0.45	0.46	0.24	0.28	0.06	-0.46	-0.42	-0.20	-0.16	-0.18	0.67	0.05	-0.13	0.00	0.04	0.36	0.59	-0.47	-0.65	1.00	0.33	0.50	0.37	0.41	0.19	0.14	0.26	**V27**
V28	-0.32	-0.62	-0.18	0.33	-0.03	0.40	0.70	-0.55	0.87	0.28	0.15	-0.20	-0.67	-0.32	-0.36	-0.34	-0.41	0.04	0.39	0.00	0.20	0.25	0.40	0.43	-0.52	-0.54	0.33	1.00	0.54	0.21	0.50	0.01	0.08	0.66	**V28**
V29	0.15	-0.25	0.35	-0.08	-0.29	0.72	0.21	-0.13	0.57	0.38	0.39	-0.60	-0.49	-0.29	-0.37	-0.53	-0.44	0.32	0.40	0.16	0.29	0.55	0.53	0.58	-0.31	-0.55	0.50	0.54	1.00	0.54	0.64	0.24	0.44	0.39	**V29**
V30	0.44	0.01	0.41	-0.27	-0.26	0.51	0.28	-0.25	0.28	0.89	0.32	-0.33	-0.25	-0.43	-0.36	-0.23	-0.14	0.67	0.18	0.02	0.17	0.23	0.15	0.55	-0.54	-0.50	0.37	0.21	0.54	1.00	0.59	0.35	0.49	0.14	**V30**
V31	-0.09	-0.33	0.09	0.08	-0.43	0.55	0.50	-0.55	0.55	0.52	0.19	-0.27	-0.54	-0.37	-0.31	-0.32	-0.15	0.40	0.38	0.11	0.32	0.24	0.50	0.54	-0.53	-0.54	0.41	0.50	0.64	0.59	1.00	0.25	0.27	0.22	**V31**
V32	0.08	0.06	0.24	-0.12	-0.20	0.24	-0.03	0.11	0.05	0.27	0.16	-0.32	-0.07	0.02	-0.01	-0.20	-0.12	0.33	0.00	0.05	0.00	0.16	0.10	0.28	-0.06	-0.16	0.19	0.01	0.24	0.35	0.25	1.00	0.55	0.08	**V32**
V33	0.27	0.07	0.31	-0.18	-0.03	0.34	-0.08	0.12	0.09	0.36	0.14	-0.39	-0.03	-0.06	-0.14	-0.32	-0.14	0.24	0.07	0.06	0.07	0.58	0.09	0.36	-0.08	-0.20	0.14	0.08	0.44	0.49	0.27	0.55	1.00	0.11	**V33**
V34	0.03	-0.35	-0.03	-0.10	-0.08	0.33	0.29	-0.19	0.65	0.17	0.35	-0.35	-0.47	-0.51	-0.24	-0.39	-0.42	0.14	0.34	0.07	0.15	0.15	0.21	0.29	-0.21	-0.49	0.26	0.66	0.39	0.14	0.22	0.08	0.11	1.00	**V34**
	V1	**V2**	**V3**	**V4**	**V5**	**V6**	**V7**	**V8**	**V9**	**V10**	**V11**	**V12**	**V13**	**V14**	**V15**	**V16**	**V17**	**V18**	**V19**	**V20**	**V21**	**V22**	**V23**	**V24**	**V25**	**V26**	**V27**	**V28**	**V29**	**V30**	**V31**	**V32**	**V33**	**V34**	

Figures highlighted thus [ ] indicate correlations of strong significance between the appropriate variables in the matrix; those highlighted thus [ ] indicate correlations of very strong significance

Age distribution	Children aged 0 to 4 years	**V1**
	Children aged 5 to 14 years	**V2**
	Young people aged 15 to 24 years	**V3**
	People aged 65 years and over	**V4**
Total Fertility Rate	Total Fertility Rate	**V5**
Families	Single parent families	**V6**
	Low income families	**V7**
	High income families	**V8**
	Jobless families	**V9**
Labour force	Unemployment	**V10**
	Unskilled and semi-skilled workers	**V11**
	Managers and administrators; professionals	**V12**
	Female labour force participation	**V13**
Education	Full-time participation in education at age 16	**V14**
	Average publicly examined achievement scores	**V15**
	Average publicly assessed achievement scores	**V16**
	Average school assessed achievement scores	**V17**

Aboriginal and Torres Strait Islander people	Aboriginal and Torres Strait Islander people	**V18**
NESB	Resident for five years or more	**V19**
	Resident for less than five years	**V20**
	Poor proficency in English	**V21**
Housing	Dwellings rented from the SA Housing Trust	**V22**
	Rent assistance	**V23**
Transport	Dwellings with no motor vehicle	**V24**
People who used the Internet at home	People who used the Internet at home	**V25**
ABS SEIFA	Index of Relative Socio-Economic Disadvantage	**V26**
Income support payments	Age pensioners	**V27**
	Disability support pensioners	**V28**
	Female sole parent pensioners	**V29**
	People receiving an unemployment benefit	**V30**
	Children in welfare-dependent/ low income families	**V31**
Perinatal	Low birthweight babies	**V32**
	High risk of poor pregnancy outcome	**V33**
	Terminations of pregnancy	**V34**

Table 8.2: Correlation matrix for SLAs in country South Australia
...cont

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	
V35	0.11	-0.02	0.11	-0.18	-0.22	0.16	0.05	-0.21	0.16	0.22	0.30	0.03	-0.23	-0.35	-0.07	-0.10	0.10	0.29	0.14	0.11	0.27	0.09	0.10	0.24	-0.41	-0.35	0.11	0.12	0.22	0.28	0.42	0.06	0.12	0.01	**V35**
V36	-0.24	0.05	-0.31	0.31	0.22	-0.36	-0.11	0.01	-0.23	-0.41	-0.34	0.40	0.25	0.30	0.29	0.29	0.35	-0.35	-0.69	-0.36	-0.57	-0.12	-0.23	-0.18	0.17	0.30	-0.18	-0.19	-0.36	-0.49	-0.37	-0.18	-0.11	-0.26	**V36**
V37	-0.16	-0.08	-0.10	0.20	0.18	0.07	0.20	-0.12	0.19	-0.05	0.16	0.04	-0.04	0.08	0.13	0.05	0.00	0.02	-0.23	-0.17	-0.16	0.14	-0.08	0.14	-0.24	-0.17	0.20	0.19	0.12	-0.02	-0.09	0.22	0.15	0.15	**V37**
V38	-0.01	0.12	0.15	0.01	-0.07	-0.09	0.01	0.00	-0.19	0.05	0.00	0.07	0.20	0.01	0.14	0.17	0.06	0.16	-0.07	-0.04	0.05	0.09	-0.10	0.09	-0.05	0.02	0.10	-0.20	0.00	0.13	-0.06	0.18	0.14	-0.21	**V38**
V39	-0.33	-0.01	-0.20	0.32	0.19	-0.25	0.03	0.05	-0.10	-0.44	-0.25	0.24	0.14	0.39	0.31	0.21	0.06	-0.37	-0.30	-0.17	-0.28	-0.07	-0.11	-0.18	0.19	0.25	-0.12	-0.08	-0.37	-0.55	-0.37	0.03	-0.23	-0.19	**V39**
V40	-0.04	-0.38	-0.03	-0.04	-0.31	0.10	0.24	-0.30	0.36	-0.01	0.24	0.07	-0.37	-0.49	-0.12	-0.13	-0.05	0.33	-0.16	-0.16	-0.15	0.10	0.10	0.36	-0.28	-0.47	0.56	0.30	0.24	0.07	0.14	0.06	0.15	0.42	**V40**
V41	0.02	-0.31	0.06	-0.23	-0.29	0.15	0.14	-0.31	0.41	0.24	0.27	-0.01	-0.44	-0.75	-0.07	-0.14	0.08	0.28	0.09	-0.09	0.04	0.10	0.01	0.35	-0.35	-0.50	0.18	0.33	0.18	0.16	0.37	-0.16	0.09	0.42	**V41**
V42	-0.03	-0.11	-0.19	-0.04	-0.27	-0.01	0.21	-0.34	0.13	-0.07	0.00	0.34	-0.18	-0.27	-0.06	0.07	0.23	0.35	-0.16	-0.03	-0.11	-0.15	0.09	0.24	-0.14	-0.27	0.46	-0.06	-0.07	0.00	0.15	0.14	-0.01	0.08	**V42**
V43	-0.22	-0.20	-0.14	0.12	-0.08	-0.27	0.02	-0.12	-0.06	-0.28	-0.05	0.24	0.11	-0.03	-0.01	0.11	0.08	-0.12	-0.21	-0.12	-0.18	-0.09	0.00	-0.14	0.05	0.05	0.17	0.08	-0.09	-0.22	-0.21	0.01	-0.05	0.16	**V43**
V44	0.06	0.04	0.02	0.04	0.04	0.22	0.35	-0.35	0.32	0.53	0.10	0.00	-0.26	-0.47	-0.21	0.07	0.15	0.49	0.07	0.03	0.14	0.16	-0.06	0.47	-0.42	-0.48	-0.08	0.17	0.03	0.49	0.34	0.12	0.18	-0.05	**V44**
V45	0.23	0.07	0.26	-0.12	0.10	0.29	0.19	-0.19	0.15	0.60	0.19	0.04	-0.05	-0.49	0.00	-0.07	-0.04	0.59	-0.11	0.06	-0.01	0.03	-0.10	0.42	-0.49	-0.41	-0.33	0.00	-0.02	0.56	0.12	0.12	0.11	-0.12	**V45**
V46	0.10	-0.30	0.28	-0.24	-0.49	0.52	0.41	-0.40	0.54	0.52	0.48	0.00	-0.59	-0.63	-0.21	-0.23	-0.13	0.84	0.03	-0.02	0.05	0.07	0.16	0.79	-0.65	-0.86	0.70	0.30	0.37	0.49	0.45	0.19	0.20	0.25	**V46**
V47	-0.14	-0.30	-0.11	0.19	0.05	0.45	0.40	-0.32	0.53	0.21	-0.04	-0.18	-0.46	-0.12	-0.34	-0.35	-0.24	0.19	0.11	-0.03	0.00	0.30	0.35	0.47	-0.35	-0.38	0.28	0.49	0.43	0.22	0.39	0.23	0.29	0.30	**V47**
V48	-0.07	-0.41	0.07	0.07	0.06	0.50	0.31	-0.15	0.71	0.04	0.42	-0.27	-0.52	-0.22	-0.23	-0.40	-0.40	0.09	0.34	0.31	0.31	0.43	0.28	0.46	-0.25	-0.57	0.31	0.65	0.53	0.01	0.28	0.11	0.15	0.54	**V48**
V49	0.30	-0.21	0.35	-0.26	-0.39	0.62	0.36	-0.35	0.51	0.72	0.39	-0.33	-0.47	-0.58	-0.41	-0.35	-0.26	0.73	0.40	0.14	0.34	0.30	0.32	0.70	-0.57	-0.69	0.58	0.42	0.69	0.84	0.71	0.32	0.49	0.36	**V49**
V50	-0.05	-0.27	-0.10	0.31	-0.05	-0.15	0.07	-0.15	-0.13	-0.16	0.08	0.14	0.17	0.12	0.08	0.04	0.06	0.03	-0.26	-0.07	-0.16	-0.07	0.34	0.01	-0.09	0.02	0.45	-0.01	0.21	0.09	0.09	-0.04	0.06	-0.14	**V50**
V51	0.11	0.05	0.03	-0.18	-0.22	-0.12	-0.16	-0.13	-0.14	0.11	0.00	0.11	0.03	-0.45	0.23	0.14	0.39	0.14	-0.09	-0.05	-0.03	-0.08	-0.16	0.03	-0.09	-0.03	-0.15	-0.21	-0.17	0.09	0.24	-0.18	-0.03	-0.10	**V51**
V52	0.00	0.01	-0.18	0.16	0.07	-0.26	-0.18	0.09	-0.30	-0.44	-0.09	0.24	0.39	0.23	0.17	0.17	0.05	-0.19	-0.17	-0.03	-0.08	-0.06	0.16	-0.20	0.20	0.23	0.19	-0.17	0.03	-0.20	-0.15	-0.21	-0.05	-0.08	**V52**
V53	0.07	-0.02	0.13	-0.04	-0.04	0.26	-0.18	0.16	0.02	-0.09	0.28	-0.31	-0.04	0.09	-0.08	-0.26	-0.18	0.04	0.15	0.11	0.14	0.14	0.02	0.09	0.10	-0.05	0.07	-0.02	0.27	0.00	0.07	-0.02	0.01	0.10	**V53**
V54	-0.09	-0.05	0.31	-0.06	-0.19	0.18	-0.24	0.28	-0.18	-0.03	0.24	-0.33	0.15	0.15	-0.06	-0.25	-0.31	0.11	0.24	0.15	0.14	-0.02	0.25	-0.01	0.13	0.07	0.04	-0.17	0.14	0.07	-0.03	0.19	0.04	-0.05	**V54**
V55	-0.02	0.22	0.26	-0.27	-0.13	-0.07	-0.28	0.34	-0.18	0.02	0.13	-0.15	0.14	0.09	0.18	0.04	-0.01	0.03	-0.02	-0.01	-0.02	-0.13	-0.25	-0.16	0.14	0.09	-0.14	-0.20	-0.10	-0.01	-0.14	0.26	-0.01	-0.12	**V55**
V56	-0.30	-0.18	-0.10	0.46	0.08	0.20	0.15	-0.07	0.08	-0.16	-0.33	-0.24	-0.02	0.43	-0.20	-0.20	-0.40	-0.30	0.25	0.06	0.11	0.28	0.52	-0.02	0.09	0.22	0.01	0.24	0.30	-0.07	0.19	0.17	0.08	-0.05	**V56**
V57	-0.27	-0.13	-0.13	0.46	0.08	0.13	0.15	-0.09	0.00	-0.13	-0.37	-0.18	0.06	0.42	-0.19	-0.13	-0.32	-0.27	0.15	-0.03	0.02	0.25	0.44	-0.06	0.08	0.27	0.02	0.18	0.24	-0.03	0.13	0.14	0.09	-0.08	**V57**
V58	-0.22	0.12	-0.22	0.23	0.08	-0.47	-0.37	0.28	-0.44	-0.64	-0.38	0.28	0.44	0.34	0.42	0.31	0.24	-0.48	-0.33	-0.20	-0.33	-0.20	-0.10	-0.46	0.58	0.56	-0.18	-0.36	-0.38	-0.60	-0.43	-0.21	-0.23	-0.23	**V58**
V59	0.28	-0.05	0.04	-0.09	-0.18	0.22	0.28	-0.30	0.21	0.38	0.24	-0.01	-0.11	-0.26	-0.20	-0.16	-0.04	0.51	0.00	-0.05	0.02	0.14	0.06	0.41	-0.32	-0.39	0.58	0.21	0.42	0.57	0.40	0.26	0.34	0.18	**V59**
V60	0.28	0.02	0.00	-0.06	-0.05	0.23	0.31	-0.32	0.24	0.45	0.21	-0.05	-0.06	-0.21	-0.27	-0.11	-0.03	0.37	0.06	0.00	0.11	0.28	-0.02	0.38	-0.38	-0.35	0.39	0.27	0.41	0.61	0.41	0.23	0.39	0.18	**V60**
V61	-0.07	-0.20	0.04	-0.03	-0.31	-0.06	-0.09	0.04	-0.06	-0.27	0.03	0.12	-0.15	-0.10	0.20	-0.10	-0.01	0.25	-0.17	-0.12	-0.23	-0.40	0.21	0.02	0.17	-0.06	0.42	-0.14	-0.02	-0.22	-0.09	0.04	-0.21	0.02	**V61**
V62	0.25	-0.03	-0.01	0.02	-0.08	0.19	0.25	-0.29	0.14	0.33	0.16	-0.01	-0.02	-0.10	-0.20	-0.13	-0.02	0.40	-0.05	-0.02	0.02	0.18	0.07	0.36	-0.28	-0.27	0.50	0.16	0.40	0.54	0.37	0.26	0.36	0.08	**V62**
V63	0.30	-0.07	0.09	-0.20	-0.28	0.24	0.28	-0.30	0.27	0.40	0.31	-0.01	-0.19	-0.41	-0.18	-0.17	-0.04	0.59	0.02	-0.07	0.02	0.10	0.03	0.45	-0.35	-0.48	0.63	0.23	0.41	0.57	0.39	0.25	0.30	0.27	**V63**
V64	-0.05	-0.17	-0.09	0.19	0.27	0.08	0.25	-0.15	0.23	0.20	-0.16	-0.15	-0.06	0.03	-0.18	-0.03	-0.28	-0.14	0.06	-0.11	-0.08	0.23	-0.03	0.09	-0.13	-0.04	-0.07	0.39	0.17	0.15	0.00	0.01	0.16	0.33	**V64**
V65	0.27	0.07	0.04	-0.09	0.02	0.02	-0.01	0.01	0.04	0.16	0.27	-0.21	0.15	-0.08	-0.03	-0.04	-0.11	0.05	-0.10	-0.01	-0.07	0.11	-0.11	0.01	0.00	-0.09	0.18	0.11	0.19	0.25	-0.01	0.16	0.24	0.37	**V65**
V66	0.13	0.06	-0.16	0.09	-0.10	-0.14	-0.08	-0.10	-0.23	0.00	-0.07	-0.01	0.18	0.01	0.05	0.05	0.27	-0.12	-0.12	-0.07	-0.05	0.04	0.05	-0.18	0.03	0.21	-0.07	-0.11	0.09	0.16	0.24	-0.12	0.08	-0.20	**V66**
V67	-0.07	-0.06	-0.19	0.13	0.24	0.00	0.08	-0.02	0.20	-0.01	0.05	-0.07	0.00	0.17	-0.15	-0.18	-0.23	-0.18	0.04	0.09	0.04	0.04	0.12	-0.04	0.02	0.01	-0.02	0.34	0.17	0.03	0.13	0.29	0.16	0.27	**V67**
V68	0.09	-0.12	-0.12	-0.01	-0.05	0.17	0.35	-0.23	0.33	0.33	0.00	-0.16	-0.27	-0.27	-0.24	-0.18	-0.09	0.17	0.11	-0.08	-0.04	-0.04	0.04	0.11	-0.21	-0.22	0.14	0.39	0.20	0.33	0.17	0.13	0.12	0.43	**V68**
	V1	**V2**	**V3**	**V4**	**V5**	**V6**	**V7**	**V8**	**V9**	**V10**	**V11**	**V12**	**V13**	**V14**	**V15**	**V16**	**V17**	**V18**	**V19**	**V20**	**V21**	**V22**	**V23**	**V24**	**V25**	**V26**	**V27**	**V28**	**V29**	**V30**	**V31**	**V32**	**V33**	**V34**	

Figures highlighted thus ▭ indicate correlations of strong significance between the appropriate variables in the matrix; those highlighted thus ■ indicate correlations of very strong significance

Age distribution	Children aged 0 to 4 years	**V1**
	Children aged 5 to 14 years	**V2**
	Young people aged 15 to 24 years	**V3**
	People aged 65 years and over	**V4**
Total Fertility Rate	Total Fertility Rate	**V5**
Families	Single parent families	**V6**
	Low income families	**V7**
	High income families	**V8**
	Jobless families	**V9**
Labour force	Unemployment	**V10**
	Unskilled and semi-skilled workers	**V11**
	Managers and administrators; professionals	**V12**
	Female labour force participation	**V13**
Education	Full-time participation in education at age 16	**V14**
	Average publicly examined achievement scores	**V15**
	Average publicly assessed achievement scores	**V16**
	Average school assessed achievement scores	**V17**

Aboriginal and Torres Strait Islander people	Aboriginal and Torres Strait Islander people	**V18**
NESB	Resident for five years or more	**V19**
	Resident for less than five years	**V20**
	Poor proficency in English	**V21**
Housing	Dwellings rented from the SA Housing Trust	**V22**
	Rent assistance	**V23**
Transport	Dwellings with no motor vehicle	**V24**
People who used the Internet at home	People who used the Internet at home	**V25**
ABS SEIFA	Index of Relative Socio-Economic Disadvantage	**V26**
Income support payments	Age pensioners	**V27**
	Disability support pensioners	**V28**
	Female sole parent pensioners	**V29**
	People receiving an unemployment benefit	**V30**
	Children in welfare-dependent/ low income families	**V31**
Perinatal	Low birthweight babies	**V32**
	High risk of poor pregnancy outcome	**V33**
	Terminations of pregnancy	**V34**

Table 8.2: Correlation matrix for SLAs in country South Australia
...cont

	V35	V36	V37	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51	V52	V53	V54	V55	V56	V57	V58	V59	V60	V61	V62	V63	V64	V65	V66	V67	V68	
V1	0.11	-0.24	-0.16	-0.01	-0.33	-0.04	0.02	-0.03	-0.22	0.06	0.23	0.10	-0.14	-0.07	0.30	-0.05	0.11	0.00	0.07	-0.09	-0.02	-0.30	-0.27	-0.22	0.28	0.28	-0.07	0.25	0.30	-0.05	0.27	0.13	0.09	0.09	**V1**
V2	-0.02	0.05	-0.08	0.12	-0.01	-0.38	-0.31	-0.11	-0.20	0.04	0.07	-0.30	-0.30	-0.41	-0.21	-0.27	0.05	0.01	-0.02	-0.05	0.22	-0.18	-0.13	0.12	-0.05	0.02	-0.20	-0.03	-0.07	-0.17	0.07	0.06	-0.12	-0.12	**V2**
V3	0.11	-0.31	-0.10	0.15	-0.20	-0.03	0.06	-0.19	-0.14	0.02	0.26	0.28	-0.11	0.07	0.35	-0.10	0.03	-0.18	0.13	0.31	0.26	-0.10	-0.13	-0.22	0.04	0.00	0.04	-0.01	0.09	-0.09	0.04	-0.16	-0.12	-0.12	**V3**
V4	-0.18	0.31	0.20	0.01	0.32	-0.04	-0.23	-0.04	0.12	0.04	-0.12	-0.24	0.19	0.07	-0.26	0.31	-0.18	0.16	-0.04	-0.06	-0.27	0.46	0.46	0.23	-0.09	-0.06	-0.03	0.02	-0.20	0.19	-0.09	0.09	-0.01	-0.01	**V4**
V5	-0.22	0.22	0.18	-0.07	0.19	-0.31	-0.29	-0.27	-0.08	0.04	0.10	-0.49	0.05	0.06	-0.39	-0.05	-0.22	0.07	-0.04	-0.19	-0.13	0.08	0.08	0.08	-0.18	-0.05	-0.31	-0.08	-0.28	0.27	0.02	-0.10	-0.05	-0.05	**V5**
V6	0.16	-0.36	0.07	-0.09	-0.25	0.10	0.15	-0.01	-0.27	0.22	0.29	0.52	0.45	0.50	0.62	-0.15	-0.12	-0.26	0.26	0.18	-0.07	0.20	0.13	-0.47	0.22	0.23	-0.06	0.19	0.24	0.08	0.02	-0.14	0.17	0.17	**V6**
V7	0.05	-0.11	0.20	0.01	0.03	0.24	0.14	0.21	0.02	0.35	0.19	0.41	0.40	0.31	0.36	0.07	-0.16	-0.18	-0.18	-0.24	-0.28	0.15	0.15	-0.37	0.28	0.31	-0.09	0.25	0.28	0.25	-0.01	-0.08	0.35	0.35	**V7**
V8	-0.21	0.01	-0.12	0.00	0.05	-0.30	-0.31	-0.34	-0.12	-0.35	-0.19	-0.40	-0.32	-0.15	-0.35	-0.15	-0.13	0.09	0.16	0.28	0.34	-0.07	-0.09	0.28	-0.30	-0.32	0.04	-0.29	-0.30	-0.15	0.01	-0.10	-0.23	-0.23	**V8**
V9	0.16	-0.23	0.19	-0.19	-0.10	0.36	0.41	0.13	-0.06	0.32	0.15	0.54	0.53	0.71	0.51	-0.13	-0.14	-0.30	0.02	-0.18	-0.18	0.08	0.00	-0.44	0.21	0.24	-0.06	0.14	0.27	0.23	0.04	-0.23	0.33	0.33	**V9**
V10	0.22	-0.41	-0.05	0.05	-0.44	-0.01	0.24	-0.07	-0.28	0.53	0.60	0.52	0.21	0.04	0.72	-0.16	0.11	-0.44	-0.09	-0.03	0.02	-0.16	-0.13	-0.64	0.38	0.45	-0.27	0.33	0.40	0.20	0.16	0.00	0.33	0.33	**V10**
V11	0.30	-0.34	0.16	0.00	-0.25	0.24	0.27	0.00	-0.05	0.10	0.19	0.48	-0.04	0.42	0.39	0.08	0.00	-0.09	0.28	0.24	0.13	-0.33	-0.37	-0.38	0.24	0.21	0.03	0.16	0.31	-0.16	0.27	-0.07	0.00	0.00	**V11**
V12	0.03	0.40	0.04	0.07	0.24	0.07	-0.01	0.34	0.24	0.00	0.04	0.00	-0.18	-0.27	-0.33	0.14	0.11	0.24	-0.31	-0.33	-0.15	-0.24	-0.18	0.28	-0.01	-0.05	0.12	-0.01	-0.01	-0.15	-0.21	-0.01	-0.16	-0.16	**V12**
V13	-0.23	0.25	-0.04	0.20	0.14	-0.37	-0.44	-0.18	0.11	-0.26	-0.05	-0.59	-0.46	-0.52	-0.47	0.17	0.03	0.39	-0.04	0.15	0.14	-0.02	0.06	0.44	-0.11	-0.06	-0.15	-0.02	-0.19	-0.06	0.15	0.18	-0.27	-0.27	**V13**
V14	-0.35	0.30	0.08	0.01	0.39	-0.49	-0.75	-0.27	-0.03	-0.47	-0.49	-0.63	-0.12	-0.22	-0.58	0.12	-0.45	0.23	0.09	0.15	0.09	0.43	0.42	0.34	-0.26	-0.21	-0.10	-0.10	-0.41	0.03	-0.08	0.01	-0.27	-0.27	**V14**
V15	-0.07	0.29	0.13	0.14	0.31	-0.12	-0.07	-0.06	-0.01	-0.21	0.00	-0.21	-0.34	-0.23	-0.41	0.08	0.23	0.17	-0.08	-0.06	0.18	-0.20	-0.19	0.42	-0.20	-0.27	0.20	-0.20	-0.18	-0.18	-0.03	0.05	-0.24	-0.24	**V15**
V16	-0.10	0.29	0.05	0.17	0.21	-0.13	-0.14	0.07	0.11	0.07	-0.07	-0.23	-0.35	-0.40	-0.35	0.04	0.14	0.17	-0.26	-0.25	0.04	-0.20	-0.13	0.31	-0.16	-0.11	-0.10	-0.13	-0.17	-0.03	-0.04	0.05	-0.18	-0.18	**V16**
V17	0.10	0.35	0.00	0.06	0.06	-0.05	0.08	0.23	0.08	0.15	-0.04	-0.13	-0.24	-0.40	-0.26	0.06	0.39	0.05	-0.18	-0.31	-0.01	-0.40	-0.32	0.24	-0.04	-0.03	-0.01	-0.02	-0.04	-0.28	-0.11	0.27	-0.09	-0.09	**V17**
V18	0.29	-0.35	0.02	0.16	-0.37	0.33	0.28	0.35	-0.12	0.49	0.59	0.84	0.19	0.09	0.73	0.03	0.14	-0.19	0.04	0.11	0.03	-0.30	-0.27	-0.48	0.51	0.37	0.25	0.40	0.59	-0.14	0.05	-0.12	0.17	0.17	**V18**
V19	0.14	-0.69	-0.23	-0.07	-0.30	-0.16	0.09	-0.16	-0.21	0.07	-0.11	0.03	0.11	0.34	0.40	-0.26	-0.09	-0.17	0.15	0.24	-0.02	0.25	0.15	-0.33	0.00	0.06	-0.17	-0.05	0.02	0.06	-0.10	-0.12	0.11	0.11	**V19**
V20	0.11	-0.36	-0.17	-0.04	-0.17	-0.16	-0.09	-0.03	-0.12	0.03	0.06	-0.02	-0.03	0.31	0.14	-0.07	-0.05	-0.03	0.11	0.15	-0.01	0.06	-0.03	-0.20	-0.05	0.00	-0.12	-0.02	-0.07	-0.11	-0.01	-0.07	-0.08	-0.08	**V20**
V21	0.27	-0.57	-0.16	0.05	-0.28	-0.15	0.04	-0.11	-0.18	0.14	-0.01	0.05	0.00	0.31	0.34	-0.16	-0.03	-0.08	0.14	0.14	-0.02	0.11	0.02	-0.33	0.02	0.11	-0.23	0.02	0.02	-0.08	-0.07	-0.05	-0.04	-0.04	**V21**
V22	0.09	-0.12	0.14	0.09	-0.07	0.10	0.10	-0.15	-0.09	0.16	0.03	0.07	0.30	0.43	0.30	-0.07	-0.08	-0.06	0.14	-0.02	-0.13	0.28	0.25	-0.20	0.14	0.28	-0.40	0.18	0.10	0.23	0.11	0.04	-0.04	-0.04	**V22**
V23	0.10	-0.23	-0.08	-0.10	-0.11	0.10	0.01	0.09	0.00	-0.06	-0.10	0.16	0.35	0.28	0.32	0.34	-0.16	0.16	0.02	0.25	-0.25	0.52	0.44	-0.10	0.06	-0.02	0.21	0.07	0.03	-0.03	-0.11	0.05	0.04	0.04	**V23**
V24	0.24	-0.18	0.14	0.09	-0.18	0.36	0.35	0.24	-0.14	0.47	0.42	0.79	0.47	0.46	0.70	0.01	0.03	-0.20	0.09	-0.01	-0.16	-0.02	-0.06	-0.46	0.41	0.38	0.02	0.36	0.45	0.09	0.01	-0.18	0.11	0.11	**V24**
V25	-0.41	0.17	-0.24	-0.05	0.19	-0.28	-0.35	-0.14	0.05	-0.42	-0.49	-0.65	-0.35	-0.25	-0.57	-0.09	-0.09	0.20	0.10	0.13	0.14	0.09	0.08	0.58	-0.32	-0.38	0.17	-0.28	-0.35	-0.13	0.00	0.03	-0.21	-0.21	**V25**
V26	-0.35	0.30	-0.17	0.02	0.25	-0.47	-0.50	-0.27	0.05	-0.48	-0.41	-0.86	-0.38	-0.57	-0.69	0.02	-0.03	0.23	-0.05	0.07	0.09	0.22	0.27	0.56	-0.39	-0.35	-0.06	-0.27	-0.48	-0.04	-0.09	0.21	-0.22	-0.22	**V26**
V27	0.11	-0.18	0.20	0.10	-0.12	0.56	0.18	0.46	0.17	-0.08	-0.33	0.70	0.28	0.31	0.58	0.45	-0.15	0.19	0.07	0.04	-0.14	0.01	0.02	-0.18	0.58	0.39	0.42	0.50	0.63	-0.07	0.18	-0.07	0.14	0.14	**V27**
V28	0.12	-0.19	0.19	-0.20	-0.08	0.30	0.33	-0.06	0.08	0.17	0.00	0.30	0.49	0.65	0.42	-0.01	-0.21	-0.17	-0.02	-0.17	-0.20	0.24	0.18	-0.36	0.21	0.27	-0.14	0.16	0.23	0.39	0.11	-0.11	0.39	0.39	**V28**
V29	0.22	-0.36	0.12	0.00	-0.37	0.24	0.18	-0.07	-0.09	0.03	-0.02	0.37	0.43	0.53	0.69	0.21	-0.17	0.03	0.27	0.14	-0.10	0.30	0.24	-0.38	0.42	0.41	-0.02	0.40	0.41	0.17	0.19	0.09	0.20	0.20	**V29**
V30	0.28	-0.49	-0.02	0.13	-0.55	0.07	0.16	0.00	-0.22	0.49	0.56	0.49	0.22	0.01	0.84	0.09	0.09	-0.20	0.00	0.07	-0.01	-0.07	-0.03	-0.60	0.57	0.61	-0.22	0.54	0.57	0.15	0.25	0.16	0.33	0.33	**V30**
V31	0.42	-0.37	-0.09	-0.06	-0.37	0.14	0.37	0.15	-0.21	0.34	0.12	0.45	0.39	0.28	0.71	0.09	0.24	-0.15	0.07	-0.03	-0.14	0.19	0.13	-0.43	0.40	0.41	-0.09	0.37	0.39	0.00	-0.01	0.24	0.17	0.17	**V31**
V32	0.06	-0.18	0.22	0.18	0.03	0.06	-0.16	0.14	0.01	0.12	0.12	0.19	0.23	0.11	0.32	-0.04	-0.18	-0.21	-0.02	0.19	0.26	0.17	0.14	-0.21	0.26	0.23	0.04	0.26	0.25	0.01	0.16	-0.12	0.13	0.13	**V32**
V33	0.12	-0.11	0.15	0.14	-0.23	0.15	0.09	-0.01	-0.05	0.18	0.11	0.20	0.29	0.15	0.49	0.06	-0.03	-0.05	0.01	0.04	-0.01	0.08	0.09	-0.23	0.34	0.39	-0.21	0.36	0.30	0.16	0.24	0.08	0.12	0.12	**V33**
V34	0.01	-0.26	0.15	-0.21	-0.19	0.42	0.42	0.08	0.16	-0.05	-0.12	0.25	0.30	0.54	0.36	-0.14	-0.10	-0.08	0.10	-0.05	-0.12	-0.05	-0.08	-0.23	0.18	0.18	0.02	0.08	0.27	0.33	0.37	-0.20	0.43	0.43	**V34**
	V35	**V36**	**V37**	**V38**	**V39**	**V40**	**V41**	**V42**	**V43**	**V44**	**V45**	**V46**	**V47**	**V48**	**V49**	**V50**	**V51**	**V52**	**V53**	**V54**	**V55**	**V56**	**V57**	**V58**	**V59**	**V60**	**V61**	**V62**	**V63**	**V64**	**V65**	**V66**	**V67**	**V68**	

Figures highlighted thus [ ] indicate correlations of strong significance between the appropriate variables in the matrix; those highlighted thus [ ] indicate correlations of very strong significance

Perinatal *cont.*	Smoking during pregnancy	**V35**
Immunisation	Immunisation status at 12 months of age	**V36**
Overweight and obesity in childhood	Overweight (not obese) four year old boys	**V37**
	Obese four year old boys	**V38**
Dental health	Decayed, missing or filled teeth, 12 year olds	**V39**
Cancer incidence	All cancers	**V40**
	Lung cancer	**V41**
	Female breast cancer	**V42**
	Prostate cancer	**V43**
Premature mortality	Deaths of males aged 15 to 64 years	**V44**
	Deaths of females aged 15 to 64 years	**V45**
Avoidable mortality	Avoidable mortality	**V46**
Community based services	Community mental health services	**V47**
	Child and Adolescent Mental Health Services	**V48**
	Clients of the Department for Families and Communities	**V49**
Screening services	Breast screening participation	**V50**
	Breast cancer detected through screening	**V51**

Screening services *cont.*	Cervical screening participation	**V52**
	Cervical screening outcomes: High grade abnormality	**V53**
	Cervical screening outcomes: Low grade abnormality	**V54**
General medical practitioners	Population per GP	**V55**
	GP services - males	**V56**
	GP services - females	**V57**
Private health insurance	Private health insurance	**V58**
Hospital admissions	Total admissions	**V59**
	Public acute hospitals	**V60**
	Private hospitals	**V61**
	Admissions of males	**V62**
	Admissions of females	**V63**
	Tonsillectomy	**V64**
	Myringotomy	**V65**
	Caesarean section	**V66**
	Hysterectomy	**V67**
Hospital booking lists	People waiting for more than six months	**V68**

Table 8.2: Correlation matrix for SLAs in country South Australia
...cont

	V35	V36	V37	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51	V52	V53	V54	V55	V56	V57	V58	V59	V60	V61	V62	V63	V64	V65	V66	V67	V68	
V35	1.00	-0.13	-0.01	-0.13	-0.29	0.11	0.52	0.02	-0.10	0.14	0.27	0.36	0.05	0.13	0.40	-0.02	0.48	-0.07	-0.10	-0.08	-0.07	-0.17	-0.19	-0.40	0.11	0.16	-0.17	0.03	0.17	-0.18	-0.06	0.33	-0.03	-0.03	**V35**
V36	-0.13	1.00	0.16	-0.15	0.41	0.08	-0.06	0.08	0.23	-0.13	0.00	-0.19	-0.02	-0.14	-0.53	0.18	0.07	0.24	-0.09	-0.17	-0.09	-0.06	-0.01	0.43	-0.21	-0.23	0.10	-0.13	-0.25	0.02	-0.10	0.13	-0.29	-0.29	**V36**
V37	-0.01	0.16	1.00	0.26	0.32	0.19	-0.13	0.09	0.11	-0.06	0.04	0.12	0.25	0.31	-0.04	0.10	-0.24	0.08	-0.01	-0.12	0.06	-0.10	-0.06	-0.16	0.20	0.24	-0.11	0.18	0.20	0.01	0.12	-0.19	0.07	0.07	**V37**
V38	-0.13	-0.15	0.26	1.00	0.09	0.16	-0.21	0.17	0.00	0.24	0.10	0.07	-0.07	-0.18	0.09	0.05	-0.04	0.08	-0.08	0.01	0.16	0.03	0.08	-0.04	0.25	0.28	-0.14	0.22	0.25	-0.10	-0.07	-0.08	-0.10	-0.10	**V38**
V39	-0.29	0.41	0.32	0.09	1.00	-0.12	-0.38	0.19	-0.01	-0.07	-0.34	-0.28	-0.08	0.01	-0.58	-0.07	-0.11	0.03	-0.16	-0.13	0.03	0.15	0.16	0.39	-0.27	-0.30	0.14	-0.25	-0.27	-0.24	-0.19	-0.23	-0.32	-0.32	**V39**
V40	0.11	0.08	0.19	0.16	-0.12	1.00	0.52	0.53	0.54	-0.12	-0.24	0.46	0.21	0.32	0.28	0.24	0.05	0.14	-0.04	-0.16	-0.18	-0.20	-0.19	-0.09	0.35	0.26	0.21	0.25	0.43	-0.01	0.20	-0.02	0.20	0.20	**V40**
V41	0.52	-0.06	-0.13	-0.21	-0.38	0.52	1.00	0.22	0.16	0.22	0.12	0.42	0.09	0.21	0.34	-0.08	0.61	-0.12	-0.16	-0.34	-0.13	-0.43	-0.45	-0.24	0.07	0.10	-0.07	-0.06	0.19	-0.03	0.01	0.15	0.10	0.10	**V41**
V42	0.02	0.08	0.09	0.17	0.19	0.53	0.22	1.00	0.13	0.16	-0.10	0.37	0.13	0.01	0.14	0.18	0.27	0.13	-0.19	-0.20	-0.24	-0.16	-0.16	0.13	0.34	0.20	0.33	0.27	0.40	-0.42	-0.06	-0.03	-0.01	-0.01	**V42**
V43	-0.10	0.23	0.11	0.00	-0.01	0.54	0.16	0.13	1.00	-0.20	-0.32	-0.05	0.01	0.06	-0.14	0.15	-0.16	0.10	-0.07	0.05	-0.05	-0.06	0.00	0.13	0.05	-0.01	0.16	0.05	0.05	0.11	0.20	-0.04	0.18	0.18	**V43**
V44	0.14	-0.13	-0.06	0.24	-0.07	-0.12	0.22	0.16	-0.20	1.00	0.34	0.60	0.25	0.04	0.39	-0.36	0.40	-0.42	-0.05	-0.10	-0.04	-0.04	-0.05	-0.21	0.24	0.34	-0.33	0.25	0.23	0.03	-0.17	0.01	0.12	0.12	**V44**
V45	0.27	0.00	0.04	0.10	-0.34	-0.24	0.12	-0.10	-0.32	0.34	1.00	0.62	0.12	-0.05	0.35	-0.24	0.38	-0.17	-0.18	0.09	0.03	-0.20	-0.21	-0.39	-0.03	0.11	-0.33	0.02	-0.05	0.14	-0.20	-0.16	0.04	0.04	**V45**
V46	0.36	-0.19	0.12	0.07	-0.28	0.46	0.42	0.37	-0.05	0.60	0.62	1.00	0.34	0.36	0.64	0.09	0.08	-0.11	0.03	0.00	-0.08	-0.24	-0.27	-0.42	0.43	0.32	0.22	0.34	0.50	-0.13	-0.03	-0.17	0.10	0.10	**V46**
V47	0.05	-0.02	0.25	-0.07	-0.08	0.21	0.09	0.13	0.01	0.25	0.12	0.34	1.00	0.40	0.38	0.02	-0.23	-0.05	0.04	-0.03	-0.18	0.27	0.20	-0.32	0.21	0.20	0.03	0.22	0.18	0.25	-0.12	-0.16	0.43	0.43	**V47**
V48	0.13	-0.14	0.31	-0.18	0.01	0.32	0.21	0.01	0.06	0.04	-0.05	0.36	0.40	1.00	0.30	-0.01	-0.31	-0.05	0.24	-0.06	-0.08	0.05	-0.04	-0.29	0.15	0.17	-0.03	0.12	0.17	0.16	0.08	-0.29	0.08	0.08	**V48**
V49	0.40	-0.53	-0.04	0.09	-0.58	0.28	0.34	0.14	-0.14	0.39	0.35	0.64	0.38	0.30	1.00	0.13	0.07	-0.09	0.11	0.10	-0.18	0.02	0.02	-0.60	0.63	0.63	-0.08	0.56	0.67	0.14	0.19	0.08	0.33	0.33	**V49**
V50	-0.02	0.18	0.10	0.05	-0.07	0.24	-0.08	0.18	0.15	-0.36	-0.24	0.09	0.02	-0.01	0.13	1.00	-0.12	0.67	1.00	1.00	-0.23	0.12	0.14	0.23	0.44	0.28	0.33	0.48	0.38	-0.05	0.25	0.30	-0.10	-0.10	**V50**
V51	0.48	1.00	-0.24	-0.04	-0.11	0.05	0.61	0.27	-0.16	0.40	0.38	0.08	-0.23	-0.31	0.07	-0.12	1.00	-0.04	-0.25	-0.35	-0.12	-0.35	-0.31	0.04	-0.07	-0.05	-0.07	-0.14	0.00	-0.29	-0.17	0.39	-0.20	-0.20	**V51**
V52	-0.07	0.24	0.08	0.08	0.03	0.14	-0.12	0.13	0.10	-0.42	-0.17	-0.11	-0.05	-0.05	-0.09	0.67	-0.04	1.00	0.03	-0.05	-0.39	0.17	0.18	0.50	0.23	0.12	0.26	0.28	0.18	0.04	0.14	0.05	-0.27	-0.27	**V52**
V53	-0.10	-0.09	-0.01	-0.08	-0.16	-0.04	-0.16	-0.19	-0.07	-0.05	-0.18	0.03	0.04	0.24	0.11	0.06	-0.25	0.03	1.00	0.43	0.04	0.00	-0.01	-0.08	0.07	0.02	0.10	0.13	0.00	-0.05	0.15	0.02	-0.06	-0.06	**V53**
V54	-0.08	-0.17	-0.12	0.01	-0.13	-0.16	-0.34	-0.20	0.05	-0.10	0.09	0.00	-0.03	-0.06	0.10	0.05	-0.35	-0.05	0.43	1.00	0.19	0.21	0.20	-0.08	-0.01	-0.07	0.13	0.01	-0.03	-0.14	0.03	-0.08	-0.01	-0.01	**V54**
V55	-0.07	-0.09	0.06	0.16	0.03	-0.18	-0.13	-0.24	-0.05	-0.04	0.03	-0.08	-0.18	-0.08	-0.18	-0.23	-0.12	-0.39	0.04	0.19	1.00	-0.33	-0.37	-0.21	-0.33	-0.29	-0.09	-0.33	-0.31	-0.09	-0.05	-0.17	-0.12	-0.12	**V55**
V56	-0.17	-0.06	-0.10	0.03	0.15	-0.20	-0.43	-0.16	-0.06	-0.04	-0.20	-0.24	0.27	0.05	0.02	0.12	-0.35	0.17	0.00	0.21	-0.33	1.00	0.96	0.24	0.06	0.03	0.08	0.14	-0.03	0.23	-0.14	0.05	-0.02	-0.02	**V56**
V57	-0.19	-0.01	-0.06	0.08	0.16	-0.19	-0.45	-0.16	0.00	-0.05	-0.21	-0.27	0.20	-0.04	0.02	0.14	-0.31	0.18	-0.01	0.20	-0.37	0.96	1.00	0.23	0.14	0.11	0.07	0.20	0.05	0.23	-0.07	0.13	0.01	0.01	**V57**
V58	-0.40	0.43	-0.16	-0.04	0.39	-0.09	-0.24	0.13	0.13	-0.21	-0.39	-0.42	-0.32	-0.29	-0.60	0.23	0.04	0.50	-0.08	-0.08	-0.21	0.24	0.23	1.00	-0.22	-0.35	0.38	-0.14	-0.27	-0.11	-0.06	0.01	-0.35	-0.35	**V58**
V59	0.11	-0.21	0.20	0.25	-0.27	0.35	0.07	0.34	0.05	0.24	-0.03	0.43	0.21	0.15	0.63	0.44	-0.07	0.23	0.07	-0.01	-0.33	0.06	0.14	-0.22	1.00	0.92	0.07	0.96	0.97	0.03	0.43	0.26	0.28	0.28	**V59**
V60	0.16	-0.23	0.24	0.28	-0.30	0.26	0.10	0.20	-0.01	0.34	0.11	0.32	0.20	0.17	0.63	0.28	-0.05	0.12	0.02	-0.07	-0.29	0.03	0.11	-0.35	0.92	1.00	-0.32	0.89	0.89	0.11	0.44	0.30	0.30	0.30	**V60**
V61	-0.17	0.10	-0.11	-0.14	0.14	0.21	-0.07	0.33	0.16	-0.33	-0.33	0.22	0.03	-0.03	-0.08	0.33	-0.07	0.26	0.10	0.13	-0.09	0.08	0.07	0.38	0.07	-0.32	1.00	0.05	0.09	-0.20	-0.09	-0.16	-0.07	-0.07	**V61**
V62	0.03	-0.13	0.18	0.22	-0.25	0.25	-0.06	0.27	0.05	0.25	0.02	0.34	0.22	0.12	0.56	0.48	-0.14	0.28	0.13	0.01	-0.33	0.14	0.20	-0.14	0.96	0.89	0.05	1.00	0.86	0.08	0.42	0.26	0.24	0.24	**V62**
V63	0.17	-0.25	0.20	0.25	-0.27	0.43	0.19	0.40	0.05	0.23	-0.05	0.50	0.18	0.17	0.67	0.38	0.00	0.18	0.00	-0.03	-0.31	-0.03	0.05	-0.27	0.97	0.89	0.09	0.86	1.00	-0.02	0.41	0.23	0.30	0.30	**V63**
V64	-0.18	0.02	0.01	-0.10	-0.24	-0.01	-0.03	-0.42	0.11	0.03	0.14	-0.13	0.25	0.16	0.14	-0.05	-0.29	0.04	-0.05	-0.14	-0.09	0.23	0.23	-0.11	0.03	0.11	-0.20	0.08	-0.02	1.00	0.25	-0.18	0.13	0.33	**V64**
V65	-0.06	-0.10	0.12	-0.07	-0.19	0.20	0.01	-0.06	0.20	-0.17	-0.20	-0.03	-0.12	0.08	0.19	0.25	-0.17	0.14	0.15	0.03	-0.05	-0.14	-0.07	-0.06	0.43	0.44	-0.09	0.42	0.41	0.25	1.00	0.21	0.24	0.25	**V65**
V66	0.33	0.13	-0.19	-0.08	-0.23	-0.02	0.15	-0.03	-0.04	0.01	-0.16	-0.17	-0.16	-0.29	0.08	0.30	0.39	0.05	0.02	-0.08	-0.17	0.05	0.13	0.01	0.26	0.30	-0.16	0.26	0.23	-0.18	0.21	1.00	-0.04	0.09	**V66**
V67	-0.10	0.04	0.24	-0.12	0.15	0.00	-0.07	0.09	0.07	0.08	0.05	-0.06	0.21	0.26	0.04	0.02	-0.23	0.01	-0.14	-0.03	-0.07	0.26	0.20	0.05	0.23	0.27	-0.13	0.25	0.18	0.13	0.24	-0.04	1.00	0.07	**V67**
V68	-0.03	-0.29	0.07	-0.10	-0.32	0.20	0.10	-0.01	0.18	0.12	0.04	0.10	0.43	0.08	1.00	-0.10	-0.20	-0.27	-0.06	-0.01	-0.12	-0.02	0.01	-0.35	0.28	0.30	-0.07	0.24	0.30	0.33	0.25	0.09	0.07	1.00	**V68**
	V35	**V36**	**V37**	**V38**	**V39**	**V40**	**V41**	**V42**	**V43**	**V44**	**V45**	**V46**	**V47**	**V48**	**V49**	**V50**	**V51**	**V52**	**V53**	**V54**	**V55**	**V56**	**V57**	**V58**	**V59**	**V60**	**V61**	**V62**	**V63**	**V64**	**V65**	**V66**	**V67**	**V68**	

Figures highlighted thus ▭ indicate correlations of strong significance between the appropriate variables in the matrix; those highlighted thus ▭ indicate correlations of very strong significance

Perinatal *cont.*	Smoking during pregnancy	**V35**
Immunisation	Immunisation status at 12 months of age	**V36**
Overweight and obesity in childhood	Overweight (not obese) four year old boys	**V37**
	Obese four year old boys	**V38**
Dental health	Decayed, missing or filled teeth, 12 year olds	**V39**
Cancer incidence	All cancers	**V40**
	Lung cancer	**V41**
	Female breast cancer	**V42**
	Prostate cancer	**V43**
Premature mortality	Deaths of males aged 15 to 64 years	**V44**
	Deaths of females aged 15 to 64 years	**V45**
Avoidable mortality	Avoidable mortality	**V46**
Community based services	Community mental health services	**V47**
	Child and Adolescent Mental Health Services	**V48**
	Clients of the Department for Families and Communities	**V49**
Screening services	Breast screening participation	**V50**
	Breast cancer detected through screening	**V51**

Screening services *cont.*	Cervical screening participation	**V52**
	Cervical screening outcomes: High grade abnormality	**V53**
	Cervical screening outcomes: Low grade abnormality	**V54**
General medical practitioners	Population per GP	**V55**
	GP services - males	**V56**
	GP services - females	**V57**
Private health insurance	Private health insurance	**V58**
Hospital admissions	Total admissions	**V59**
	Public acute hospitals	**V60**
	Private hospitals	**V61**
	Admissions of males	**V62**
	Admissions of females	**V63**
	Tonsillectomy	**V64**
	Myringotomy	**V65**
	Caesarean section	**V66**
	Hysterectomy	**V67**
Hospital booking lists	People waiting for more than six months	**V68**

9 Summary of trends

Introduction

This chapter provides a summary of variations in the indicators for the whole population and by groupings of the population, based on their socioeconomic status, in order to show the extent of any inequality in geographic distribution. Socioeconomic status is based on the Index of Relative Socio-Economic Disadvantage.

Thus, data are provided to show both absolute and relative change. For example, despite an overall decline of 28.0% in male death rates at ages 15 to 64 years in country South Australia, there was an increase in inequality, with the rate ratio increasing from 1.28* in 1989-93 to 1.87** in 1999-2002. This shows that, although there was an absolute decline in rates of premature death for males in country South Australia, the relative position of the most disadvantaged 20% of the population worsened. In comparison, although there was a similar overall decline for males in Metropolitan Adelaide, the rate ratio increased only slightly, from 1.88** to 1.90**. For further discussion about relative and absolute change, see the PHIDU website: http://www.publichealth.gov.au .

The reference period for the data in the comparisons varies according to the dataset. For example, a majority of the Census variables are available for the 2001 Census as shown in Chapter 4, and the 1986 Census, as presented in the first edition of the Atlas (for country South Australia the comparison is with 1991, as not all data were available to produce the population groups shown in this chapter). Information on jobless families and Internet use at home was first collected in the 2001 Census, and consequently data cannot be produced for earlier Censuses.

It should be noted that, while the rate or proportion for some indicators is shown as having increased, the increase may not be consistent over the whole period shown. For example, the overall increase in the female labour force participation in Metropolitan Adelaide of 3.6% is comprised of a larger increase from 1986 to 1991, followed by a decline to 1996, and a further decline to 2001.

Measure of inequality

In order to summarise the extent of social and health inequality shown in the maps in the earlier chapters, the indicators are presented in chart form on the following pages.

The data have been calculated to show the average rate (or percentage or standardised ratio) by socioeconomic status of the SLA of the address of residence of the person about whom the event is recorded (SLA of the deceased, the person admitted to hospital, etc). To do this, each SLA in Metropolitan Adelaide (including Gawler, to allow comparison with earlier data) was allocated to one of five categories (quintiles) based on its Index of Relative Socio-Economic Disadvantage (IRSD) score. Quintile 1 comprises (approximately) twenty per cent of the population living in the SLAs in Metropolitan Adelaide with the highest IRSD scores, and Quintile 5 comprises the twenty per cent of the population in SLAs with the lowest IRSD scores. The average rate (or standardised ratio or percentage) was then calculated for each of the five quintiles. For example, the average female death rate was calculated for the most advantaged SLAs (Quintile 1), for the most disadvantaged SLAs (Quintile 5) and for each of the intervening quintiles (Quintiles 2 to 4). These rates were then graphed.

This exercise was repeated for SLAs in country South Australia (excluding Gawler).

Results

Change in socioeconomic status

Metropolitan Adelaide: Chapters 4 and 5

The change in the indicators in Table 9.1 highlights aspects of the widely recognised demographic and socioeconomic trends occurring in the State. Of note in Metropolitan Adelaide (Table 9.1) are the sizeable increases over a 15-year period in the number of people aged 65 years and over, the number of single parent and low income families and the number of people identifying in the Population Census as being of Aboriginal or Torres Strait Islander origin. Also of note, over the 12 years from 1992 to 2004, are the increases in numbers of disability support and female sole parent pensioners.

The largest declines over the 15 years from 1986 are in people recorded in the Census as being unemployed and the number of unskilled and semi-skilled workers. Although the decline in the number of dwellings rented from the SA Housing Trust is relatively low, at 6.3% over 15 years, it is particularly important, as it has occurred at a time of overall growth in the size of the welfare-dependent population, who have traditionally been a major part of the client group for public housing.

There was a very large decline in the number of people receiving an unemployment benefit; at the same time, there was an increase in inequality associated with this decline (Table 9.2). The decline of 48.3% in unemployment beneficiaries should also be considered in light of the 39.6% increase in the number of people on a Disability Support Pension (DSP). In 1992, the DSP

numbers were just over half those of unemployment beneficiaries; yet by 2004, DSP numbers were almost 50% higher. There was also a decline in the rate of age pensioners (despite a small increase in their number); in this case inequality increased (Table 9.2).

The small decline in the Total Fertility Rate is reflected in the decline in the number of 0 to 4 year old children.

Of note is that in 2004, there were a total of 82,908 people in receipt of a disability or unemployment payment (Table 9.1), 11.5% of the population aged 15 to 64 years for males and 15 to 59 years for females; a further 24,423 females were receiving a sole parent pension, giving a total of 14.9% of the population group described receiving one of these welfare payments. That is, one in seven people at these ages was reliant on welfare benefits: this does not include their dependants, or other low income families who receive an income from employment.

Table 9.1: Change in demographic and socioeconomic status indicators, Metropolitan Adelaide

Indicator	Number		% change	
Chapter 4	**1986 (1991)**	**2001**	**No.[1]**	**Rate/%[2]**
0 to 4 year old children	67,574	64,654	-4.3	-13.1
5 to 14 year old children	138,685	139,170	0.3	-8.8
15 to 24 year old young people	171,961	152,002	-11.6	-19.7
65 years & over	121,140	163,345	34.8	22.5
Total fertility rate (1991)	(1.68)	1.62	..	(-3.6)
Single parent families	21,640	33,390	54.3	43.3
Low income families	46,667	65,381	40.1	17.2
Unemployed people	43,706	39,776	-9.0	-51.6
Unskilled & semi-skilled workers	89,511	79,368	-11.3	-21.2
Female labour force participation (20 to 54 years)	154,228	191,194	24.0	3.6
Educational participation at age 16 years	11,492	11,931	(3.8)	(5.3)
Aboriginal & Torres Strait Islander people	5,825	11,047	89.6	72.9
People born overseas[3], resident in Australia for five years or more	(103,071)	114,594	11.2	1.8
People born overseas[3], resident in Australia for less than five years	(15,575)	13,502	-13.3	-21.3
Poor proficiency in English[3]	(24,488)	23,526	(-3.9)	-13.7
SA Housing Trust rented dwellings	36,734	34,394	-6.4	-23.7
Dwellings without a motor vehicle	46,146	46,738	1.3	-17.2
Chapter 5	**1992**	**2004**	**No.[1]**	**Rate/%[2]**
Age pensioners	134,047	136,319	1.7	-17.5
Disability support pensioners	30,613	49,156	60.6	39.6
Female sole parent pensioners	18,006	24,423	35.6	24.6
Unemployment beneficiaries (includes CDEP)	58,352	33,752	-42.2	-48.3
Children in welfare-dependent and other low income families[4]	84,453	86,162	2.0	6.9

[1]Percentage change in the numbers shown from 1986 (1991) to 2001 (Chapter 4) or 1992 to 2004 (Chapter 5)
[2]Percentage change in the rate or proportion from 1986 (1991) to 2001 (Chapter 4) or 1992 to 2004 (Chapter 5)
[3]Includes only people who were born in a predominantly non-English speaking country
[4]Excludes children in families under CDEP

Note: See referenced chapter for data definitions

Country South Australia: Chapters 4 and 5

In country South Australia (Table 9.2), the declines and increases are generally more pronounced (and over a shorter period) than those in Metropolitan Adelaide. There were smaller increases in country South Australia compared to Metropolitan Adelaide for low income families (5.3% compared to 17.2% in Metropolitan Adelaide) and people identifying as Aboriginal and Torres Strait Islander (a very large 36.4% although smaller than the 72.9% increase in Metropolitan Adelaide).

Of note are the large declines in the 0 to 4 and 15 to 24 year age groups; the substantial decline in people recorded in the Census as being unemployed; declines in people born overseas and resident for less than five years, five years or more and with a poor proficiency in English; the increase in unskilled and semi-skilled workers (compared with a decrease in Metropolitan Adelaide); a smaller increase in people reporting being of Aboriginal or Torres Strait Islander origin; and a much more substantial decline in the number of dwellings rented from the SA Housing Trust (reflecting a decline in availability of housing rather than a decline in need).

There were larger increases in country South Australia compared to Metropolitan Adelaide for people aged 65 years and over, single parent families and disability support pensioners. The decline in the number of children in welfare-

dependent and other low income families is likely to be due to the decline in children, whereas both female sole parent pensioners and low income families have increased. It should be noted that these figures exclude children in Aboriginal families receiving unemployment benefits through the CDEP scheme.

In 2004, there were a total of 30,817 people in receipt of a disability or unemployment payment, 12.2% of the population (aged 15 to 64 years for males and 15 to 59 years for females); a further 7,748 females were receiving a sole parent pension (in total adding to 15.2% of the population group receiving one of these welfare payments).

Table 9.2: Change in demographic and socioeconomic status indicators, country South Australia

Indicator	Number		% change	
Chapter 4	**1991**	**2001**	**No.[1]**	**Rate/%[2]**
0 to 4 year old children	31,259	27,063	-13.4	-19.4
5 to 14 year old children	62,130	60,800	-2.1	-9.0
15 to 24 year old young people	58,986	46,564	-21.1	-26.6
65 years & over	40,244	57,655	43.3	33.3
Total fertility rate	2.12	2.04	..	-3.8
Single parent families	6,591	10,351	57.0	48.5
Low income families	22,995	29,098	26.5	5.3
Unemployed people	16,395	12,285	-25.1	-58.3
Unskilled & semi-skilled workers	39,584	41,003	3.6	5.4
Female labour force participation (20 to 54 years)	50,714	62,121	22.5	-3.1
Educational participation at age 16 years	4,088	4,410	7.9	2.6
Aboriginal & Torres Strait Islander people	8,466	12,378	46.2	36.4
People born overseas[3], resident in Australia for five years or more	15,252	13,861	-9.1	-14.3
People born overseas[3], resident in Australia for less than five years	1,332	938	-29.6	-40.6
Poor proficiency in English[3]	1,955	1,410	(-27.9)	-36.2
SA Housing Trust rented dwellings	15,565	10,292	-33.9	-45.9
Dwellings without a motor vehicle	10,169	11,306	11.2	-8.6
Chapter 5	**1996**	**2004**	**No.[1]**	**Rate/%[2]**
Age pensioners	43,703	48,825	11.7	-16.4
Disability support pensioners	14,715	16,971	15.3	48.9
Female sole parent pensioners	6,721	7,748	15.3	21.0
Unemployment beneficiaries (includes CDEP)	20,318	13,846	-31.9	-41.3
Children in welfare-dependent and other low income families[4]	45,177	37,527	-16.9	-15.8

[1]Percentage change in the numbers shown from 1986 (1991) to 2001 (Chap. 4) or 1992 to 2004 (Chap. 5)
[2]Percentage change in the rate or proportion from 1986 (1991) to 2001 (Chap. 4) or 1992 to 2004 (Chap. 5)
[3]Includes only people who were born in a predominantly non-English speaking country
[4]Excludes children in families under CDEP

Note: See referenced chapter for data definitions

Socioeconomic status by area: change over time

Indicators for which data are only available for the latest period are shown in Figures 9.5 and 9.6.

Metropolitan Adelaide: Chapter 4 Indicators

In addition to the often substantial changes in many of the indicators shown in the previous tables, there are also variations when these data are viewed by socioeconomic groupings of areas (quintiles).

The second chart in Figure 9.1 shows single parent families (with dependent children) as a proportion of all families (with dependent children) in each quintile, at both the 1986 and 2001 Censuses: the taller bars for 2001 show that the proportion of single parent families was higher in each quintile, when compared with 1986. We know from Table 9.1 that the number of single parent families also increased, by 54.3%, between the Censuses.

The relative difference between the proportion of families who were single parent families in the most disadvantaged areas (Quintile 5) and the most advantaged areas (Quintile 1) is the rate ratio. The rate ratio is shown on the right hand side of the chart with the abbreviation 'RR', and is the measure of the difference in rates between Quintiles 5 and 1. In this chart, a comparison of the rate ratios for the two periods shows that the difference in rates between the most disadvantaged (Quintile 5) and most advantaged areas (Quintile 1) has declined, marginally, from 1986 to 2001, from a rate ratio of 2.14 to a rate ratio of 2.11. A rate ratio of 2.11 means that there were over twice the proportion of single parent families in the most disadvantaged areas as in the most advantaged areas, or 111% more.

For many of the indicators, there is also a gradient across the quintiles in the proportions or rates, where the proportion or rate in each subsequent quintile is higher than that in the previous quintile: this is referred to as a 'socioeconomic' gradient. Such a pattern is evident for both periods in the chart for single parent families. In some cases, the Quintile 5 rates are higher than those in Quintile 1, but the gradient is not continuous – for example, in the chart for unskilled and semi-skilled workers, the proportion of these workers in areas in Quintile 2 is greater than in Quintiles 1 and 3, although the gradient then continues. When the gradient is marginally disturbed (i.e. out by one quintile) it is still referred to as a gradient, with 'continuous' gradient being used to describe a consistent gradient across all five quintiles.

In addition to the marginal reduction in inequality for single parent families, a number of the other indicators in Figure 9.1 also show an improvement in the rate ratios, including low income families, unemployment, education participation at 16 years, people born overseas and resident for five years or more, poor proficiency in English, dwellings rented from the South Australian Housing Trust and dwellings with no motor vehicle. Despite declining inequality for these variables, many remain at over twice the level for those in the poorest areas (compared with those most well-off).

Of note is that, despite the overall increase in participation of females in the labour force identified earlier, their participation in the most disadvantaged areas has declined from the 1986 level, both overall (the bar is shorter in Quintile 5 in 2001) and relative to women in Quintile 1 (the rate ratio has dropped, from a participation rate of 84% of those in Quintile 1, to 69%). This is another indication of increasing social and economic inequality in Metropolitan Adelaide.

Despite an overall decline of 21.2% in the proportion of the workforce in unskilled and semi-skilled occupations, Figure 9.1 shows that the majority of this decline has occurred for workers living in Quintiles 1 and 2.

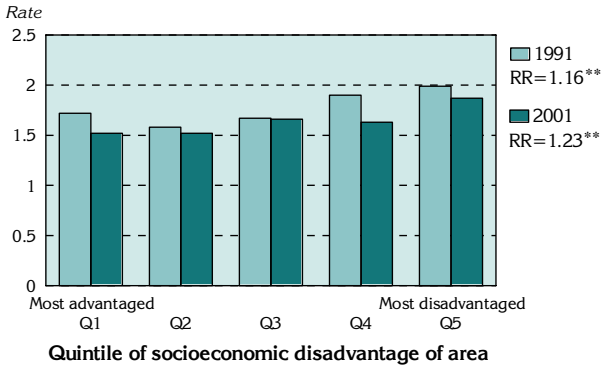
Inequality in the geographic distribution of Aboriginal and Torres Strait Islander people remained extremely high, with a rate ratio of 8.24**.

Full-time participation in education at age 16 has increased overall, and in each quintile, and the gap between participation of young people in the most disadvantaged and most advantaged areas has narrowed, from 25% to 19%.

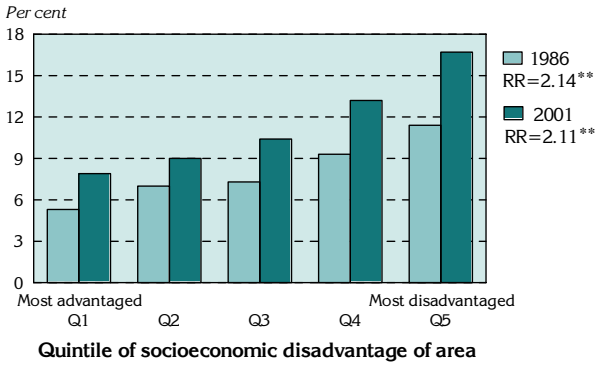
The substantial decline in rate ratios for dwellings rented from the SA Housing Trust, from 27 times higher in the most disadvantaged areas to eleven times higher, is largely a result of the smaller number of dwellings in the most disadvantaged areas (approximately 3,000 less in 2001), rather than the larger number in the most advantaged areas (up from 652 to 1,471).

Figure 9.1: Indicators of socioeconomic status (Chapter 4), change by socioeconomic disadvantage of area, Metropolitan Adelaide

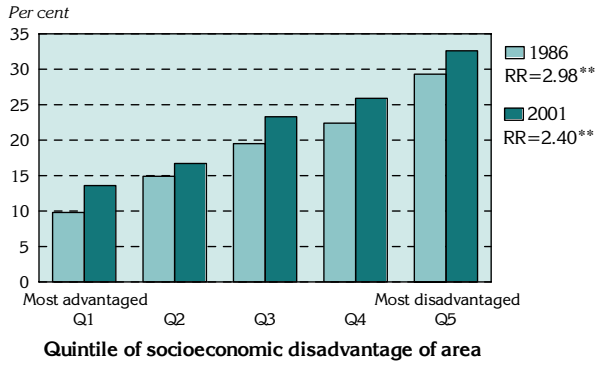
Total fertility rate



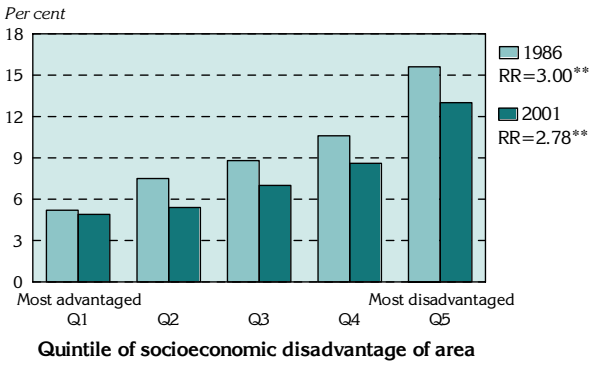
Single parent families



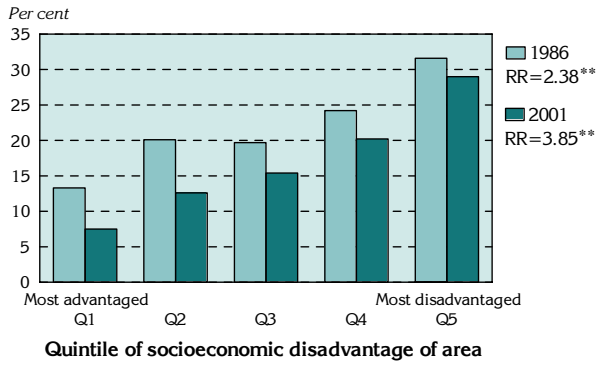
Low income families



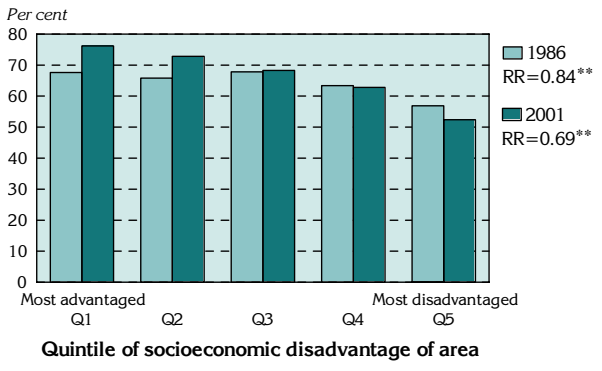
Unemployed[1]



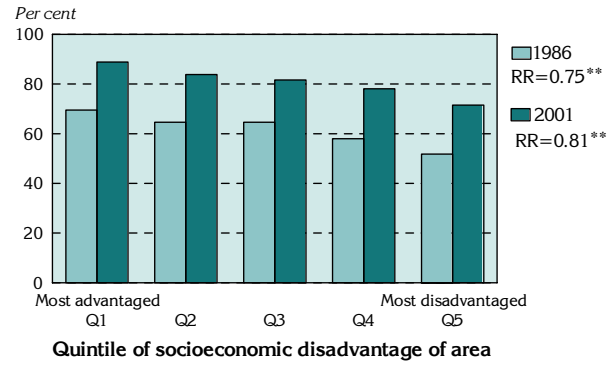
Unskilled and semi-skilled workers



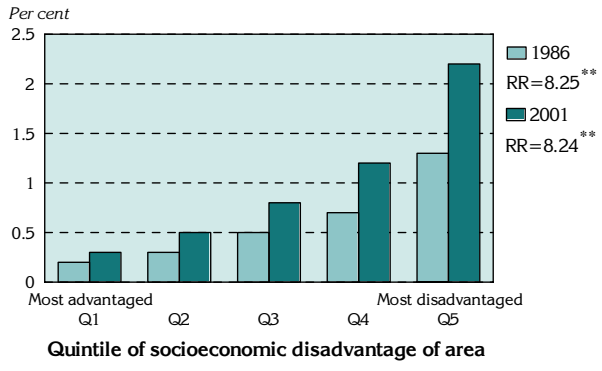
Female labour force participation



Educational participation at age 16 years

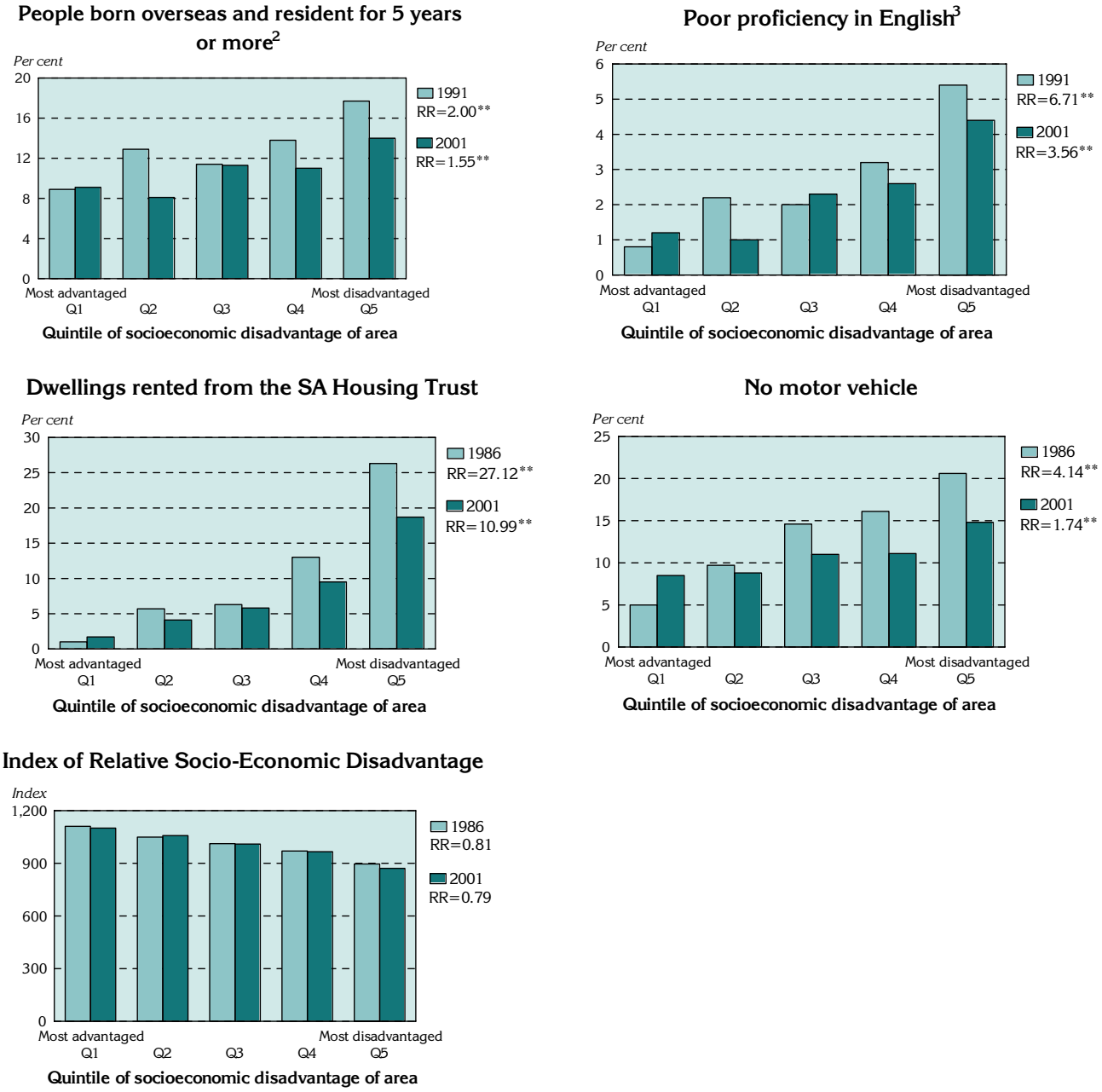


Aboriginal and Torres Strait Islander people



Note: Footnotes are at the end of the figure

Figure 9.1: Indicators of socioeconomic status (Chapter 4), change by socioeconomic disadvantage of area, Metropolitan Adelaide …*cont*



[1]Unemployment rates in this chart were calculated from Census data: this measure generally produces a higher rate than the official unemployment estimates, which are mapped in Chapter 4

[2]Includes only people who were born in a predominantly non-English speaking country

[3]Includes only people who were born in a predominantly non-English speaking country and who reported not speaking English "well" or "at all"

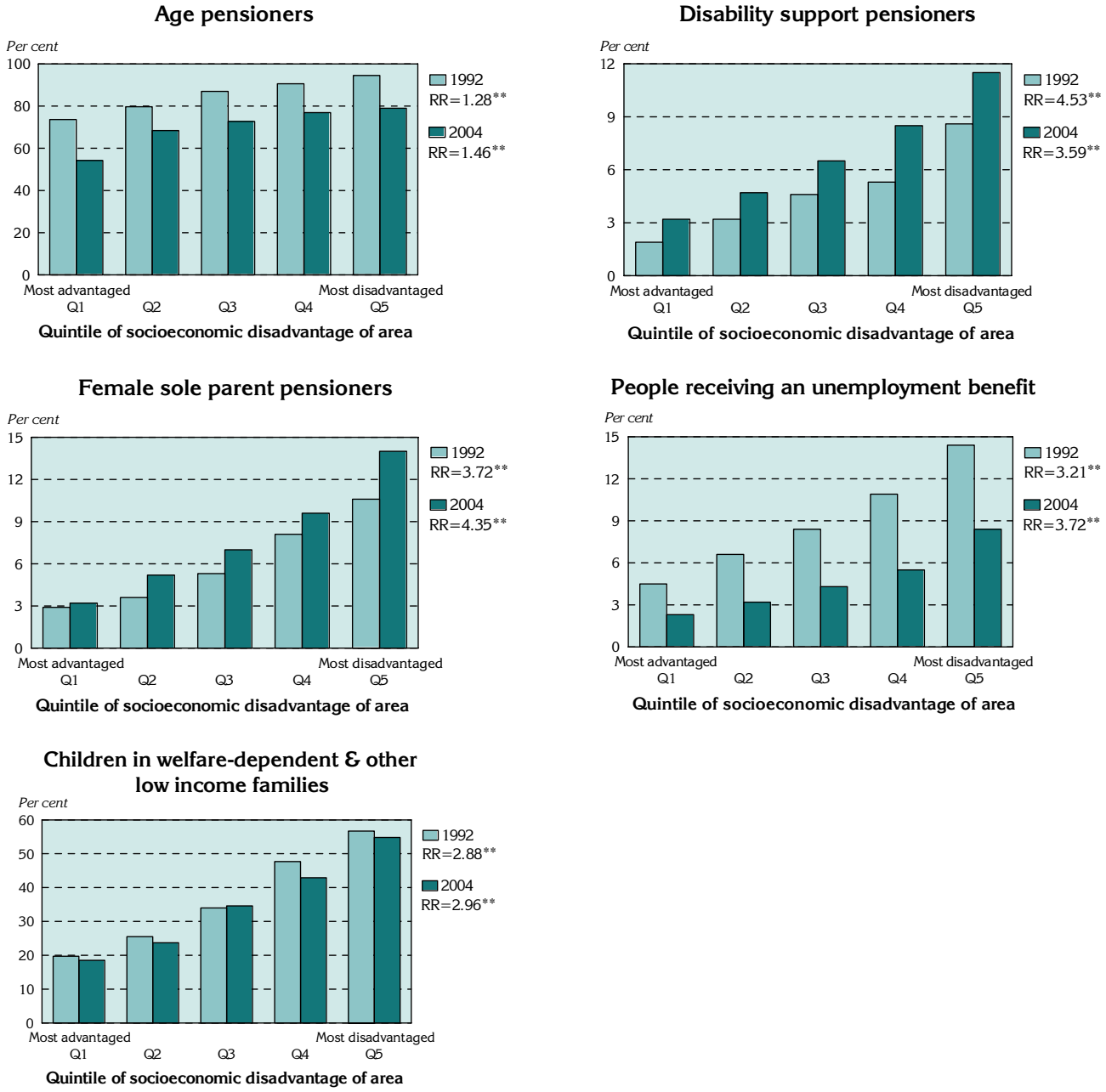
Note: See referenced chapter for data definitions

Metropolitan Adelaide: Chapter 5 Indicators

Apart from disability support pensioners, rate ratios for the pension and benefit groups have increased, indicating increasing concentration of these population groups into the most disadvantaged areas (Figure 9.2). The reduction in the proportion of the population in each quintile receiving an Age Pension has occurred because of the substantial increase in the denominator population on which the proportions were calculated, rather than a reduction in the number of people dependent on Age Pension.

Each of the charts in Figure 9.2 shows a clear, continuous gradient in rates across the socioeconomic groupings.

Figure 9.2: Indicators of socioeconomic status (Chapter 5), change by socioeconomic disadvantage of area, Metropolitan Adelaide



Note: See referenced chapter for data definitions

Country South Australia: Chapter 4 Indicators

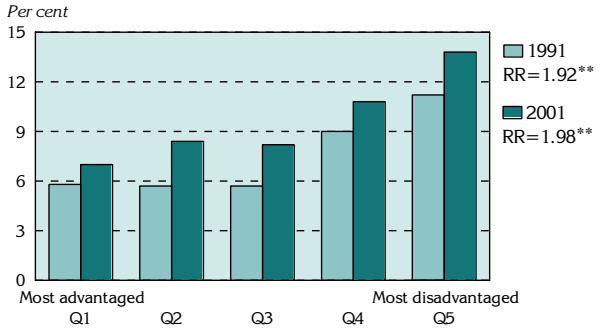
Although there are marked socioeconomic gradients evident in the majority of indicators for country South Australia (Figure 9.3), the differences across the quintiles are generally not as large as seen for Metropolitan Adelaide. There were some notable exceptions to this, including people identifying as being Aboriginal and/or Torres Strait Islander, people born overseas and resident for five years or more, poor proficiency in English, dwellings rented from the South Australian Housing Trust and dwellings without a motor vehicle.

Although full-time participation in education at age 16 years has increased overall, the gap in participation of young people in the disadvantaged and most advantaged areas has also increased, from six per cent to 18%, the reverse of the trend in Metropolitan Adelaide.

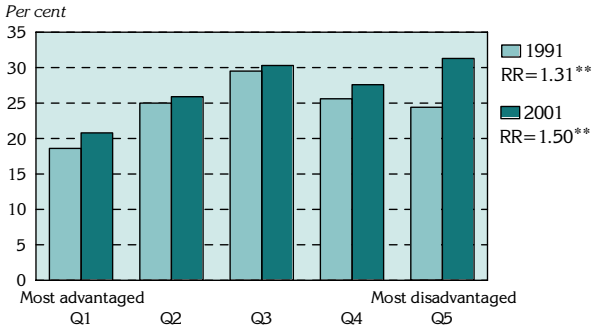
Overall, there was less inequality in country South Australia compared to Metropolitan Adelaide, as measured by the Index of Relative Socioeconomic Disadvantage. However, all of the charts show increasing inequality for country South Australia between the two time periods. The exception to this is for Aboriginal and Torres Strait Islander people where inequality has declined marginally, although it remains extreme at 13.40**.

Figure 9.3: Indicators of socioeconomic status (Chapter 4), change by socioeconomic disadvantage of area, country South Australia

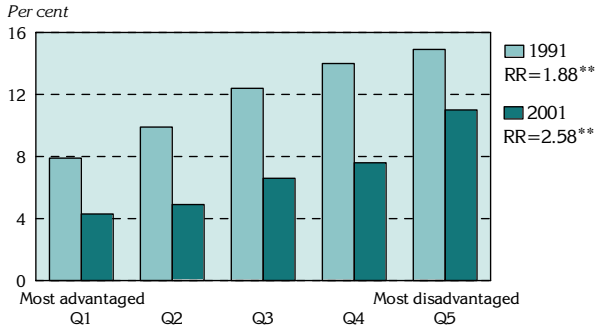
Single parent families



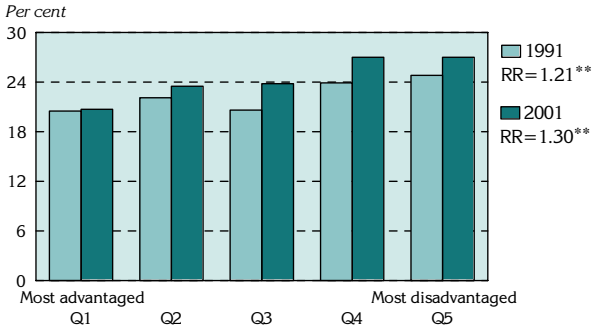
Low income families



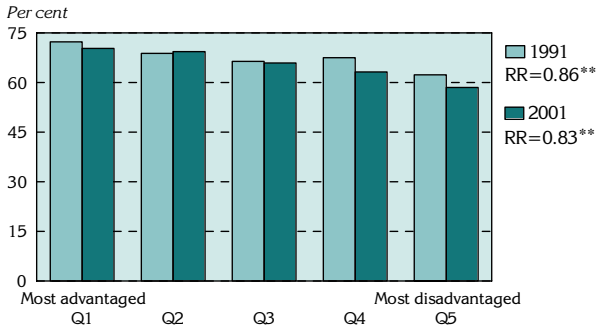
Unemployed[1]



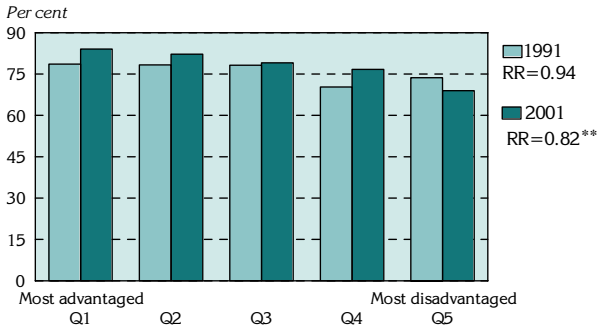
Unskilled and semi-skilled workers



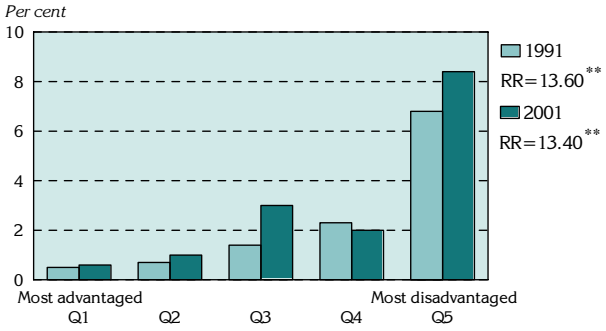
Female labour force participation



Educational participation at age 16 years



Aboriginal and Torres Strait Islander people



People born overseas and resident for 5 years or more

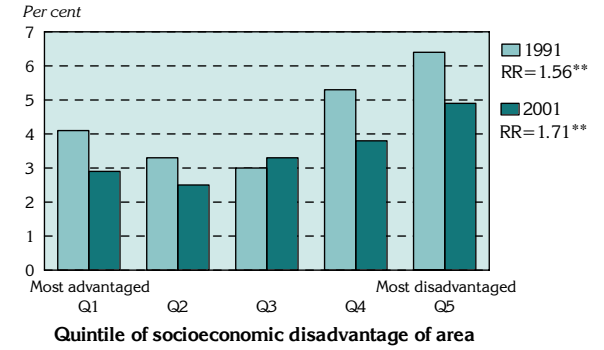


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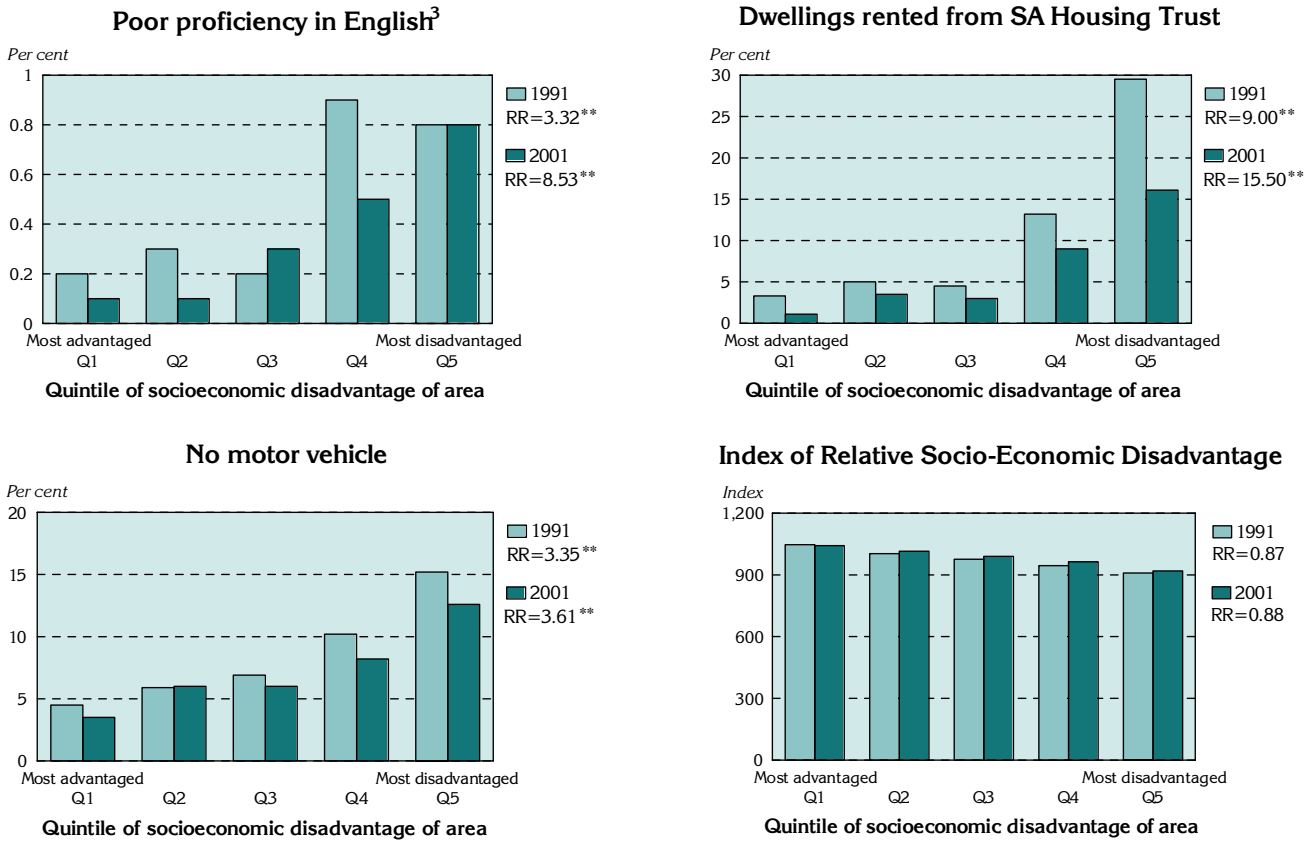
Figure 9.3: Indicators of socioeconomic status (Chapter 4), change by socioeconomic disadvantage of area, country South Australia ...*cont*



[1]Unemployment rates in this chart were calculated from Census data: this measure generally produces a higher rate than the official unemployment estimates, which are mapped in Chapter 4

[2]Includes only people who were born in a predominantly non-English speaking country

[3]Includes only people who were born in a predominantly non-English speaking country and who reported not speaking English "well" or "at all"

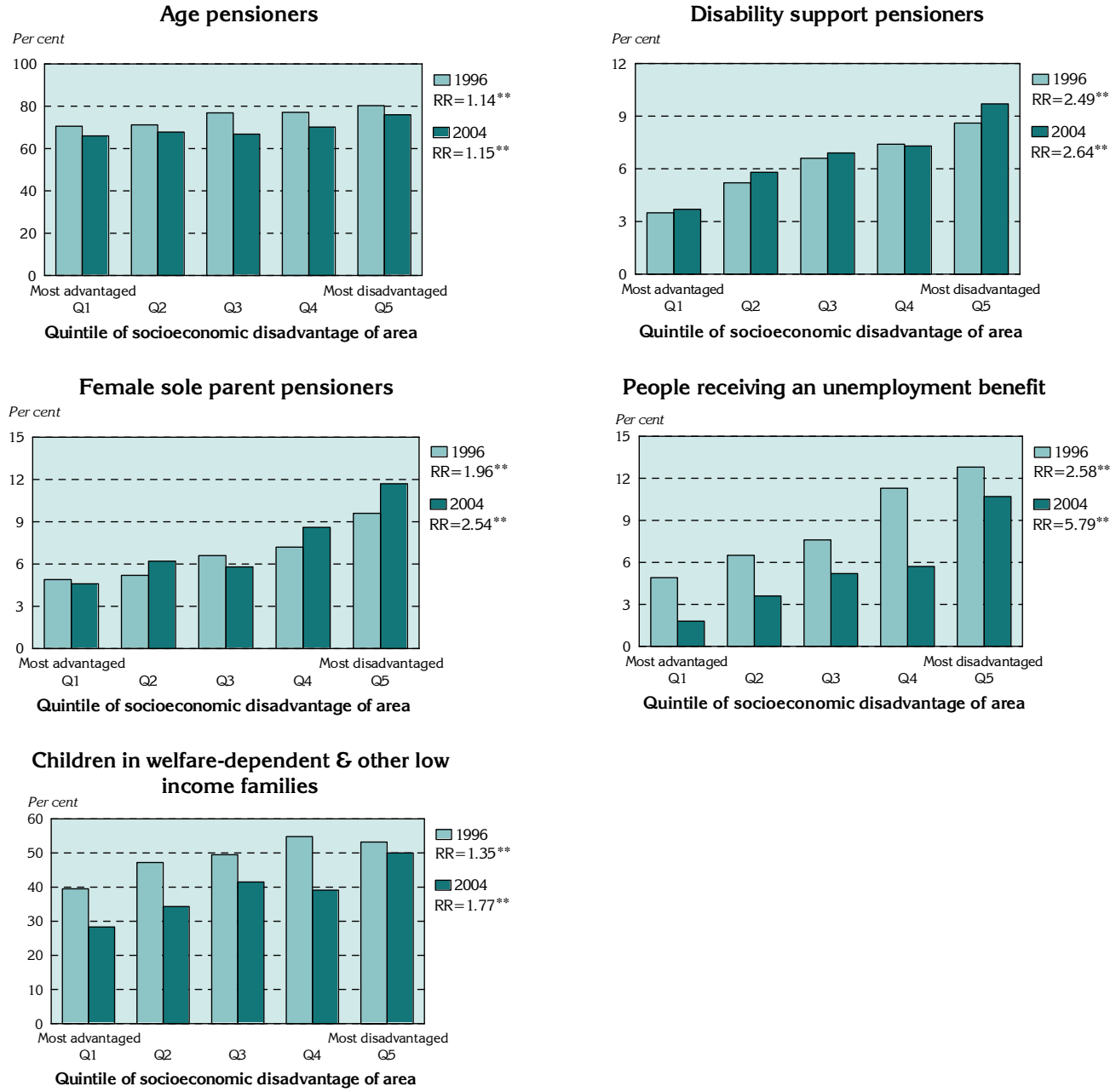
Note: See referenced chapter for data definitions

Country South Australia: Chapter 5 Indicators

Rate ratios for all the pension and benefit groups shown have increased (only marginally so for age pensioners, Figure 9.4). However, they are lower than for Metropolitan Adelaide, other than for people receiving unemployment benefits. Along with the substantial decline in the number of people in this group (Table 9.2), the rate ratio has more than doubled, to 5.79**, indicating a substantially increased concentration of this group in the most disadvantaged areas.

Increasing inequality is also evident for female sole parent pensioners, Disability Support Pensioners, and children in welfare-dependent and other low income families (although these variables increased between the two time periods).

Figure 9.4: Indicators of socioeconomic status (Chapter 5), change by socioeconomic disadvantage of area, country South Australia



Note: See referenced chapter for data definitions

Socioeconomic status by area

Indicators for which data are only available for the 2001 Census are shown below.

Metropolitan Adelaide: Chapter 4 Indicators

The first chart in Figure 9.5 shows the strong continuous socioeconomic gradient evident for jobless families with children less than 15 years of age, representing over four times (4.12) the proportion in Quintile 5 areas than in Quintile 1 areas.

SACE achievement scores have similar gradients for each of PES, PAS and SAS. Use of the Internet at home declines markedly across the quintiles, to under half the use in the poorest areas. Dependence on rent assistance increased by 41% between Quintiles 1 and 5.

The rate ratio for people born overseas and resident for less than five years was the lowest at 1.11**; however, the greatest differential was between Quintiles 2 and 3.

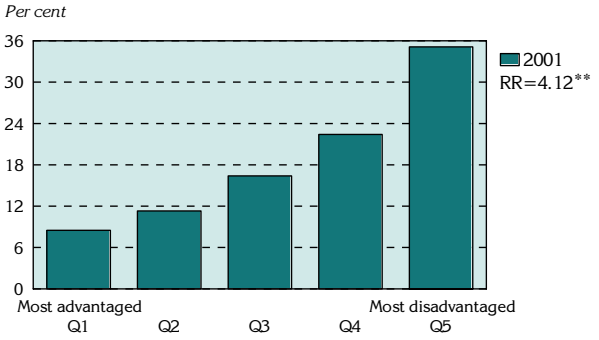
Country SA: Chapter 4 Indicators

Although less marked than in Metropolitan Adelaide, the gradient in the proportion of families who are jobless is, nevertheless, steep (Figure 9.6).

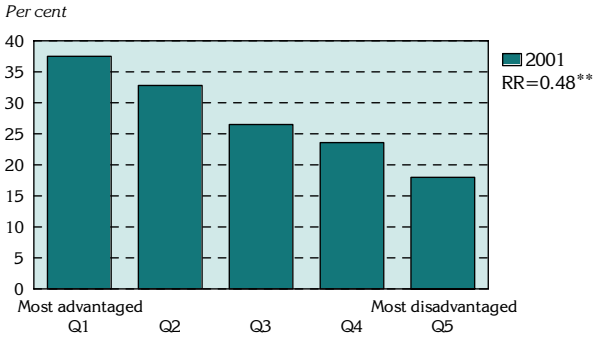
Use of the Internet at home in the most disadvantaged areas is low, at some two thirds the level in the most advantaged areas; and rent assistance through Centrelink is equally important across Quintiles 2 to 4. Due to the very small numbers involved, the variable for people born overseas in a predominantly non-English speaking country has not been shown by quintile.

Figure 9.5: Indicators of socioeconomic status (Chapter 4), by socioeconomic disadvantage of area, Metropolitan Adelaide, 2001[1]

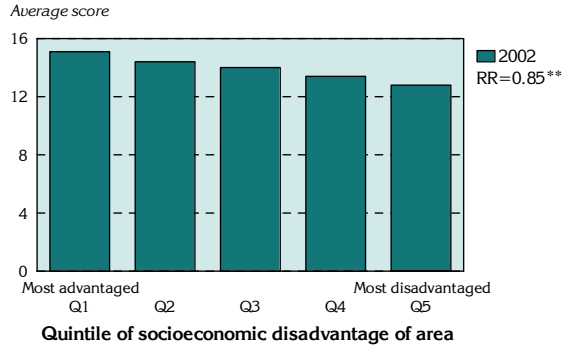
Jobless families



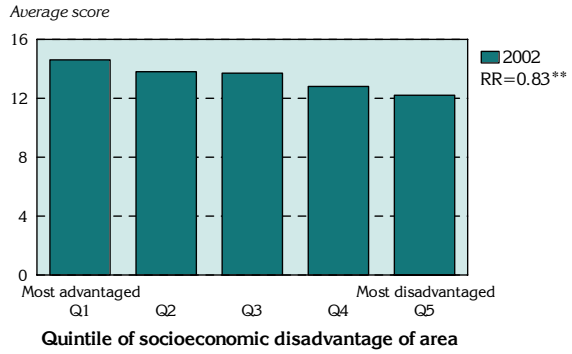
People who used the Internet at home



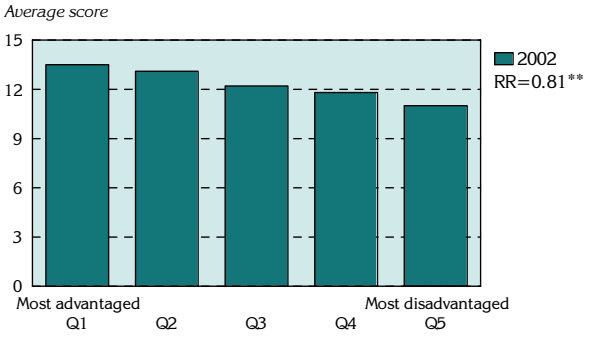
Publicly examined subject achievement scores



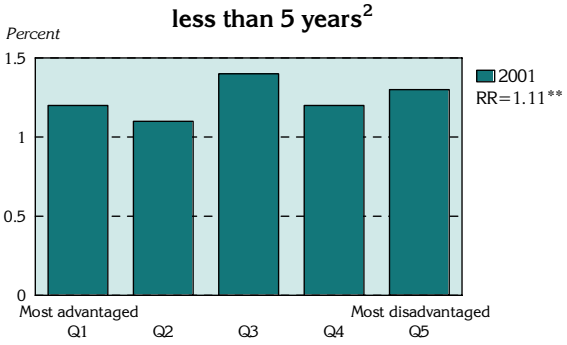
Publicly assessed subject achievement scores



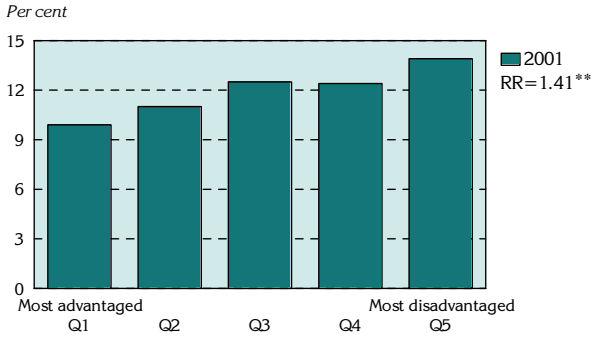
School assessed subject achievement scores



People born overseas and resident for less than 5 years[2]



Rent assistance



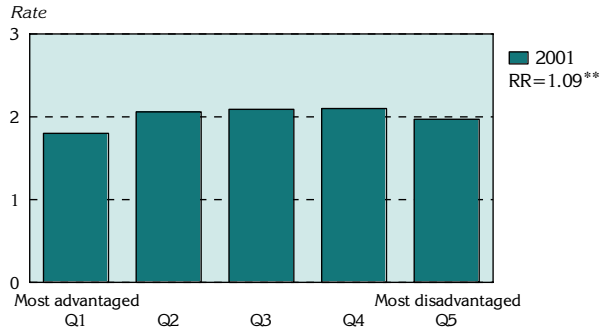
[1]PES, PAS and SAS data are for 2002

[2]Includes only people who were born in a predominantly non-English speaking country

Note: See referenced chapter for data definitions

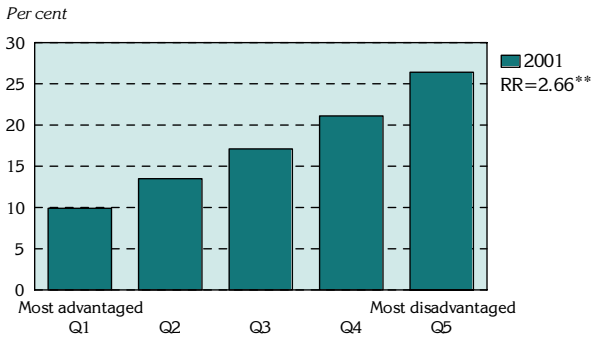
Figure 9.6: Indicators of socioeconomic status (Chapter 4), by socioeconomic disadvantage of area, country South Australia, 2001[1]

Total fertility rate



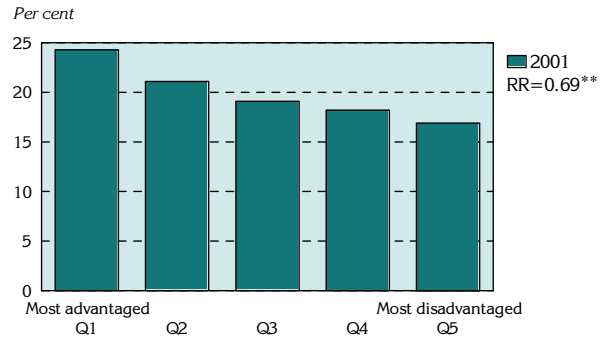
Quintile of socioeconomic disadvantage of area

Jobless families



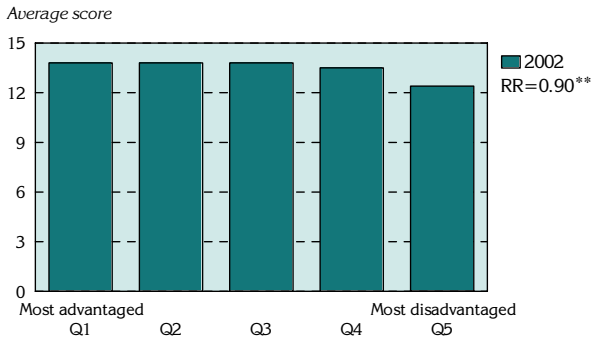
Quintile of socioeconomic disadvantage of area

People who used the Internet at home



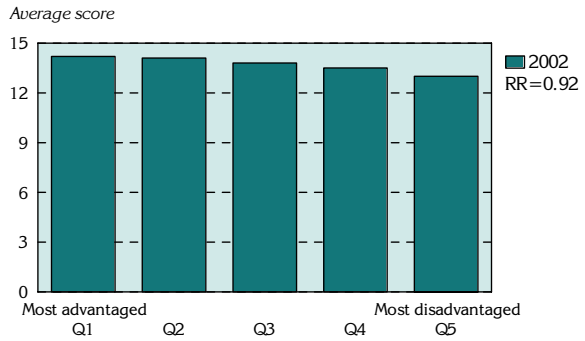
Quintile of socioeconomic disadvantage of area

Publicly examined subject achievement scores



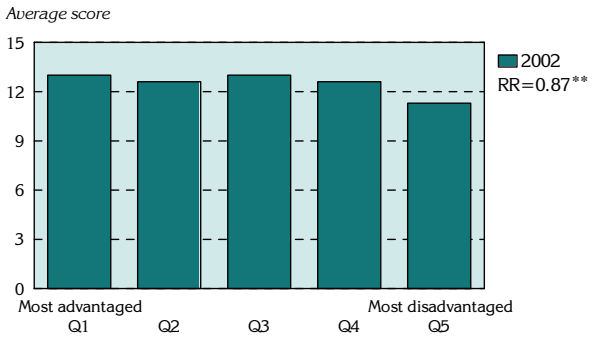
Quintile of socioeconomic disadvantage of area

Publicly assessed subject achievement scores



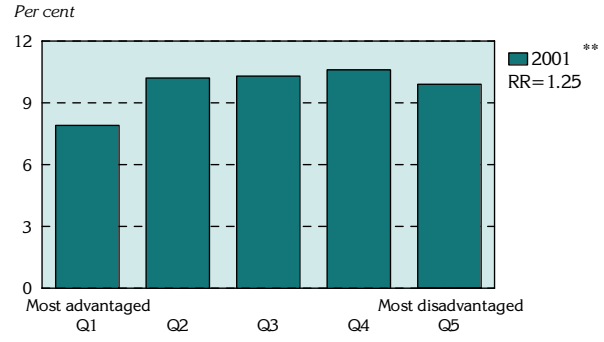
Quintile of socioeconomic disadvantage of area

School assessed subject achievement scores



Quintile of socioeconomic disadvantage of area

Rent assistance



Quintile of socioeconomic disadvantage of area

1 PES, PAS and SAS data are for 2002

Note: See referenced chapter for data definitions

Change in health status

The changes shown in Tables 9.3 and 9.4 provide evidence of both improvements and concerning trends.

Metropolitan Adelaide: Chapter 6 Indicators

The number and rate of people dying prematurely has decreased markedly over the ten years to 1999 to 2002. The numbers of new cases of cancer, for all cancers, cancer of the female breast and prostate cancer have all increased by more than one fifth; in contrast, lung cancer incidence declined by 5.9%. There were marked increases in the proportion of four year old boys assessed as being overweight (not obese) and obese (although the numbers varied little, the rate increased due to a smaller increase in the number of four year old boys, reflected in Table 9.1). There was also a large increase in the rate of termination of pregnancy, and an increase of 2.6% for low birthweight babies (Table 9.3).

Table 9.3: Change in health status indicators (Chapter 6), Metropolitan Adelaide

Indicator	Period	Number per year		% change	
		Period 1	Period 2	No.[1]	Rate/ %[2]
Low birthweight babies	1989-92: 2000-02	943	875	-7.2	2.6
Termination of pregnancy	1990-92: 2000-02	3,783	4,531	19.8	22.9
Childhood immunisation (12 months of age)	1998: 2002	12,288	14,349	16.8	12.1
Overweight four year old boys	1995-96: 2000-03	451	467	3.5	44.9
Obese four year old boys	1995-96: 2000-03	199	188	-5.5	28.6
Cancer incidence: total	1986-93: 1998-2002	4,183	5,611	34.1	22.5
Cancer incidence: lung	1986-93: 1998-2002	474	511	7.8	-5.9
Cancer incidence: female breast	1986-93: 1998-2002	498	732	47.0	20.7
Cancer incidence: prostate	1986-93: 1998-2002	445	727	63.4	27.1
Infant deaths	1989-93: 1999-2002	67	56	-33.0	-44.6
Premature male deaths: ages 15-64 years	1989-93: 1999-2002	1,022	897	-28.8	-26.1
Premature female deaths: ages 15-64 years	1989-93: 1999-2002	575	433	-24.6	-16.5

[1]Percentage change in the numbers shown between the two time periods

[2]Percentage change in the rate or proportion between the two time periods

Note: See referenced chapter for data definitions

Country SA: Chapter 6 Indicators

There were larger declines in infant death and premature male death rates in country South Australia than in Metropolitan Adelaide. Greater increases were found for a number of indicators of health status, including overweight and obese four year old boys, termination of pregnancy and low birthweight babies.

The incidence of lung cancer increased marginally between the two time periods, in contrast to Metropolitan Adelaide, where lung cancer incidence declined.

Table 9.4: Change in health status indicators (Chapter 6), country South Australia

Indicator	Period	Number per year		% change	
		Period 1	Period 2	No.[1]	Rate/ %[2]
Low birthweight babies	1989-92: 2000-02	359	333	-7.2	7.4
Termination of pregnancy	1990-92: 2000-02	799	968	21.2	32.0
Childhood immunisation	1998: 2002	4,927	4,777	-3.0	12.9
Overweight four year old boys	1995-96: 2000-03	174	300	72.4	100.0
Obese four year old boys	1995-96: 2000-03	68	99	45.6	66.7
Cancer incidence: total	1986-93: 1998-2002	1,422	2,087	46.8	21.0
Cancer incidence: lung	1986-93: 1998-2002	149	194	30.2	1.6
Cancer incidence: female breast	1986-93: 1998-2002	154	256	66.2	21.1
Cancer incidence: prostate	1986-93: 1998-2002	164	297	81.1	25.9
Infant deaths	1989-93: 1999-2002	34	26	-23.5	-66.2
Premature male deaths: ages 15-64 years	1989-93: 1999-2002	467	416	-10.9	-28.0
Premature female deaths: ages 15-64 years	1989-93: 1999-2002	225	230	2.2	-10.2

[1]Percentage change in the numbers shown between the two time periods

[2]Percentage change in the rate or proportion between the two time periods

Note: See referenced chapter for data definitions

Health status by area: change over time

Indicators for which data are only available for one period are shown in Figure 9.9 and Figure 9.10.

Metropolitan Adelaide: Chapter 6 Indicators

The majority of indicators of health status (Figure 9.7) show a decline in inequality between the two periods analysed, although the extent of inequality remains high among these variables. Inequality in termination of pregnancy declined, although there was an overall increase in the rate of terminations.

The rate ratio of total cancer incidence declined to 1.00, primarily due to a reduction of cancer in the most disadvantaged quintile. This occurred despite an overall increase in detection of new cancers. There was also a decline in inequality for prostate cancer incidence, despite an overall increase in detection of prostate cancer. The gradient for this variable is reversed, with higher rates in the higher quintile groups; the reduction in inequality is primarily due to a reduction in the incidence of prostate cancer for males living in Quintile 1 areas.

There was an overall reduction, as well as a reduction in the rate ratios, for both infant deaths and deaths of females aged 15 to 64 years. The high infant death rate in the most advantaged areas (higher than in 1986) raises issues of data quality, possibly related to small numbers of deaths and accuracy of address coding. Had it not been for this rate, the rate ratio would most likely have been much higher. For example, the ratio of infant death rates between the most disadvantaged areas (Quintile 5) and the areas in Quintile 2 is markedly higher, at 2.34**: this compares with a rate ratio between Quintile 5 and Quintile 2 for the period 1989 to 1993, of 1.95**.

Premature male deaths also declined; however, there was very little change in the rate ratio (although Quintiles 1 and 5 appear to be the same in each period, there is a marginal difference between the two time periods which is not visible due to the scale of the graph).

In addition to an increase in breast cancer incidence, there was a marginal increase in inequality. As with prostate cancer, there are higher rates of breast cancer detection in women in the most advantaged quintile than in the most disadvantaged quintile.

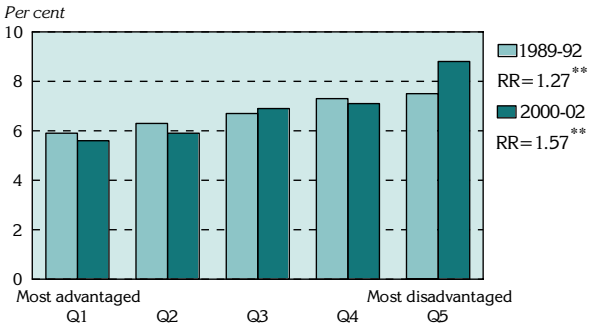
There was an increase in the proportion of low birthweight babies born to residents of areas in the most disadvantaged quintile and in Quintile 3. These increases resulted in an overall increase in low birthweight babies, despite declines in Quintiles 1, 2 and 4.

There was an increase in the proportion of overweight four year old boys across each quintile, with the smallest increase in the most disadvantaged areas. This resulted in a reduction in inequality. Increases were also recorded in each quintile for four year old boys assessed as being obese, although the increases were greatest in the more disadvantaged areas, resulting in an increase in inequality.

The chart on immunisation status at one year of age shows only marginal inequality. However, Quintile 5 was the only quintile where the proportion of children immunised (92.2%) was below 95%. This is significant, as 95% of one year old infants must be immunised to protect the whole population of children this age against infection.

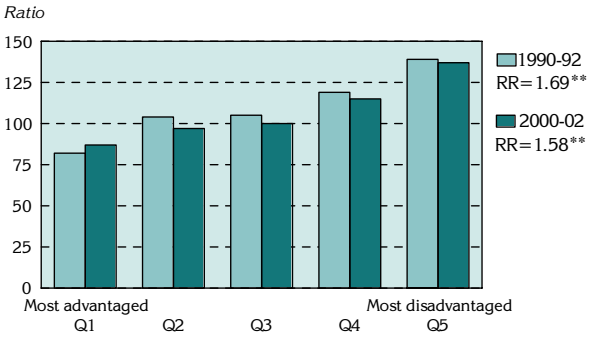
Figure 9.7: Indicators of health status (Chapter 6), change by socioeconomic disadvantage of area, Metropolitan Adelaide

Low birthweight babies



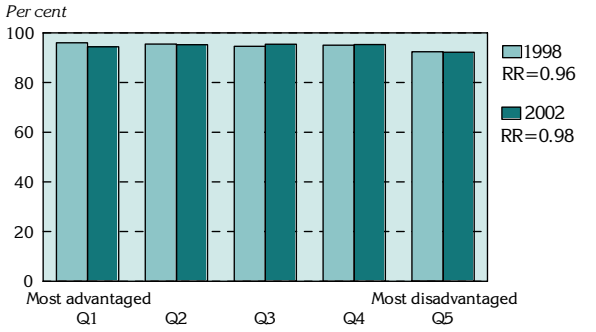
Quintile of socioeconomic disadvantage of area

Termination of pregnancy



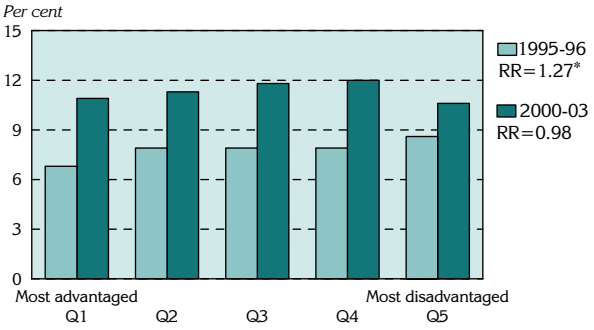
Quintile of socioeconomic disadvantage of area

Immunisation status at one year of age



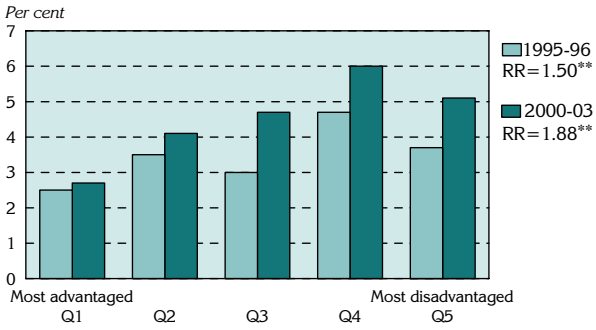
Quintile of socioeconomic disadvantage of area

Overweight four year old boys



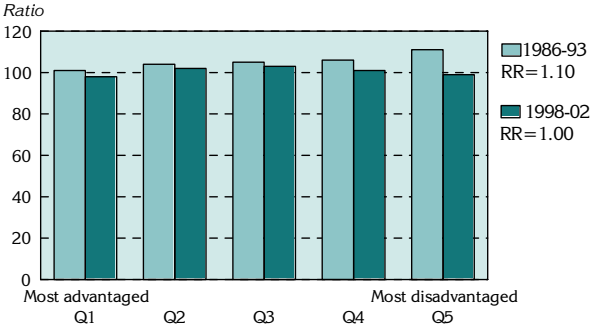
Quintile of socioeconomic disadvantage of area

Obese four year old boys



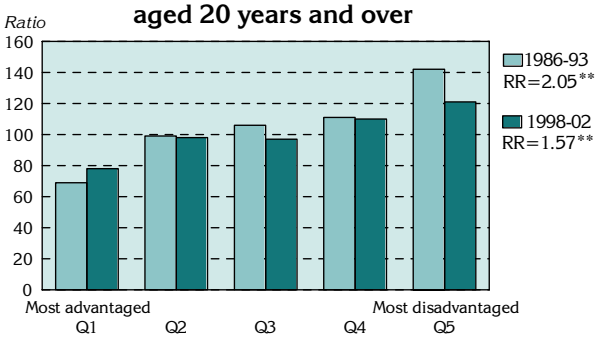
Quintile of socioeconomic disadvantage of area

Cancer incidence



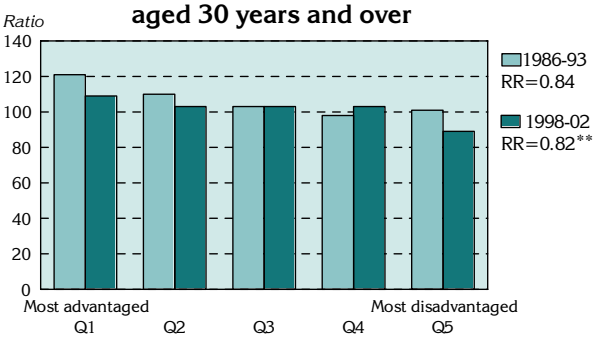
Quintile of socioeconomic disadvantage of area

Lung cancer incidence, population aged 20 years and over



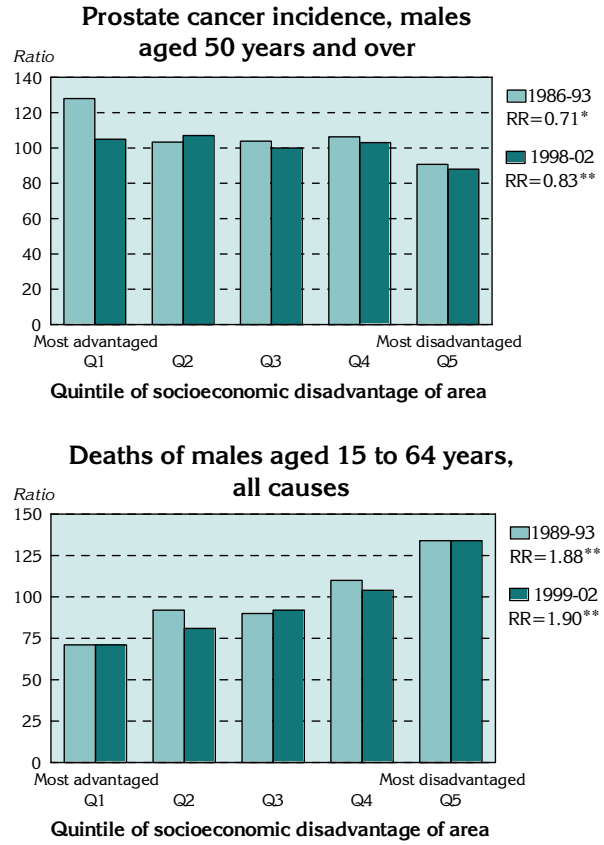
Quintile of socioeconomic disadvantage of area

Breast cancer incidence, females aged 30 years and over



Quintile of socioeconomic disadvantage of area

Figure 9.7: Indicators of health status (Chapter 6), change by socioeconomic disadvantage of area, Metropolitan Adelaide ...*cont*



Note: See referenced chapter for data definitions

Country SA: Chapter 6 Indicators

The rate ratios for the indicators presented in Figure 9.8 show that inequality also exists in the country for these variables; however, a socioeconomic gradient is evident for fewer indicators than is the case for Metropolitan Adelaide. This may, in part, reflect issues with the measure of socioeconomic status used, the IRSD which, in the opinion of the authors, is less applicable in sparsely settled areas, in particular, those areas with relatively large Indigenous populations.

Socioeconomic gradients are apparent for lung cancer incidence and premature deaths of both males and females. Each of these indicators also recorded increasing inequality, as did termination of pregnancy and prostate cancer.

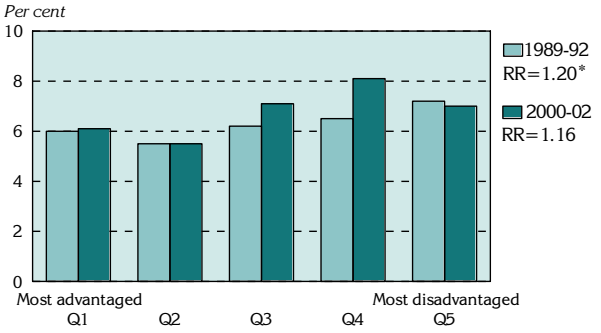
There were declines in inequality for the indicators of infant deaths and low birthweight babies; however, the extent of inequality in the later period remained high.

The rate ratio for overweight four year old boys declined from 1.34 to 1.19; the highest proportion of overweight boys was in Quintile 4, with a rate ratio of 1.40** between Quintiles 4 and 1.

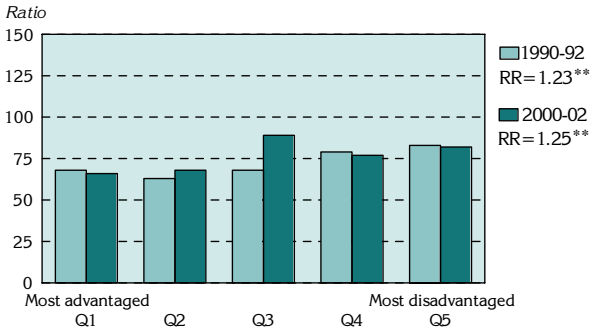
Indicators suggesting only marginal inequality in health status include immunisation status at one year of age, obese four year old boys and cancer incidence.

Figure 9.8: Indicators of health status (Chapter 6), change by socioeconomic disadvantage of area, country South Australia

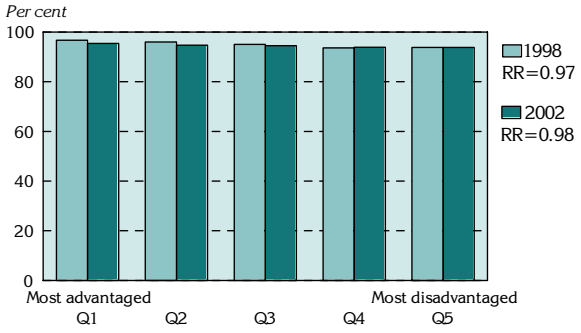
Low birthweight babies



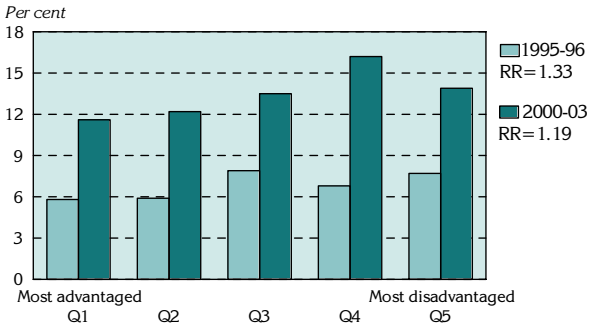
Termination of pregnancy



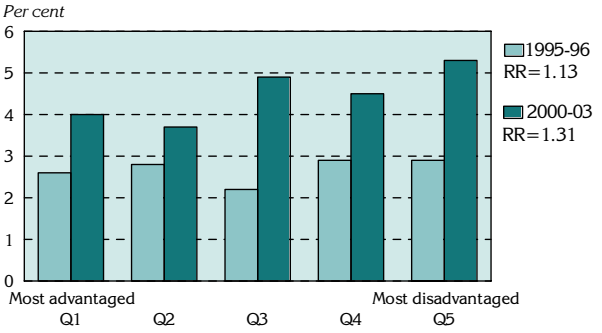
Immunisation status at one year of age



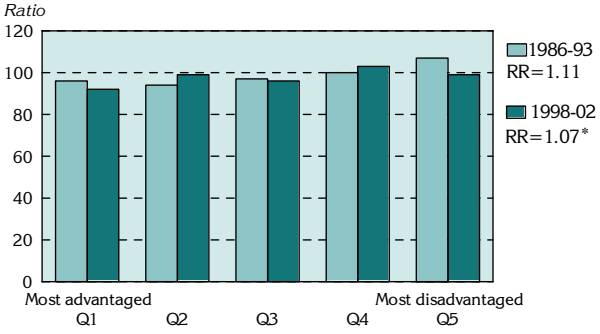
Overweight four year old boys



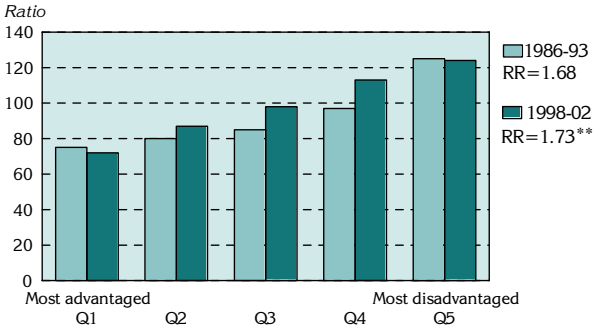
Obese four year old boys



Cancer incidence



Lung cancer incidence



Breast cancer incidence

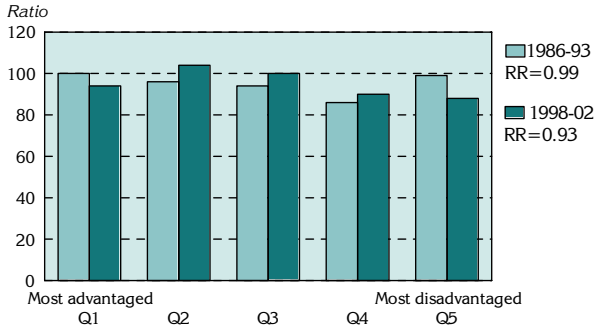
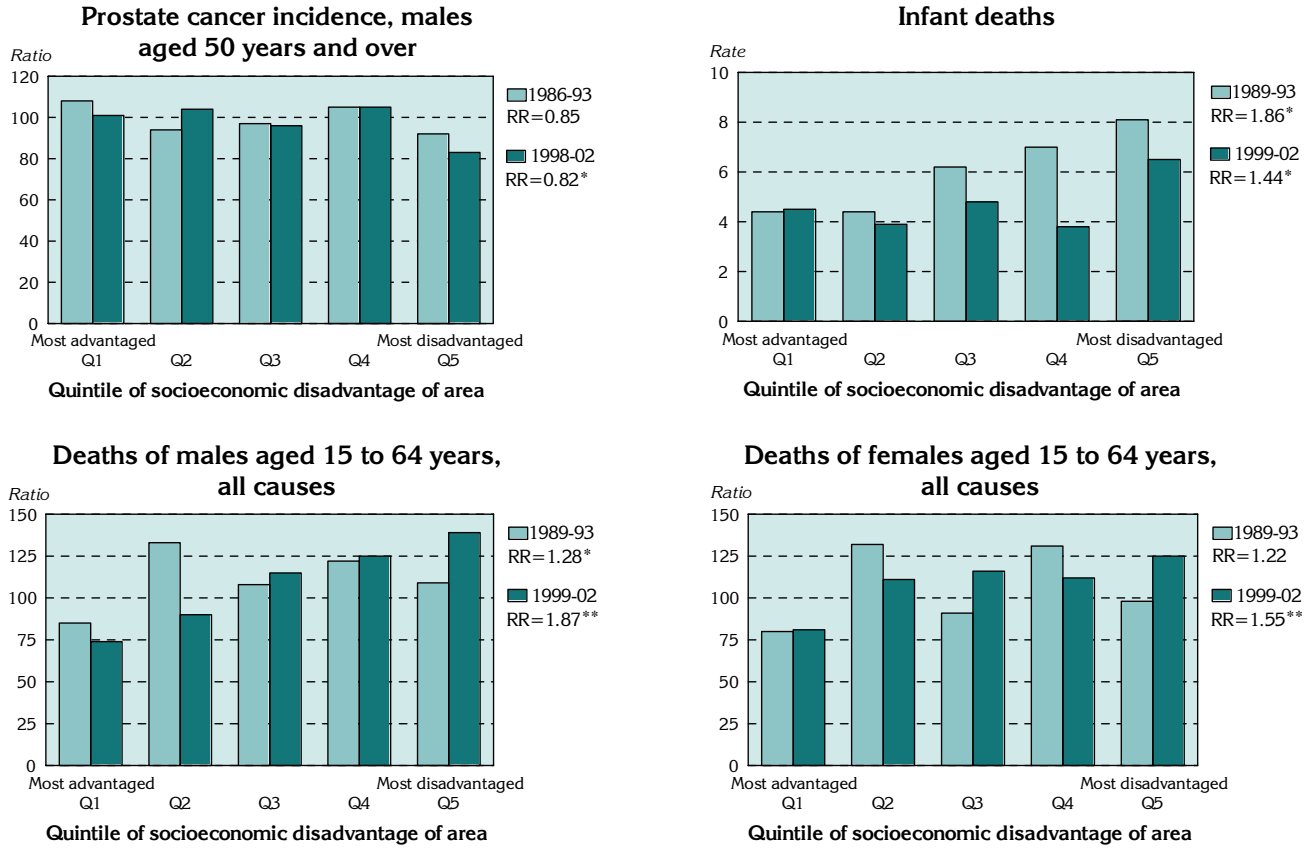


Figure 9.8: Indicators of health status (Chapter 6), change by socioeconomic disadvantage of area, country South Australia ...*cont*



Note: See referenced chapter for data definitions

Health status by area

Indicators for which data are only available for one period are shown below.

Metropolitan Adelaide: Chapter 6 Indicators

There is a strong, continuous socioeconomic gradient in rates of smoking during pregnancy, with 2.32** times the number of women in the most disadvantaged areas (compared with the most advantaged areas) reporting smoking during their pregnancy (Figure 9.9); the rate ratio for deaths from avoidable causes is also very high, being 1.72**. Both measures of self-reported health (the K–10 and fair or poor health) have notable socioeconomic gradients. Of the estimates of prevalence of chronic disease, there are clear gradients for diabetes type 2, mental health, arthritis, osteoarthritis and osteoporosis in females.

Gradients were also evident for estimates of risk factors, although there were higher rates in the most advantaged quintiles for overweight males and females and high health risk due to alcohol consumed.

For 12 year old children with no decayed, missing or filled teeth, the socioeconomic gradient is the reverse, with 16% fewer children in the most disadvantaged areas having a good outcome on this measure.

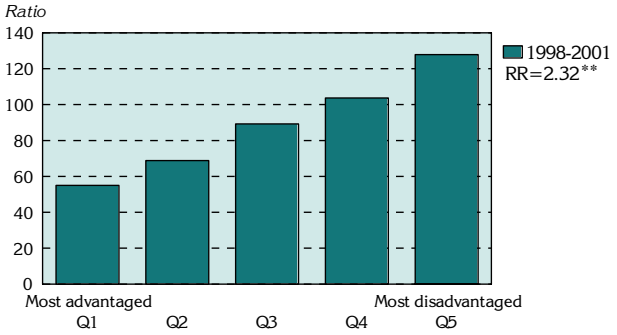
Country SA: Chapter 6 Indicators

In country South Australia, there is a very strong socioeconomic gradient evident for the indicator of avoidable mortality and a strong gradient in rates of smoking during pregnancy (Figure 9.10).

The chart of 12 year old children with no decayed, missing or filled teeth shows a relatively even distribution across the socioeconomic groupings of areas.

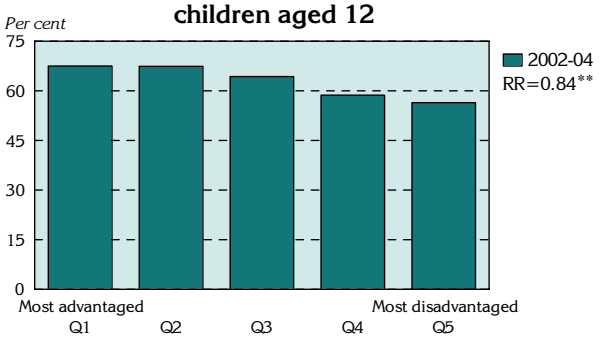
Figure 9.9: Indicators of health status (Chapter 6) by socioeconomic disadvantage of area, Metropolitan Adelaide

Smoking during pregnancy



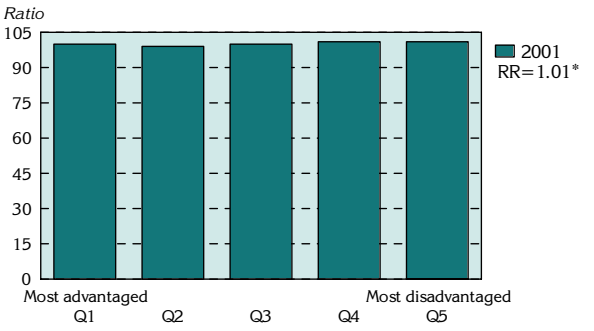
Quintile of socioeconomic disadvantage of area

No decayed missing or filled teeth, children aged 12



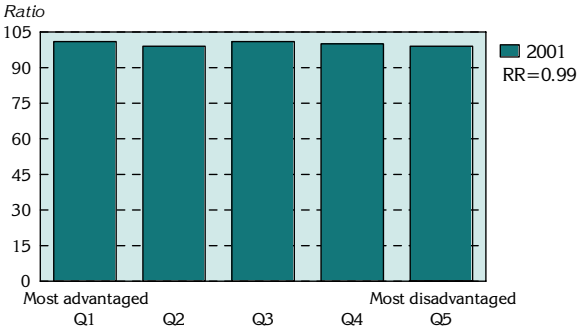
Quintile of socioeconomic disadvantage of area

Estimates of respiratory system diseases



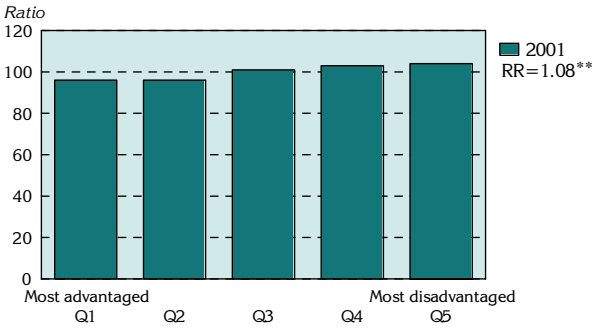
Quintile of socioeconomic disadvantage of area

Estimates of asthma



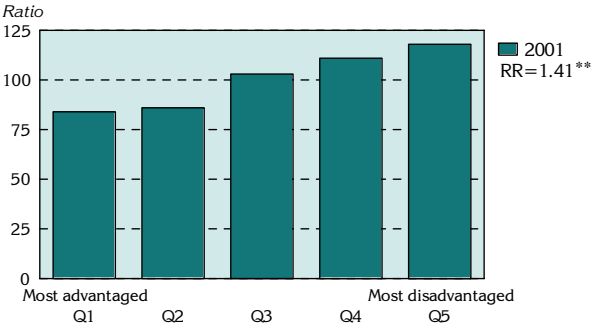
Quintile of socioeconomic disadvantage of area

Estimates of circulatory system diseases



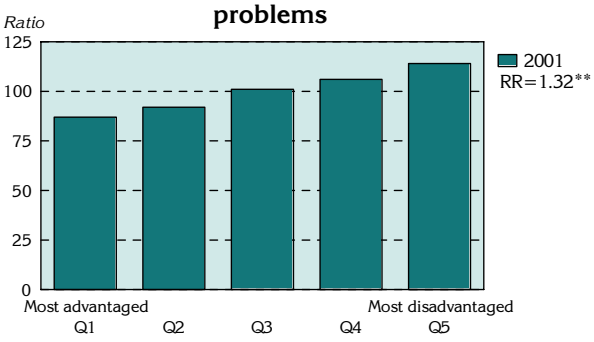
Quintile of socioeconomic disadvantage of area

Estimates of diabetes type 2



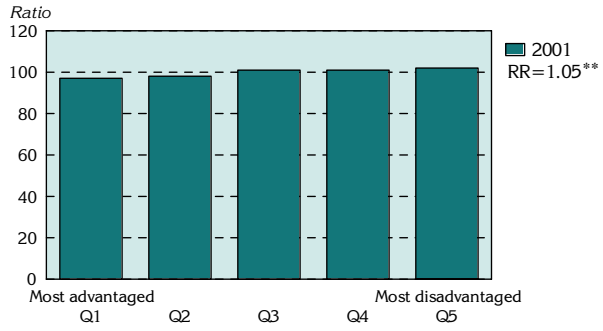
Quintile of socioeconomic disadvantage of area

Estimates of mental & behavioral problems



Quintile of socioeconomic disadvantage of area

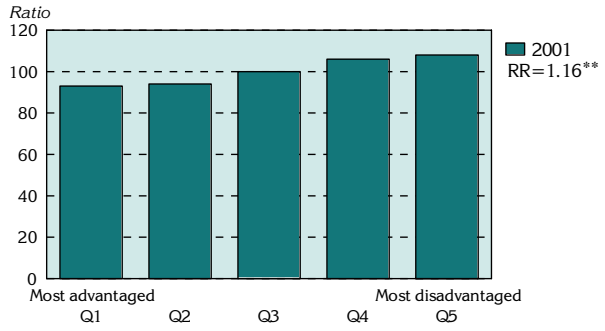
Estimates of musculoskeletal system diseases



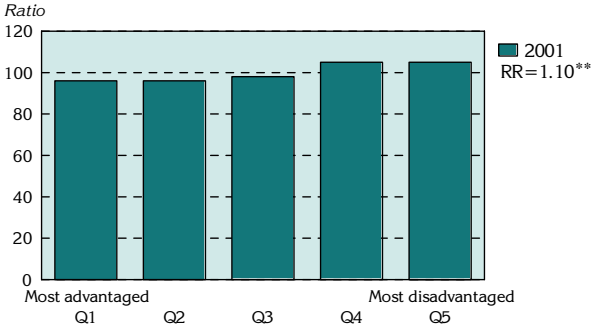
Quintile of socioeconomic disadvantage of area

Figure 9.9: Indicators of health status (Chapter 6) by socioeconomic disadvantage of area, Metropolitan Adelaide ...*cont*

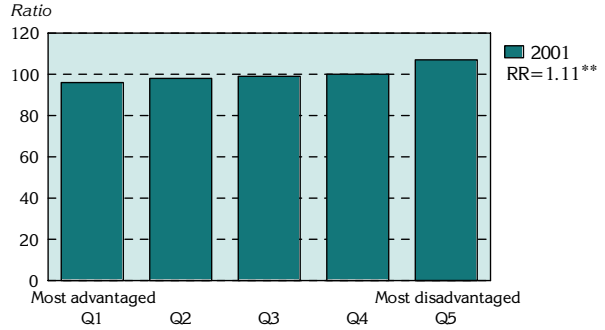
Estimates of arthritis



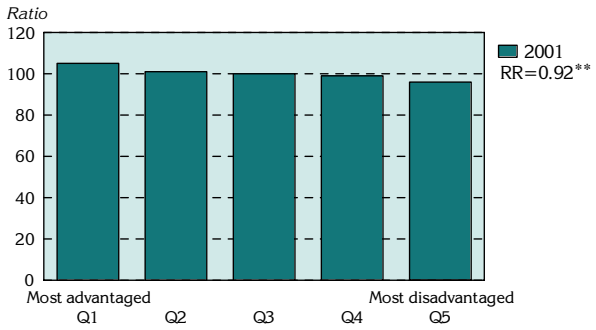
Estimates of osteoarthritis



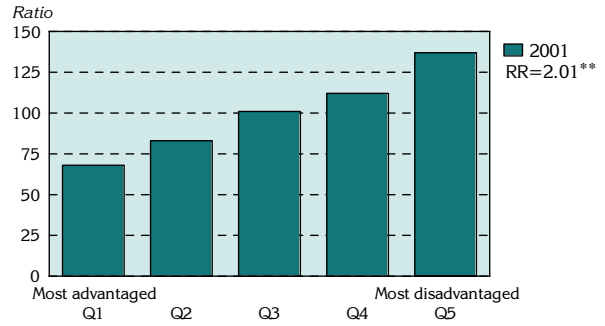
Estimates of females with osteoporosis



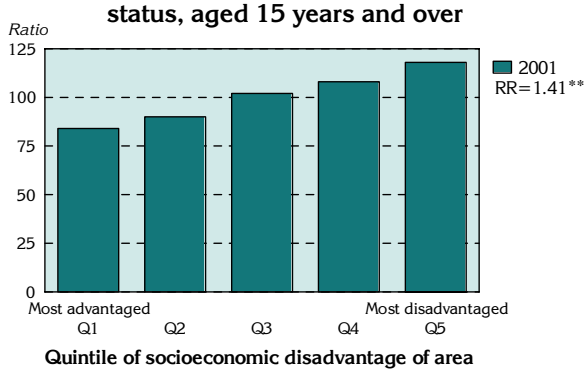
Estimates of injury events



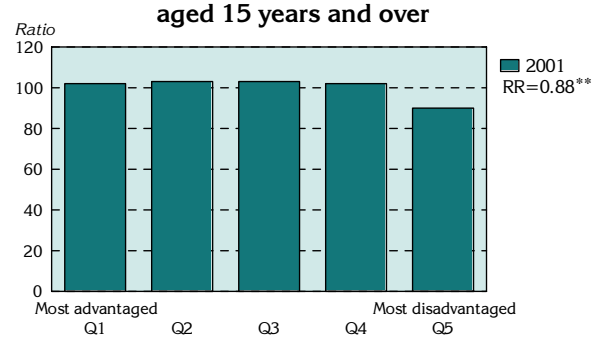
Estimates of very high psychological distress levels (K10), aged 18 years and over



Estimates of fair or poor self-assessed health status, aged 15 years and over



Estimates of overweight (not obese) males aged 15 years and over



Estimates of obese males, aged 15 years and over

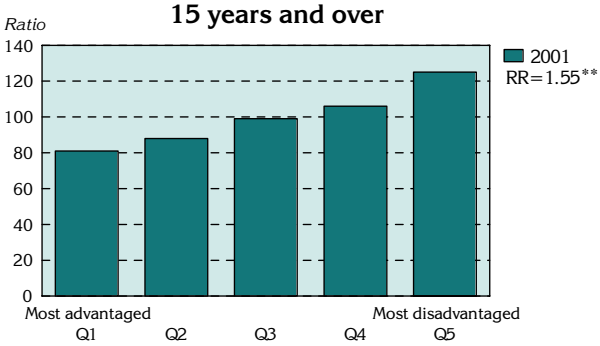
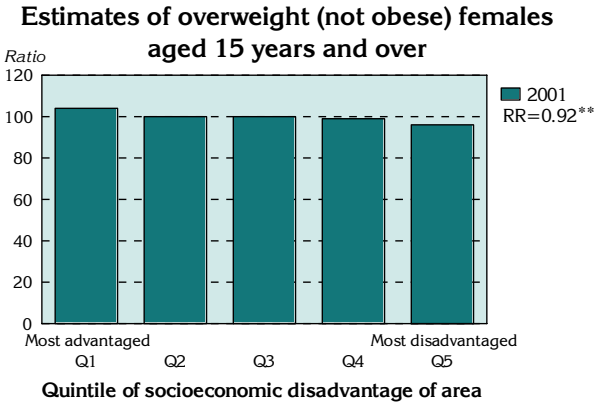
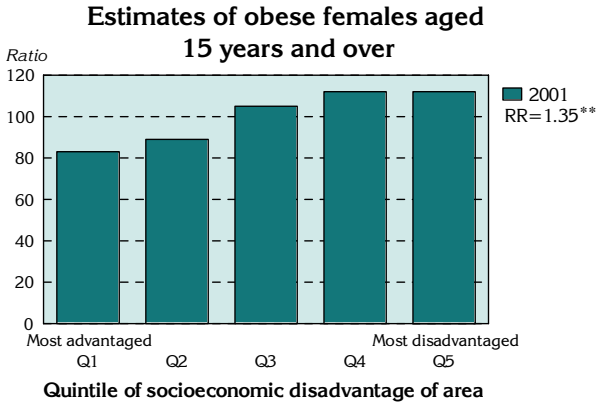
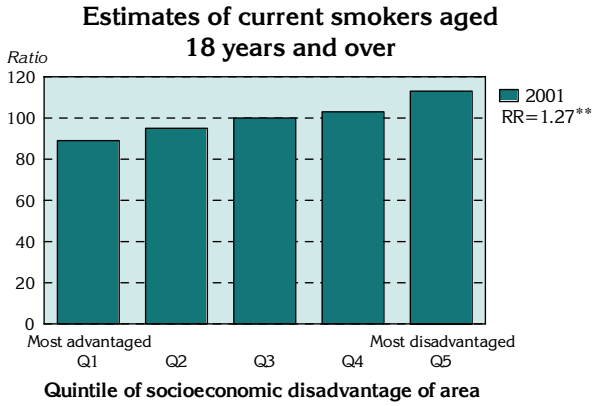
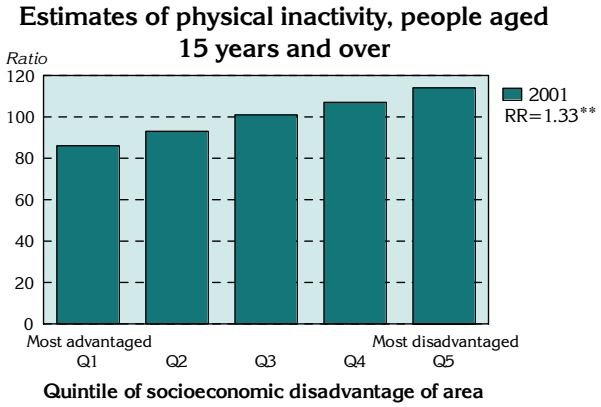


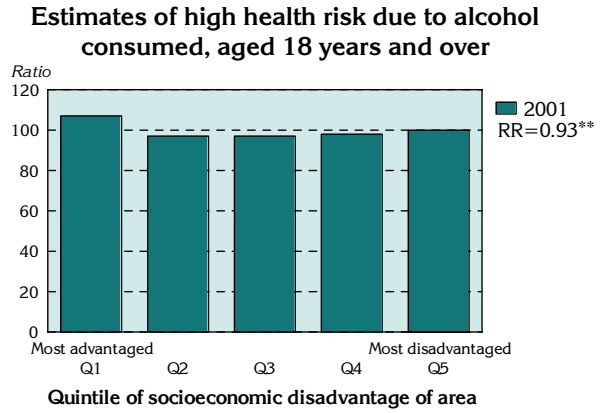
Figure 9.9: Indicators of health status (Chapter 6) by socioeconomic disadvantage of area, Metropolitan Adelaide *...cont*











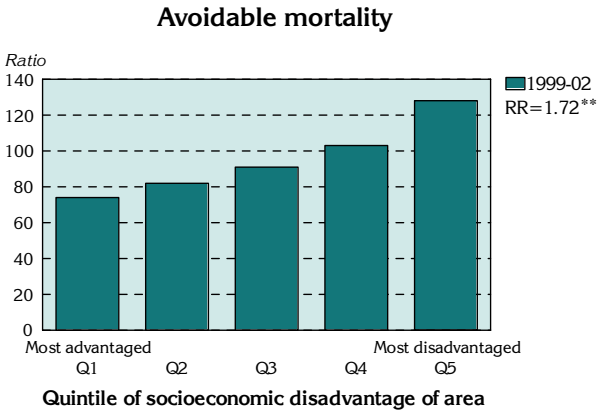
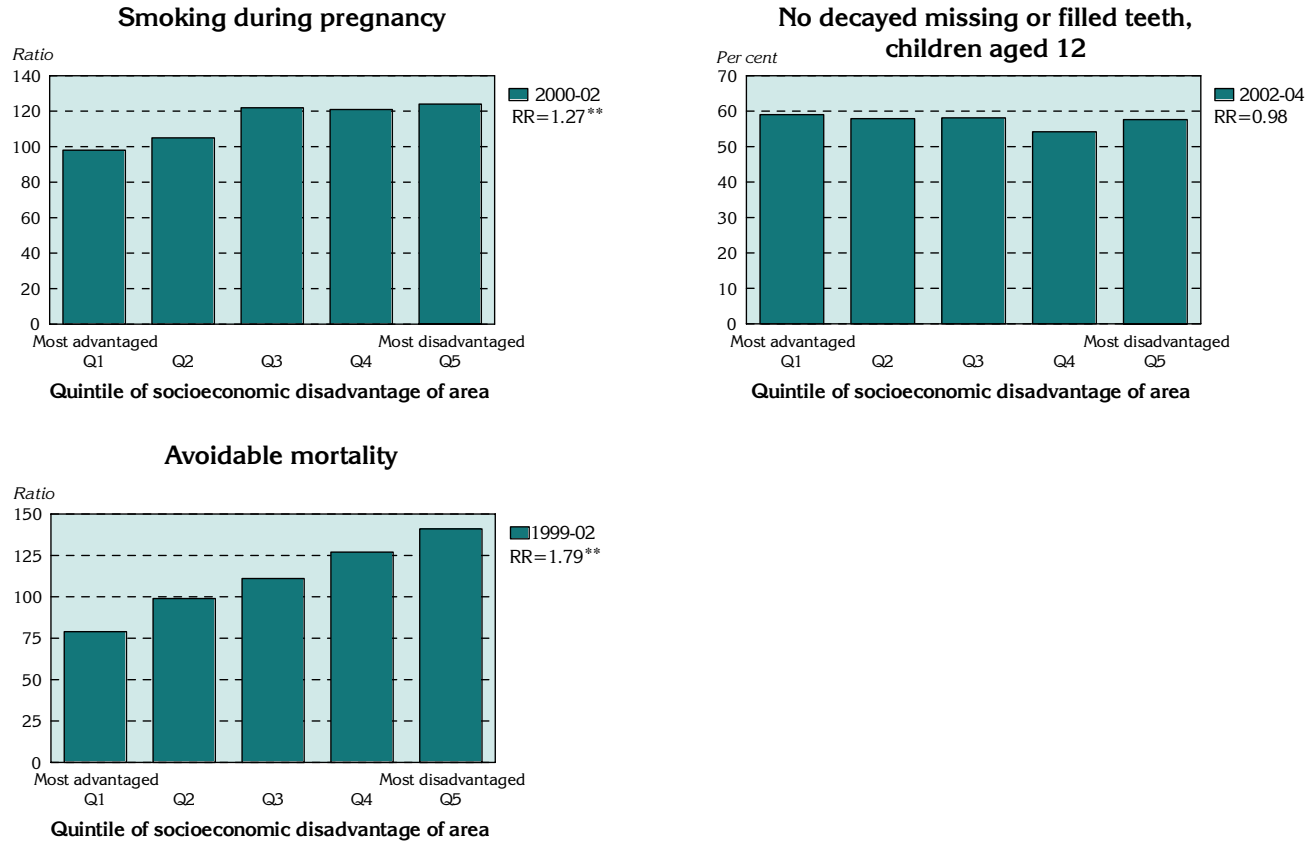


Figure 9.10: Indicators of health status, by socioeconomic disadvantage of area, country South Australia



Note: See referenced chapter for data definitions

Change in use of services

Metropolitan Adelaide: Chapter 7 Indicators

The change in indicators in Table 9.5 shows declines in the use of community health services and in the rate of GP services to males and females. These declines were offset by increasing admissions to hospitals and domiciliary care services.

Table 9.5: Change in indicators of service use (Chapter 7), Metropolitan Adelaide

Indicator	Period	Number		% change	
		Period 1	Period 2	No.[1]	Rate/%[2]
Community health services	1991/92: 2001/02	12,003	11,748	-2.1	-14.5
Child and Adolescent Mental Health Services	1997-99: 2001-03	2,575	2,560	-0.6	-1.5
Domiciliary care service clients	1989: 2003	7,425	9,648	30.0	33.4
Population per GP	1996/97: 2002/03	910	885	-2.7	10.0
GP services to males	1985/86: 2002/03	1,822,876	2,240,162	22.9	-13.0
GP services to females	1985/86: 2002/03	2,748,311	3,259,094	18.6	-13.6
Outpatient department attendances	1981/2003-04	627,654	990,980	57.9	n.a.
Admissions to public acute & private hospitals	1992/93:2003/04	265,980	368,141	38.4	30.9
Admissions to public acute hospitals	1992/93:2003/04	165,460	205,972	24.5	23.0
Admissions to private hospitals	1992/93:2003/04	98,818	154,381	56.2	43.9
Admissions of males	1992/93:2003/04	115,213	163,205	41.7	26.7
Admissions of females	1992/93:2003/04	150,767	204,936	35.9	30.6
Hospital booking lists	1992: 2004	2,738	3,063	11.9	6.3

[1]**Percentage change in the numbers shown between the periods shown**

[2]**Percentage change in the rate or proportion between the two time periods**

Note: See referenced chapter for data definitions

Country SA: Chapter 7 Indicators

In country South Australia, there were extremely large increases in the use of Child and Adolescent Mental Health Services and admissions to private hospitals. There were also increases in the other categories of hospital admission. The increase in population per GP (representing a decline in the supply of GPs) reflects the continuing, and seemingly growing, difficulty in attracting GPs to country South Australia. There were also declines in GP services to males and females.

Table 9.6: Change in indicators of service use (Chapter 7), country South Australia

Indicator	Period	Number		% change	
		Period 1	Period 2	No. [1]	Rate/%[2]
Child and Adolescent Mental Health Services	1997-99: 2001-03	1,102	1,764	60.1	64.3
Population per GP	1996/97: 2002/03	251	303	20.7	-11.7
GP services to males	1996: 2002/03	619,100	753,323	21.7	-6.7
GP services to females	1996: 2002/03	1,027,854	1,023,964	-0.4	-5.8
Admissions to public acute & private hospitals	1995/96: 2003/04	124,726	146,714	17.6	14.8
Admissions to public acute hospitals	1995/96: 2003/04	106,056	115,674	9.1	5.3
Admissions to private hospitals	1995/96: 2003/04	18,672	31,040	66.2	74.2
Admissions of males	1995/96: 2003/04	57,756	69,186	19.8	10.4
Admissions of females	1995/96: 2003/04	66,975	77,528	15.8	15.7

[1]**Percentage change (in the numbers shown) between the periods shown**

[2]**Percentage change in the rate or proportion between the two time periods**

Note: See referenced chapter for data definitions

Use of services by area: change over time

Indicators for which data are only available for one period are shown in Figure 9.13 and Figure 9.14.

Metropolitan Adelaide: Chapter 7 Indicators

There are strong socioeconomic gradients evident in many of the charts for use of services (Figure 9.11). The most extreme difference in use of these services is evident for community health services, where the rate ratio is an extremely high 8.31**; this is likely to reflect not only the location of these services, but their value to groups in the population with limited ability to access similar services in the private sector. There was also an increase in the difference, with the rate ratio having doubled between the two time periods.

Other indicators with marked differences in the use of services (indicated by an increase in the rate ratio) include domiciliary care service clients, GP services to males and females, outpatient department attendances, admissions to public acute hospitals and admissions to private hospitals.

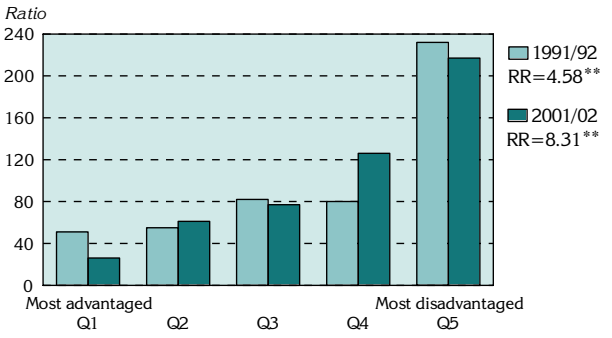
The difference in use of Child and Adolescent Mental Health Services between areas in Quintile 5 and Quintile 2 declined marginally between the two time periods, but remaining very high, with a rate ratio above two. Declines were recorded in the differences in rates of total admissions and admissions to private hospitals; however, the disparity in admissions to public acute hospitals increased. Despite declining, the differences in admissions of males and females remained above ten per cent.

There was a reduction in the extent of inequality in lengthy waits on hospital booking lists, primarily due to declines in the most disadvantaged areas; despite this reduction, the difference remains at over two and a half times.

There was a marginal decline in the rate ratio for population per GP, down to 1.15, indicating 15% more people per GP in the most disadvantaged areas. However, the lowest levels of provision of GPs were in areas in Quintile 4 (highest rate of population per GP). The rate ratio between Quintile 4 and Quintile 1 is 1.55**.

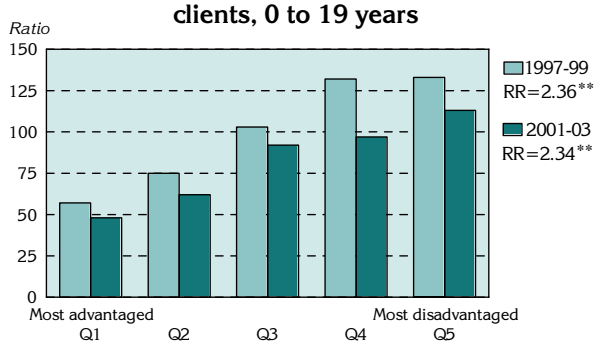
Figure 9.11: Indicators of service use (Chapter 7), change by socioeconomic disadvantage of area, Metropolitan Adelaide

Community health services



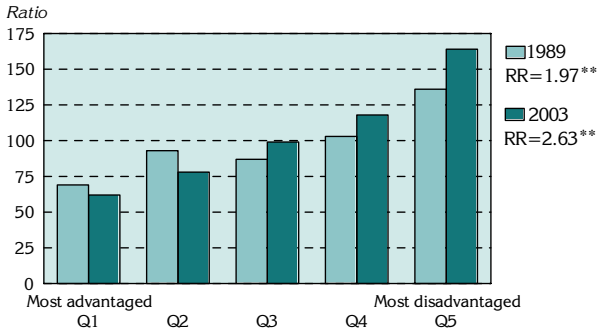
Quintile of socioeconomic disadvantage of area

Child and Adolescent Mental Health Service clients, 0 to 19 years



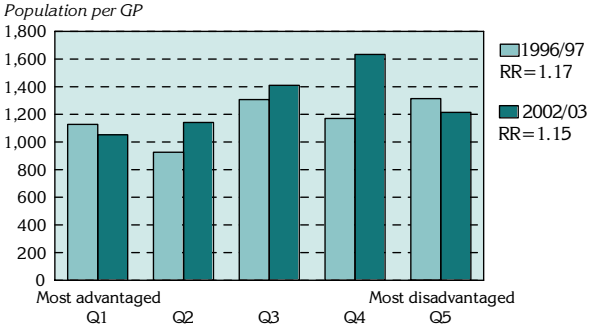
Quintile of socioeconomic disadvantage of area

Domiciliary care service clients



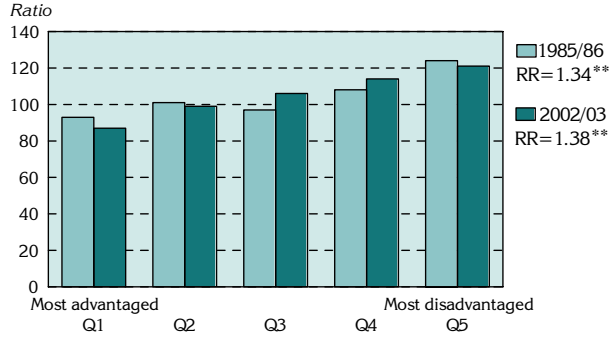
Quintile of socioeconomic disadvantage of area

Population per GP



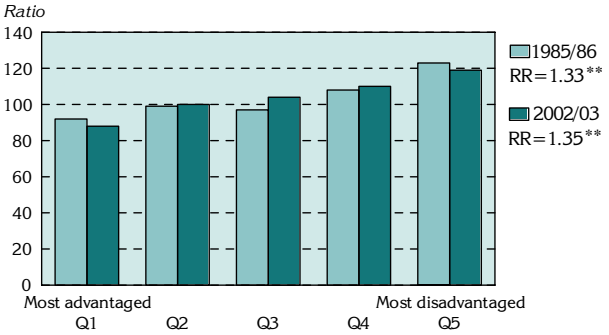
Quintile of socioeconomic disadvantage of area

GP services to males



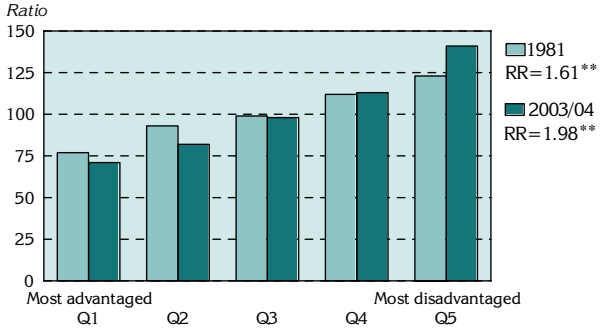
Quintile of socioeconomic disadvantage of area

GP services to females



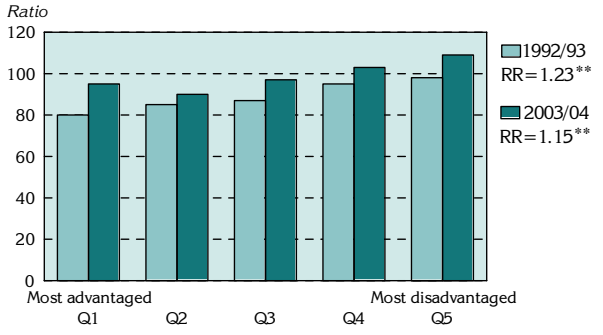
Quintile of socioeconomic disadvantage of area

Outpatient department attendances



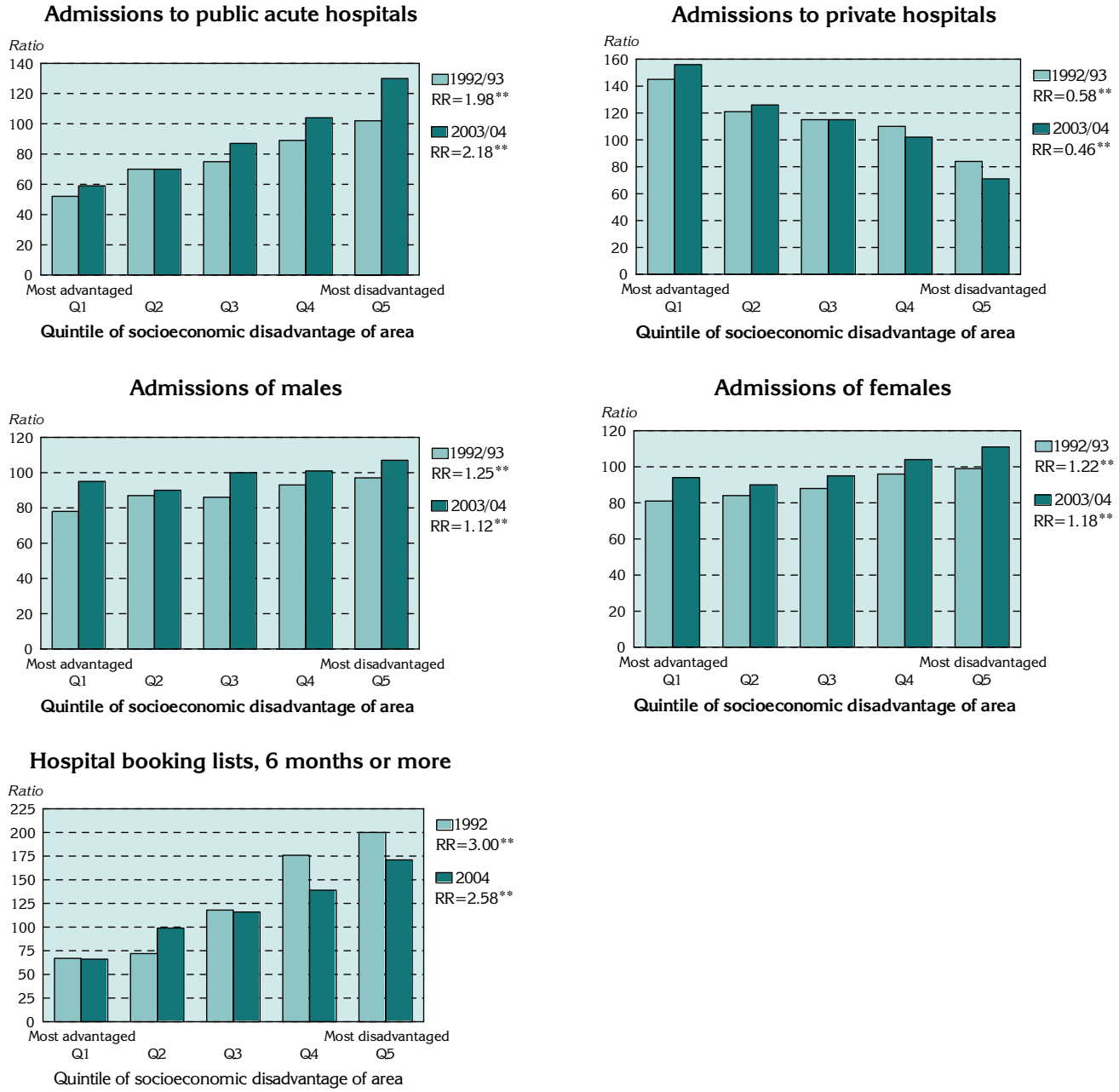
Quintile of socioeconomic disadvantage of area

Admissions to public acute and private hospitals



Quintile of socioeconomic disadvantage of area

Figure 9.11: Indicators of service use (Chapter 7), change by socioeconomic disadvantage of area, Metropolitan Adelaide ...*cont*



Note: See referenced chapter for data definitions

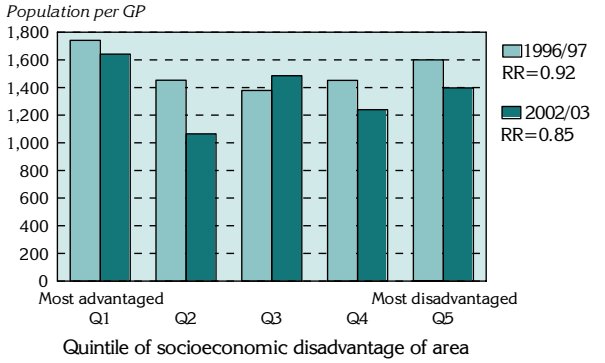
Country SA: Chapter 7 Indicators

The socioeconomic gradients in country South Australia, as for the earlier indicators, are generally less marked than those for Metropolitan Adelaide (Figure 9.12). Marked inequality was evident for each of the indicators presented here.

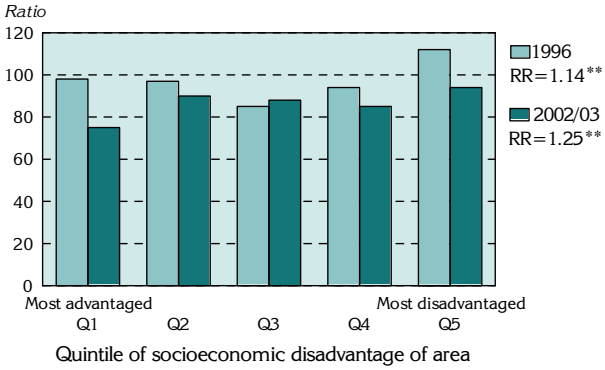
There were declines in the differences in the rate ratios for each of the hospital admission indicators; and increasing differences in the use of GP services and in population per GP.

Figure 9.12: Indicators of service use (Chapter 7), change by socioeconomic disadvantage of area, country South Australia

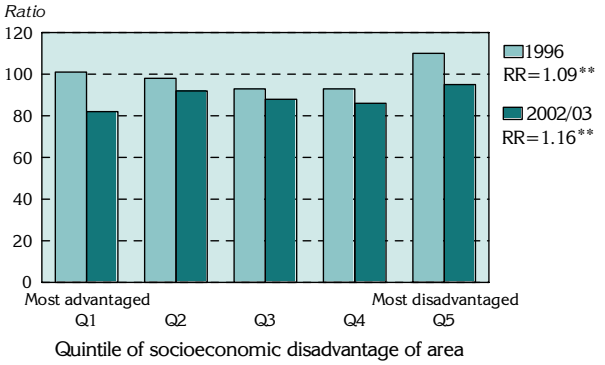
Population per GP



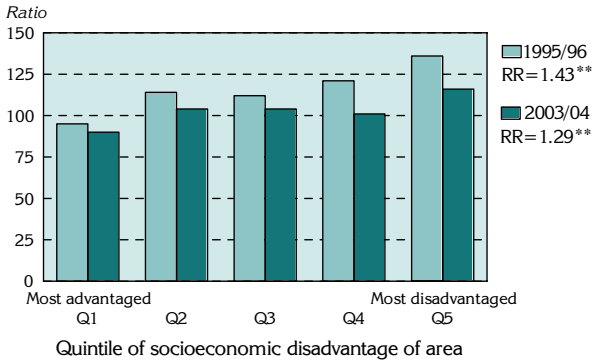
GP services to males



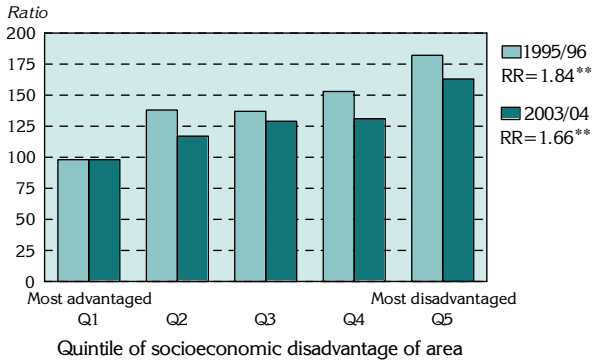
GP services to females



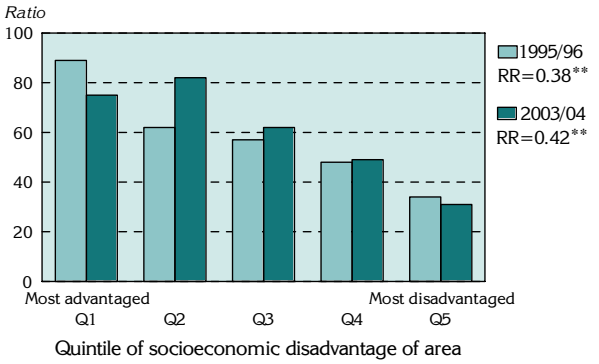
Admissions to public acute and private hospitals



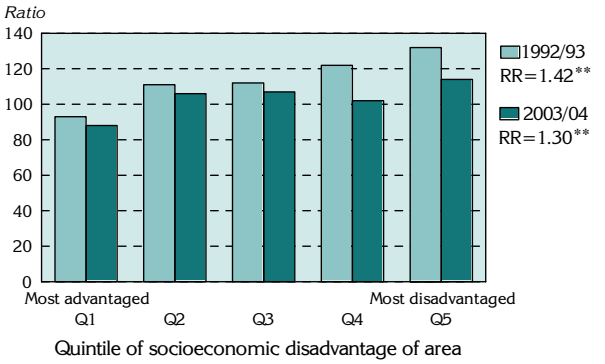
Admissions to public acute hospitals



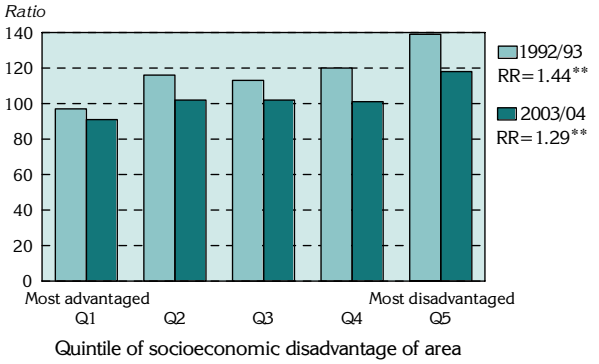
Admissions to private hospitals



Admissions of males



Admissions of females



Note: See referenced chapter for data definitions

Use of services by area

Indicators for which data are only available for one period are shown below.

Metropolitan Adelaide: Chapter 7 Indicators

High levels of inequality in use, as well as distinct socioeconomic gradients, were evident for clients of community mental health services, Department for Families and Communities and Meals on Wheels (Figure 9.13). There was also marked inequality in use for clients of Royal District Nursing Service, although the most elevated ratios were calculated for areas in Quintile 2.

The charts for cervical screening outcomes (high grade abnormality), Accident and Emergency department attendances, specialist consultations in outpatient departments and admissions of females for a hysterectomy show socioeconomic gradients of varying strengths.

The reverse pattern, with higher rates in more advantaged quintiles, was evident for cervical screening participation, specialist consultations under Medicare, private health insurance, admissions for a myringotomy and admissions for a Caesarean section.

Figure 9.13: Indicators of service use (Chapter 7), by socioeconomic disadvantage of area, Metropolitan Adelaide

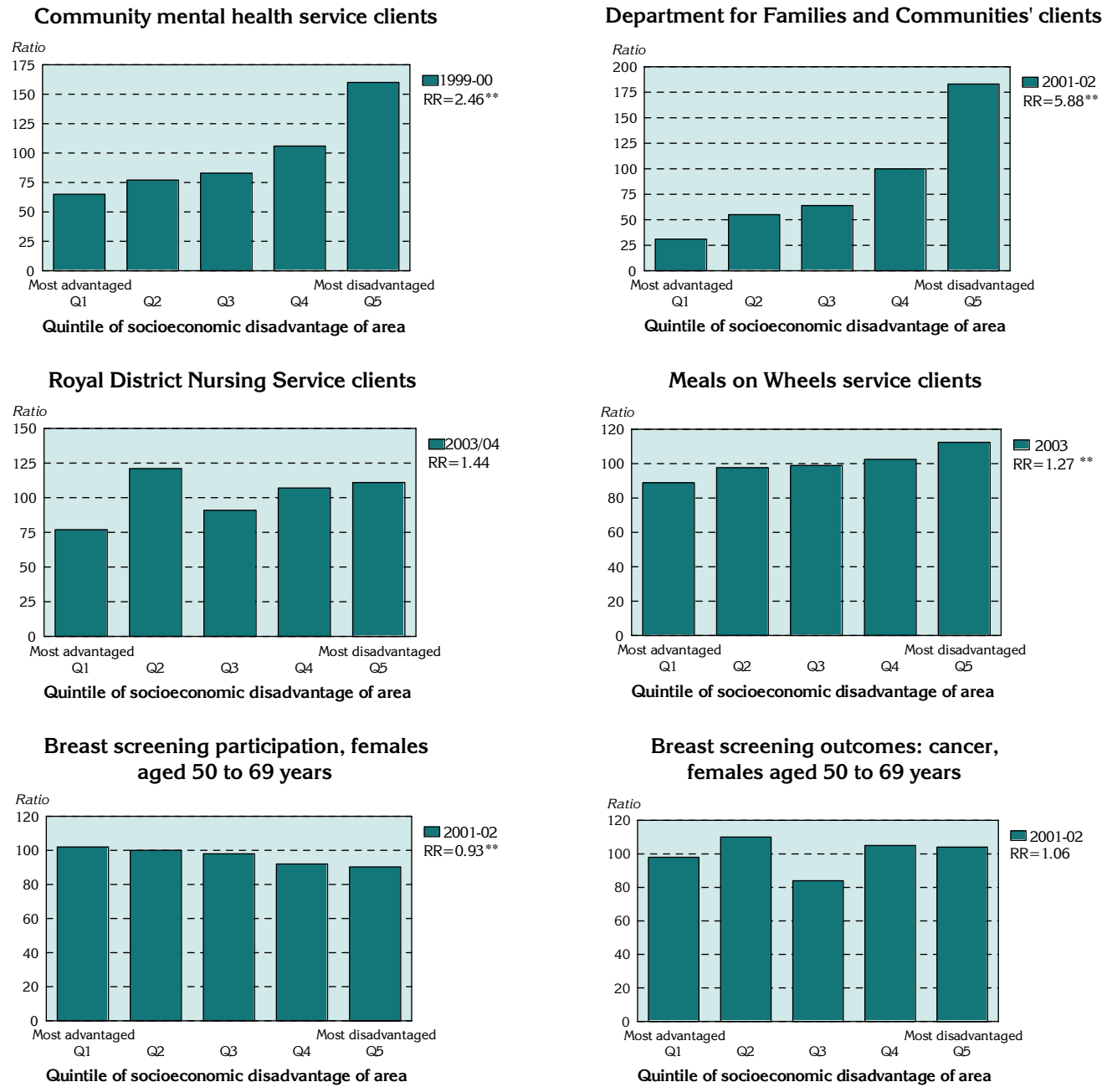
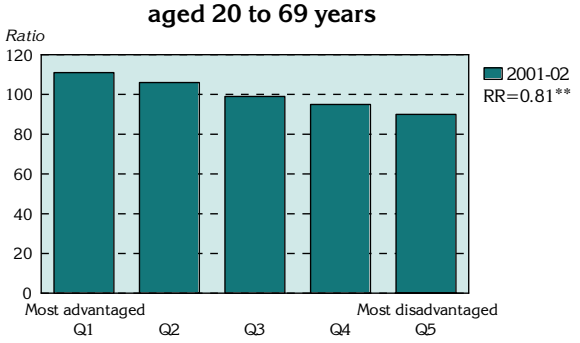


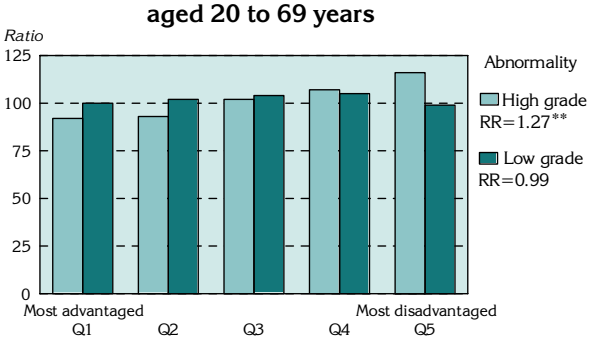
Figure 9.13: Indicators of service use (Chapter 7), by socioeconomic disadvantage of area, Metropolitan Adelaide ...*cont*

Cervical screening participation, females aged 20 to 69 years



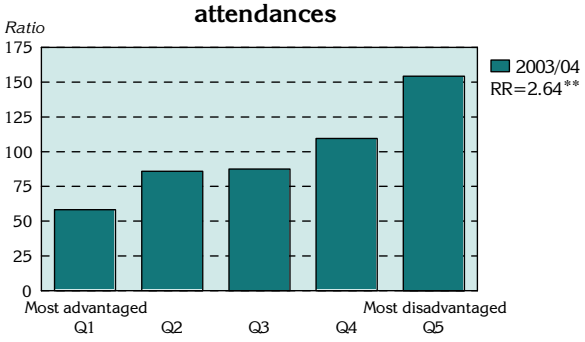
Quintile of socioeconomic disadvantage of area

Cervical screening outcomes, females aged 20 to 69 years



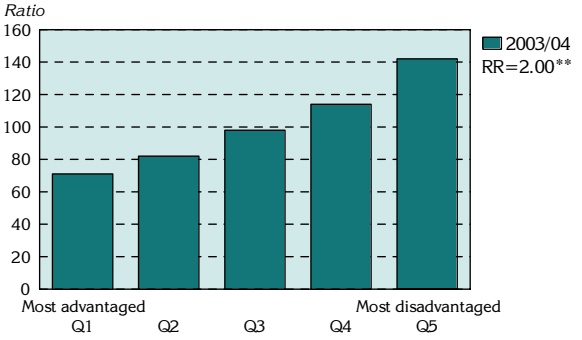
Quintile of socioeconomic disadvantage of area

Accident & Emergency department attendances



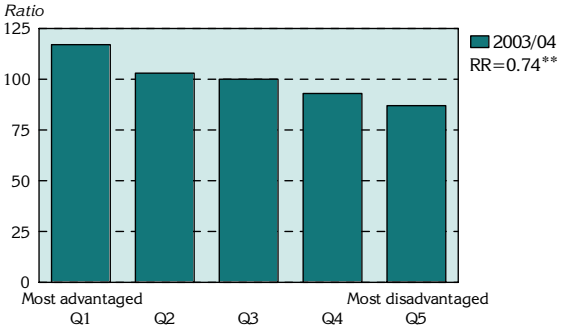
Quintile of socioeconomic disadvantage of area

Specialist consultations in OPD



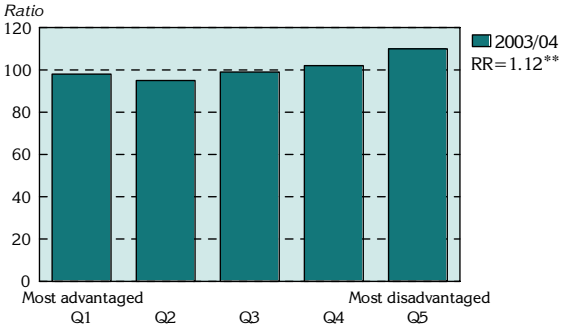
Quintile of socioeconomic disadvantage of area

Specialist consultations under Medicare



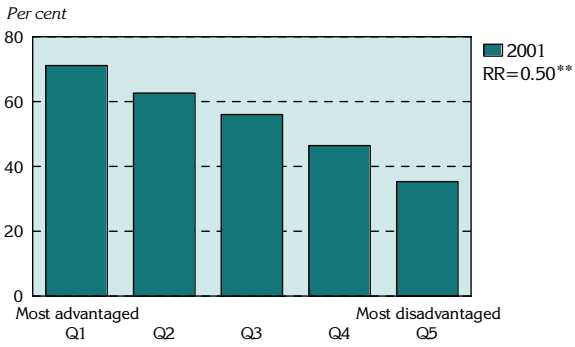
Quintile of socioeconomic disadvantage of area

Specialist consultations OPD & Medicare



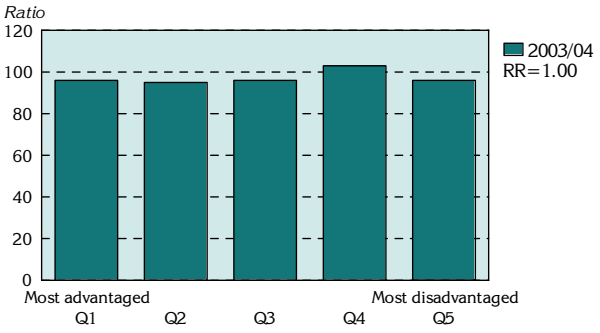
Quintile of socioeconomic disadvantage of area

Private health insurance



Quintile of socioeconomic disadvantage of area

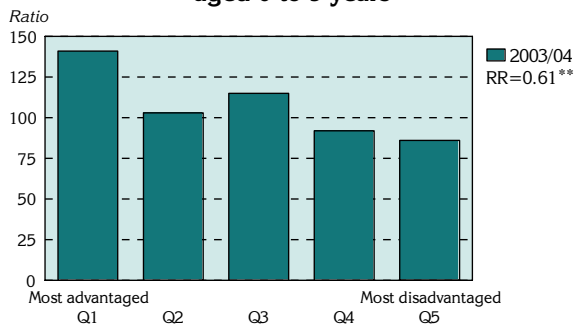
Admissions for tonsillectomy



Quintile of socioeconomic disadvantage of area

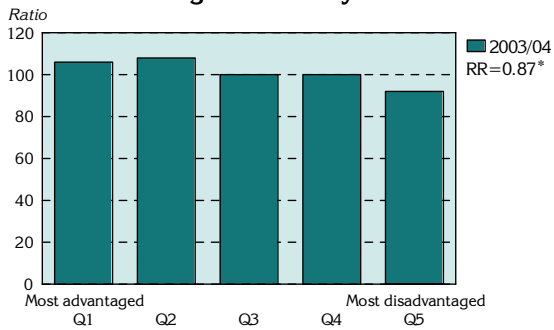
Figure 9.13: Indicators of service use (Chapter 7), by socioeconomic disadvantage of area, Metropolitan Adelaide *...cont*

Admissions for myringotomy, children aged 0 to 9 years



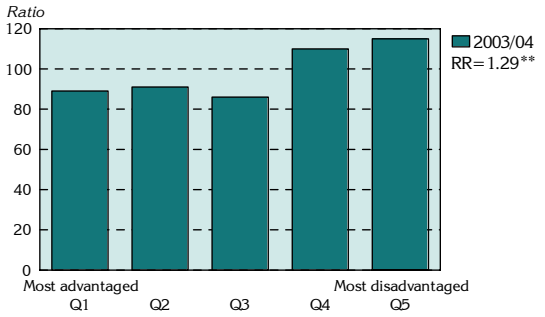
Quintile of socioeconomic disadvantage of area

Admissions for Caesarean section, females aged 15 to 44 years



Quintile of socioeconomic disadvantage of area

Admissions for hysterectomy, females aged 30 years and over



Quintile of socioeconomic disadvantage of area

Note: See referenced chapter for data definitions

Country SA: Chapter 7 Indicators

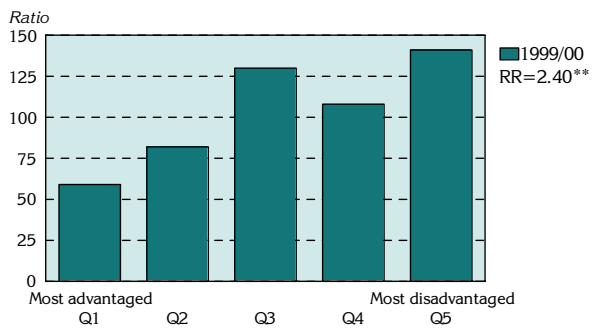
The socioeconomic gradients in country South Australia, as for the earlier indicators, are generally less marked than those for Metropolitan Adelaide, except for admissions for a tonsillectomy where Quintile 5 was the only quintile with a ratio that varied notably from 1.00 (Figure 9.14).

In country South Australia, the opposite pattern to that of Metropolitan Adelaide is apparent for admissions for a myringotomy and a Caesarean section. For myringotomy, increasing rates of admission were associated with increasing disadvantage between Quintiles 1 to 4. The gradient was not continuous, with Quintile 5 having the lowest ratio, which resulted in a rate ratio below 1.00. In contrast, the rate ratio between Quintile 4 and 1 was 1.40.

The rate ratio for hospital booking lists was 1.14; however, the most elevated ratios occurred in areas classified into Quintile 3. The rate ratio between Quintile 3 and 1 is notably higher at 1.73.

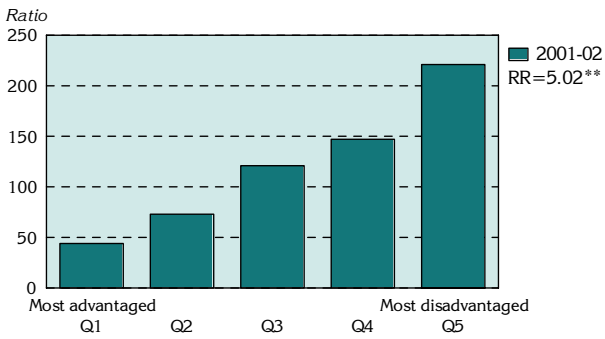
Figure 9.14: Indicators of service use (Chapter 7), by socioeconomic disadvantage of area, country South Australia

Community mental health service clients



Quintile of socioeconomic disadvantage of area

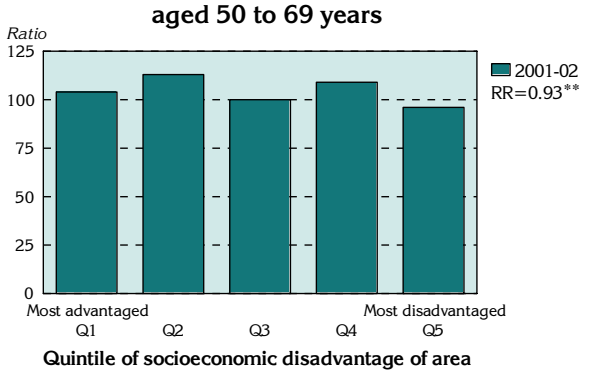
Department for Families and Communities' clients



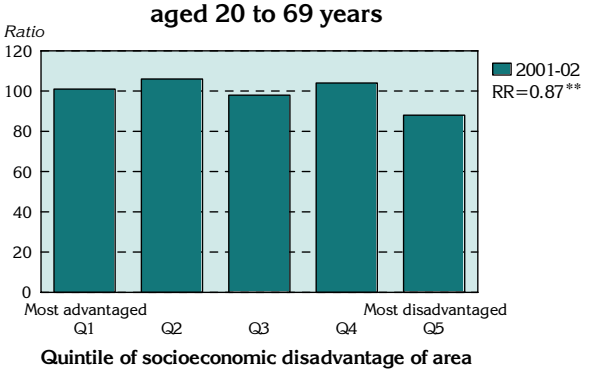
Quintile of socioeconomic disadvantage of area

Figure 9.14: Indicators of service use (Chapter 7), by socioeconomic disadvantage of area, country South Australia ...*cont*

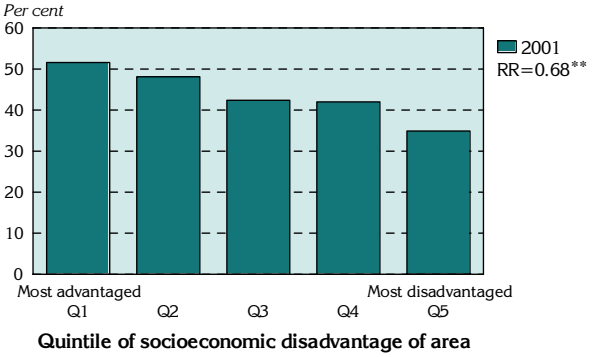
Breast screening participation, females aged 50 to 69 years



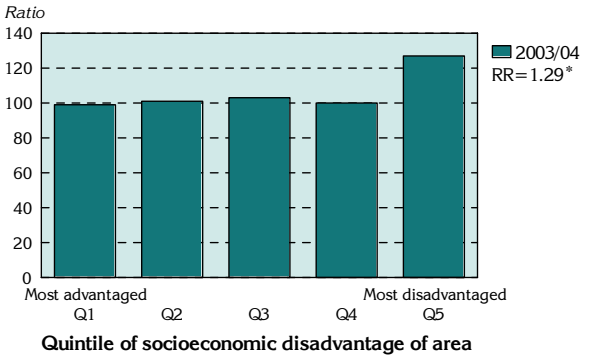
Cervical screening participation, females aged 20 to 69 years



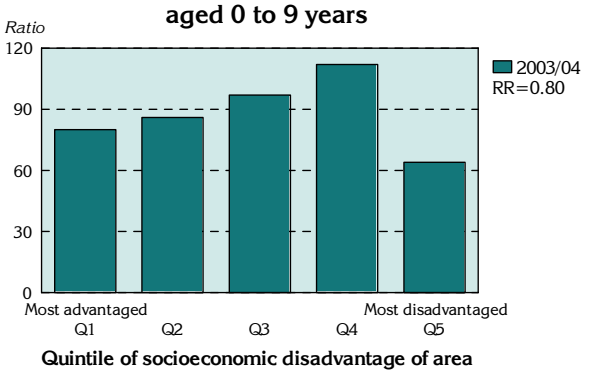
Private health insurance



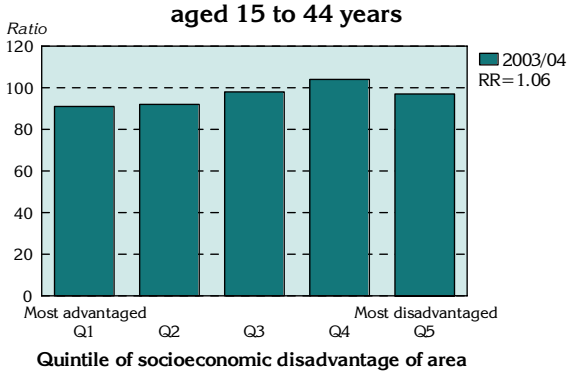
Admissions for tonsillectomy



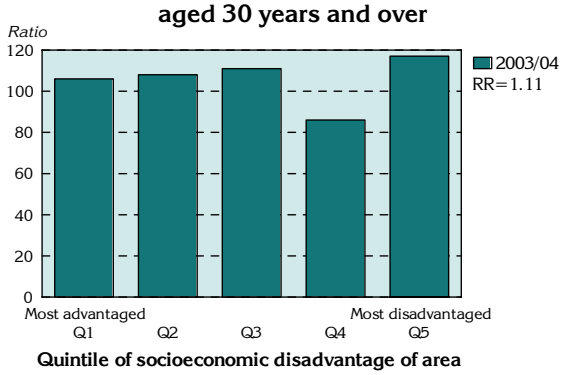
Admissions for myringotomy, children aged 0 to 9 years



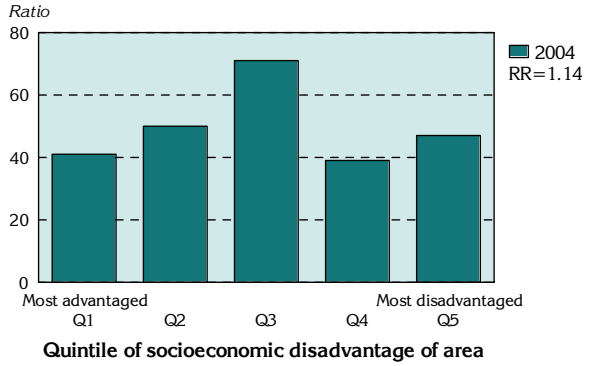
Admissions for Caesarean section, females aged 15 to 44 years



Admissions for hysterectomy, females aged 30 years and over



Hospital booking lists, 6 months or more



Note: See referenced chapter for data definitions

Summary

Trends in Metropolitan Adelaide

Of the 43 indicators for which time series data are available in Metropolitan Adelaide, six of the indicators showed both a decline in the rates or proportions for the total population, and declining differences in rates across the socioeconomic groupings of areas in Metropolitan Adelaide (Table 9.7). These indicators are: dwellings rented from the South Australian (SA) Housing Trust; poor proficiency in English; dwellings without a motor vehicle; lung cancer incidence; premature female deaths and infant deaths.

Premature death is a key indicator of inequality as it reflects, to an extent, the cumulative impact of determinants of health throughout people's lives. It is very encouraging that premature female deaths have declined, both overall and in terms of inequality. However, the level of inequality is still very high with women in the most disadvantaged quintile 51% more likely to die prematurely than those in the most advantaged quintile. The decline in infant death rates for the total population, and the level shown as the difference in rates should be viewed with caution: see comments on page 458.

Despite declines in the extent of inequality associated with these indicators, the current estimated level of inequality remains high in each case. Of particular concern are the extremely high levels of inequality associated with dwellings rented from the SA Housing Trust (a rate ratio of 10.99**) and people with poor proficiency in English (3.56**). The overall decline in dwellings rented from the SA Housing Trust is due to a reduction in the number of these dwellings following decreased funding under the Commonwealth State Housing Agreement. An increase in the numbers of Aboriginal Housing Association and Community Housing Association dwellings (Hetzel et al. 2004) has provided a small addition to the housing stock for eligible people previously dependent on SA Housing Trust properties. Rent assistance is also available to people renting privately. It is therefore difficult to assess how much of the decline in the estimated extent of inequality is associated with a real decline, and to what extent the decline reflects a necessity to seek alternative forms of accommodation.

The trend of declining inequality was also evident for a number of indicators for which the overall rate or proportion increased. Particularly large increases for the total population were observed for overweight four year old boys, disability support pensioners, prostate cancer incidence, admissions of males to hospital and low income families.

There was minimal change in the extent of inequality for more than half (58%) of the indicators in Table 9.7. Of these indicators (classified as 'stable'), nearly two thirds (61.1%) were associated with increasing rates or proportions for the total population. The increase reflects a positive outcome in the case of Aboriginal and Torres Strait Islander people (reflecting an increased preparedness to identify as such in the Census, rather than just an increase in population), educational participation at age 16 years and childhood immunisation. However, for the remaining indicators, an increased rate or proportion represents poorer social and health outcomes for the population, as well as increasing demand on services.

Some of the largest increases in the overall rate or proportion were recorded for the indicators of single parent families, total admissions, terminations of pregnancy, cancer incidence and breast cancer incidence.

Large declines were recorded in the overall rate or proportion for the indicators of unemployment, premature male deaths and GP services to both males and females, although there was little change in the estimated extent of inequality.

Increasing inequality was observed for more than one quarter of the indicators for Metropolitan Adelaide. The difference in the current rate ratio recorded for female sole parent pensioners is a very high 4.35**, with the overall rate increasing by one quarter (24.6%) over the 12-year period. There were also large increases in the overall rate or proportion for admissions to private hospitals, domiciliary care service clients, obese four year old boys and admissions to public acute hospitals.

Despite overall declines in the rates for community health service clients, unskilled and semi-skilled workers, people receiving unemployment benefits and age pensioners, increasing inequality was observed for each of these indicators. This trend can be attributed to greater declines in the rates for the most advantaged 20% of the population compared to the most disadvantaged 20% of the population. Such a trend suggests that policies impacting on these indicators have been less effective for the most disadvantaged population groups.

Table 9.7: Summary of trends by indicator: total population & extent of inequality, Metropolitan Adelaide

Indicator (see referenced chapter for data definitions)	Change in indicator for total population		Estimated extent of inequality[1]	
	Period (yrs)	%	Trend (% change)	Current
Demographic & socioeconomic status				
Total fertility rate	10	Decreased by 3.6	Stable (6.0)	1.23**
Single parent families	15	Increased by 43.3	Stable (-1.4)	2.11**
Low income families	15	Increased by 17.2	Decreasing (-19.5)	2.40**
Unemployed people	15	Decreased by 51.6	Stable (-7.3)	2.78**
Unskilled & semi-skilled workers	15	Decreased by 21.2	Increasing (61.8)	3.85**
Female labour force participation (20 to 54 years)	15	Increased by 10.0	Increasing (17.9)	0.69**
Educational participation at age 16 years	15	Increased by 5.3	Stable (-8.0)	0.81**
Aboriginal & Torres Strait Islander people	15	Increased by 72.9	Stable (-0.1)	8.24**
People born overseas[2]:				
resident in Australia for five years or more	10	Increased by 1.8	Decreasing (-22.5)	1.55**
poor proficiency in English	10	Decreased by 13.7	Decreasing (-46.9)	3.56**
Dwellings rented from the SA Housing Trust	15	Decreased by 23.7	Decreasing (-59.5)	10.99**
Dwellings without a motor vehicle	15	Decreased by 17.2	Decreasing (-58.0)	1.74**
Index of Relative Socio-Economic Disadvantage	15	n.a.	Stable (2.5)	0.79
Income support				
Age pensioners	12	Decreased by 17.5	Increasing (14.1)	1.46**
Disability support pensioners	12	Increased by 39.6	Decreasing (-20.8)	3.59**
Female sole parent pensioners	12	Increased by 24.6	Increasing (16.9)	4.35**
People receiving an unemployment benefit[3]	12	Decreased by 48.3	Increasing (15.9)	3.72**
Children in welfare-dependent & other low income families[4]	12	Increased by 6.9	Stable (2.8)	2.96**
Health status				
Low birthweight babies	10	Increased by 2.6	Increasing (23.6)	1.57
Terminations of pregnancy	10	Increased by 22.9	Stable (-6.5)	1.58**
Immunisation status at one year of age	4	Increased by 12.1	Stable (2.1)	0.98
Overweight four year old boys	6	Increased by 45.5	Decreasing (-12.6)	1.11
Obese four year old boys	6	Increased by 27.1	Increasing (12.7)	1.69**
Cancer incidence: total	11	Increased by 22.5	Stable (-9.1)	1.00
Cancer incidence: lung	11	Decreased by 5.9	Decreasing (-23.4)	1.57**
Cancer incidence: female breast	11	Increased by 20.7	Stable (-2.4)	0.82**
Cancer incidence: prostate	11	Increased by 27.1	Increasing (-16.9)[5]	0.83**
Infant deaths[6]	10	Decreased by 44.6[6]	Decreasing (-32.1)[6]	1.44[6]
Premature male deaths: ages 15-64 years	10	Decreased by 26.1	Stable (1.1)	1.90**
Premature female deaths: ages 15-64 years	10	Decreased by 16.5	Decreasing (-17.0)	1.51**
Service use				
Community health services	10	Decreased by 14.5	Increasing (81.4)	8.31**
Child and Adolescent Mental Health Services	4	Decreased by 1.5	Stable (-0.8)	2.34**
Domiciliary care service clients	4	Increased by 33.4	Increasing (33.5)	2.63**
Population per GP	6	Increased by 10.0	Stable (-1.7)	1.15
GP services to males	7	Decreased by 13.0	Stable (3.0)	1.38**
GP services to females	7	Decreased by 13.6	Stable (1.5)	1.35**
Outpatient department attendances	12	n.a.	Increasing (23.0)	1.98**
Admissions to public acute & private hospitals	11	Increased by 30.9	Stable (-6.5)	1.15**
Admissions to public acute hospitals	11	Increased by 23.0	Increasing (10.1)	2.18**
Admissions to private hospitals	11	Increased by 43.9	Increasing (20.7)	0.46**
Admissions of males	11	Increased by 26.7	Decreasing (-10.4)	1.12**
Admissions of females	11	Increased by 30.6	Stable (-3.3)	1.18**
Hospital booking lists	12	Increased by 6.3	Decreasing (-14.0)	2.58**

[1] Inequality as measured by the ratio between Quintile 5 and Quintile 1 (see page 450). Trend in inequality is classified as stable where the rate ratio differs by less than ten per cent between the two periods.
[2] Includes only people who were born in a predominantly non-English speaking country
[3] Including Community Development Employment Project (CDEP)
[4] Excludes children in families under CDEP
[5] Percentage change is positive as decreasing inequality is associated with an increase in the rate ratio
[6] See comments on page 460 regarding these data

Trends in country South Australia

Of the 38 indicators presented in Table 9.8 for country South Australia, infant deaths was the only variable to record both declining rates overall, and declining inequality. Infant death is a key indicator of inequality, reflecting access to health care and levels of disadvantage. The decrease in the rate of infant deaths in Quintiles 2 to 5 (Figure 9.8), as well as the overall declining rate, is encouraging.

The majority of indicators for hospital admissions (all except that for admissions of males) showed inequality declining. However, the current estimated extent of inequality for these indicators remains high, and overall rates of admissions increased strongly.

The estimated extent of inequality remained stable for half of the indicators in country South Australia. There was a small decline (8.6%) in the proportion of dwellings without a motor vehicle in country South Australia. However, the extent of inequality remained extreme, with those in the most disadvantaged quintile 3.61 times as likely to be without access to a motor vehicle.

Although the incidence of cancer increased markedly (for all but lung cancer, with only a small increase), the difference across the socioeconomic groupings of areas was stable over the eleven years of the data. The largest current differences in incidence rates were recorded for prostate cancer (with those in the most advantaged quintile 18% more likely to be diagnosed with prostate cancer than those in the most disadvantaged quintile) and for lung cancer (a rate ratio of 1.73**).

Large increases in the overall rate or proportion as well as persisting high levels of inequality were observed for Aboriginal and Torres Strait Islander people (reflecting an increased preparedness to identify as such in the Census, rather than just an increase in population); disability support pensioners; single parent families; and terminations of pregnancy. Smaller increases in the total rate or proportion were observed for admissions of males, unskilled and semi-skilled workers, and low birthweight babies, each of which had high but stable levels of inequality.

The proportion of children who were fully immunised at 12 months of age increased and was relatively equal across the quintiles of socioeconomic status. Female labour force participation also increased; however, women in the most disadvantaged quintile were 17% less likely to be participating in the labour force than those in the most advantaged quintile.

Inequality increased for nearly one third of the indicators (31.6%); however, the majority of these were associated with declining overall rates or proportions. The proportion of female sole parent pensioners increased by 21.0%, as did the proportion of these women experiencing disadvantage, being 2.54 times more likely to be in the most disadvantaged 20% of the population than the most advantaged. Increasing inequality was associated with marginal increases in the total proportions of low income families and educational participation at age 16 years.

Decreasing overall rates or proportions were associated with increasing inequality for nearly one quarter (23.7%) of indicators in country South Australia. The current estimated extent of inequality was most extreme for dwellings without a motor vehicle; poor proficiency in English; people receiving an unemployment benefit; and unemployed people.

Summary of current inequality (where trend data is unavailable)

Trend data on inequalities was unavailable for 48 indicators presented in this edition of the Social Health Atlas. Time series data are necessary to monitor the health and wellbeing of the population, as well as being of significant value in planning, and will be incorporated into future editions of the Social Health Atlas wherever possible.

In Metropolitan Adelaide, extremely high levels of inequality (with rate ratios 2.00 or above) were estimated for clients of the Department for Families and Communities; jobless families; attendance at Accident and Emergency departments; smoking during pregnancy; estimates of very high psychological distress levels (K-10); and specialist consultations in outpatient departments (Table 9.9).

In country South Australia, high levels of inequality were estimated for clients of the Department for Families and Communities; jobless families; community mental health service clients; admissions for a tonsillectomy; people who used the Internet at home; and private health insurance.

Table 9.8: Summary of trends by indicator: total population & extent of inequality, country South Australia

Indicator (see referenced chapter for data definitions)	Change in indicator for total population		Estimated extent of inequality[1]	
	Period (yrs)	%	Trend (% change)	Current
Demographic and socioeconomic status				
Total fertility rate	10	Decreased by 3.8	n.a.	1.09**
Single parent families	10	Increased by 48.5	Stable (3.1)	1.98**
Low income families	10	Increased by 5.3	Increasing (14.5)	1.50**
Unemployed people	10	Decreased by 58.3	Increasing (37.2)	2.58**
Unskilled & semi-skilled workers	10	Increased by 5.4	Stable (7.4)	1.30**
Female labour force participation (20 to 54 years)	10	Increased by 14.4	Stable (-3.5)	0.83**
Educational participation at age 16 years	10	Increased by 2.6	Decreasing (-12.8)	0.82**
Aboriginal & Torres Strait Islander people	10	Increased by 36.4	Stable (-1.5)	13.40**
People born overseas[2]:				
resident in Australia for five years or more	10	Decreased by 14.3	Increasing (9.6)	1.71**
poor proficiency in English	10	Decreased by 36.2	Increasing (156.9)	8.53**
Dwellings rented from the SA Housing Trust	10	Decreased by 45.9	Increasing (72.2)	15.50**
Dwellings without a motor vehicle	10	Decreased by 8.6	Stable (7.8)	3.61**
Index of Relative Socio-Economic Disadvantage	10	n.a.	Stable (1.1)	0.88
Income support				
Age pensioners	10	Decreased by 16.4	Stable (0.9)	1.15**
Disability support pensioners	10	Increased by 48.9	Stable (6.0)	2.64**
Female sole parent pensioners	10	Increased by 21.0	Increasing (29.6)	2.54**
People receiving an unemployment benefit[3]	10	Decreased by 41.3	Increasing (124.4)	5.79**
Children in welfare-dependent & other low income families[4]	10	Decreased by 15.8	Increasing (31.1)	1.77**
Health status				
Low birthweight babies	10	Increased by 7.4	Stable (-4.2)	1.15
Terminations of pregnancy	10	Increased by 32.0	Stable (1.6)	1.25**
Immunisation status at one year of age	4	Increased by 12.9	Stable (1.0)	0.98
Overweight four year old boys	6	Increased by 74.8	Decreasing (-26.1)	0.99
Obese four year old boys	6	Increased by 30.5	Stable (-6.2)	1.06
Cancer incidence: total	11	Increased by 21.0	Stable (-3.6)	1.07*
Cancer incidence: lung	11	Increased by 1.6	Stable (3.0)	1.73**
Cancer incidence: female breast	11	Increased by 21.1	Stable (-6.1)	0.93
Cancer incidence: prostate	11	Increased by 25.9	Stable (-3.5)	0.82*
Infant deaths	10	Decreased by 66.2	Decreasing (-22.6)	1.44*
Premature male deaths: ages 15-64 years	10	Decreased by 28.0	Increasing (46.1)	1.87**
Premature female deaths: ages 15-64 years	10	Decreased by 10.2	Increasing (27.0)	1.55**
Service use				
Population per GP	6	Decreased by 11.7	Stable (-7.6)	0.85
GP services to males	6	Decreased by 6.7	Increasing (9.6)	1.25**
GP services to females	6	Decreased by 5.8	Stable (6.4)	1.16**
Admissions to public acute & private hospitals	8	Increased by 14.8	Decreasing (-9.8)	1.29**
Admissions to public acute hospitals	8	Increased by 5.3	Decreasing (-9.8)	1.66**
Admissions to private hospitals	8	Increased by 74.2	Increasing (10.5)	0.42**
Admissions of males	8	Increased by 10.4	Stable (-8.5)	1.30**
Admissions of females	8	Increased by 15.7	Decreasing (-10.4)	1.29**

[1] **Inequality as measured by the ratio between Quintile 5 and Quintile 1 (see page 450). Trend in inequality is classified as stable where the rate ratio differs by less than ten per cent between the two periods.**
[2] **Includes only people who were born in a predominantly non-English speaking country**
[3] **Including Community Development Employment Project (CDEP)**
[4] **Excludes children in families under CDEP**

Table 9.9: Summary of current inequality (trend data not available)

Indicator	Estimated extent of inequality[1]	
	Metropolitan Adelaide	Country SA
Demographic and socioeconomic status (Chapters 4 & 5)		
Jobless families	4.12**	2.66**
People who used the Internet at home	0.48**	0.69**
Publicly examined subject achievement scores	0.85**	0.90**
Publicly assessed subject achievement scores	0.83**	0.92
School assessed subject achievement scores	0.81**	0.87**
People born overseas[3] and resident for less than five years	1.11**	n.a.
Income support		
Rent assistance	1.41**	1.25**
Health status		
Smoking during pregnancy	2.32**	1.27**
No decayed, missing or filled teeth, for children aged 12 years	0.84**	0.98
Estimates of respiratory system diseases	1.01*	n.a.
Estimates of asthma	0.99	n.a.
Estimates of circulatory system diseases	1.08**	n.a.
Estimates of diabetes type 2	1.41**	n.a.
Estimates of mental and behavioural problems	1.32**	n.a.
Estimates of musculoskeletal system diseases	1.05**	n.a.
Estimates of arthritis	1.16**	n.a.
Estimates of osteoarthritis	1.10**	n.a.
Estimates of females with osteoporosis	1.11**	n.a.
Estimates of injury events	0.92**	n.a.
Estimates of very high psychological distress levels (K-10), aged 18 years and over	2.01**	n.a.
Estimates of fair or poor self-assessed health status, aged 15 years and over	1.41**	n.a.
Estimates of overweight (not obese) males aged 15 years and over	0.88**	n.a.
Estimates of obese males aged 15 years and over	1.55**	n.a.
Estimates of overweight (not obese) females aged 15 years and over	0.92**	n.a.
Estimates of obese females aged 15 years and over	1.35**	n.a.
Estimates of current smokers aged 18 years and over	1.27**	n.a.
Estimates of physical inactivity, people aged 15 years and over	1.33**	n.a.
Estimates of high health risk due to alcohol consumed, aged 18 years and over	0.93**	n.a.
Avoidable mortality	1.72**	1.79**
Service use		
Community mental health service clients	2.46**	2.40**
Department for Families and Communities' clients	5.88**	5.02**
Royal District Nursing Service clients	1.44	n.a.
Meals on Wheels' clients	1.27**	n.a.
Breast screening participation, females aged 50 to 69 years	0.93**	0.93**
Breast screening outcomes: cancer, females aged 50 to 69 years	1.06	n.a.
Cervical screening participation, females aged 20 to 69 years	0.81**	0.87**
Cervical screening outcomes: high grade abnormality	1.27**	n.a.
Cervical screening outcomes: low grade abnormality	0.99	n.a.
Accident & Emergency department attendances	2.64**	n.a.
Specialist consultations in outpatient departments	2.00**	n.a.
Specialist consultations under Medicare	0.74**	n.a.
Specialist consultations in outpatient departments & under Medicare	1.12**	n.a.
Private health insurance	0.50**	0.68**
Admissions for a tonsillectomy	1.00	1.29*
Admissions for a myringotomy	0.61**	0.80
Admissions for a Caesarean section, females aged 15 to 44 years	0.87*	1.06
Admissions for a hysterectomy, females aged 30 years and over	1.29**	1.11
Hospital booking lists	n.a.	1.14

[1] **Inequality as measured by the ratio between Quintile 5 and Quintile 1 (see page 450)**

Appendix

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Appendix 1.1: Project resources and outputs

Software

The main software products used in the production of this atlas were:

HealthMap – mapping (see box, opposite)

Harvard Graphics - charting

Microsoft Excel – calculation of percentages, rates, data standardisation, correlations

Microsoft Word – word processing, production of PDFs for publishing.

Production

The text, tables, graphs and maps were collated in Microsoft Word (the maps and graphs were pasted into frames in the document). When editing was completed, the word processing files were printed to PDFs as 'final copy'. These were sent to the printer and electronically transferred to plates for offset printing.

Project output

Data in electronic and printed form

The text, maps and data can be downloaded for reading and printing from the Public Health Information Development Unit's World Wide Web site at www.publichealth.gov.au.

Also on this web site is an interactive mapping feature, which allows users to view the maps from the atlas, as well as the accompanying data.

Where errors are found in the text or data, errata sheets will be posted to the web site, as will additional analyses of relevant data.

HealthMap

HealthMap is an in-house mapping product developed to allow data with a geographic base to be mapped in a straightforward way. This is achieved by etc re designer, atlas.mdb, then HealthMap.

pasting the area code (eg. postcode number, SLA code) and the data into a spreadsheet, from where the map areas are in-filled with the colour or shade for the particular value.

The package provides a range of options for selecting colours or shades, for setting to different map projections, etc.

Appendix 1.2: Geographic areas

The following notes are intended to amplify and explain points raised in Chapter 2, Methods, as to the areas used in the atlas.

Areas mapped

Statistical Local Areas

The area mapped is, in the majority of cases, the Statistical Local Area (SLA), an area defined by the Australian Bureau of Statistics for the presentation and analysis of data. In South Australia, SLAs are equivalent to, or smaller than, Local Government Areas (LGAs): the areas of the State not incorporated into LGAs are also designated as SLAs. In Adelaide, most Local Government Areas (LGAs) have been split into two or more SLAs: only Adelaide, Prospect and Walkerville LGA are not split, so the LGA is equivalent to the SLA. Charles Sturt is an example of a split LGA: it is comprised of four SLAs - Coastal, Inner East , Inner West and North-East. These SLAs date from 1998 when the existing SLAs (the majority of which were whole LGAs) were determined to be too large for most statistical purposes.

In country South Australia, fewer LGAs are split into SLAs. In fact, the formation of the current SLAs is the reverse of that in Adelaide. In 1998 there were perceived to be too many LGAs, and the numbers were reduced by amalgamation etc. New SLAs were designed at this time, with some equivalent to whole LGAs (eg Mallala SLA is equivalent to Mallala (DC)) and some reflecting the old, pre-amalgamation structure. For example, Barmera (DC) and Berri (DC) were amalgamated to form Berri and Barmera (DC), with two SLAs, Barmera and Berri.

The SLAs mapped for the metropolitan regions are shown on the key map at the end of the atlas**.**

Urban centres (towns)

A majority of the data for non-metropolitan areas is mapped by SLA. SLAs that are wholly or predominantly urban centres (towns) have been separately identified and located on the maps as a circle. Many urban centres – including two of the largest (Port Augusta, 13,194 and Murray Bridge, 13,017) and two of medium size (Victor Harbor, 8,968 and Mount Barker, 9,153) – are not separate SLAs. Each of the SLAs covering these urban centres includes a proportion of rural population.

To increase the number of urban centres for which data could be analysed and mapped, all urban centres with a population of 1,500 or more were examined to see whether they met a set of rules relating to the extent to which they provided the majority of the population of the SLA in which they lay. The rules are shown in Table A1.

Table A1: Rules for mapping urban centres (outside of Metropolitan Adelaide)

1 If 100 per cent of an urban centre/ locality (UCL) [with a population of 1500 or more] is in an SLA ***and*** the UCL represents 80 per cent or more of the SLA, then the SLA is mapped as the urban centre.
2 If an UCL is located in ***two*** SLAs and the largest part represents 80 per cent or more of a single SLA, it is mapped provided the part in another SLA represents less than 20 per cent of the total UCL population: in this case it is mapped as the area represented by the host SLA [i.e. by the population relating to the major part].
3 If the above two conditions are met, a further requirement is that the population be largely comprised of usual residents.

Using this approach, eleven of the thirty eight urban centres in the State with a population of 1,500 or more have been mapped.

The SLAs mapped for country South Australia are shown on the key map at the end of the atlas**.**

Burden of Disease areas

Estimates of the Burden of Disease provided by the Department of Health and mapped in Chapter 6 have been mapped to larger areas because of the small number of cases. These areas were also used for mapping infant deaths and are shown on the key map at the end of the atlas.

Remoteness areas

The remoteness areas in each SLA are listed in Table A2 (SLAs in the Major Cities category are not listed).

Table A2: SLAs by ASGC remoteness classes

ASGC remoteness class	ASGC remoteness class
Inner regional	**Outer regional … *cont***
Mitcham (C) - Hills	Mount Remarkable (DC)
Unincorporated Western	Unincorporated Murray Mallee
Salisbury (C) Bal	Karoonda East Murray (DC)
Onkaparinga (C) - Hackham	Renmark Paringa (DC) - Renmark
Tea Tree Gully (C) - Hills	Yorke Peninsula (DC) - North
Onkaparinga (C) - South Coast	Renmark Paringa (DC) - Paringa
Gawler (M)	The Coorong (DC)
Adelaide Hills (DC) - Central	Berri & Barmera (DC) - Berri
Adelaide Hills (DC) - Ranges	Berri & Barmera (DC) - Barmera
Playford (C) - Hills	Naracoorte and Lucindale (DC)
Playford (C) - West	Loxton Waikerie (DC) - East
Onkaparinga (C) - Hills	Peterborough (DC)
Mount Barker (DC) - Central	Robe (DC)
Adelaide Hills (DC) Bal	Orroroo/Carrieton (DC)
Adelaide Hills (DC) - North	Flinders Ranges (DC)
Mount Barker (DC) Bal	Lacepede (DC)
Barossa (DC) - Tanunda	Tatiara (DC)
Victor Harbor (DC)	**Remote**
Barossa (DC) - Barossa	Port Lincoln (C)
Light (DC)	Unincorporated Riverland
Alexandrina (DC) - Coastal	Southern Mallee (DC)
Barossa (DC) - Angaston	U Unincorporated. Whyalla
Mallala (DC)	Franklin Harbor (DC)
Alexandrina (DC) - Strathalbyn	Tumby Bay (DC)
Yankalilla (DC)	Kangaroo Island (DC)
Murray Bridge (RC)	Unincorporated Pirie
Mount Gambier (C)	Lower Eyre Peninsula (DC)
Outer regional	Yorke Peninsula (DC) - South
Clare and Gilbert Valleys (DC)	Cleve (DC)
Port Pirie C Districts (M) - City	Kimba (DC)
Wakefield (DC)	Roxby Downs (M)
Mid Murray (DC)	Unincorporated Yorke
Port Augusta (C)	Elliston (DC)
Port Pirie C Districts (M) Bal	**Very Remote**
Grant (DC)	Le Hunte (DC)
Copper Coast (DC)	Streaky Bay (DC)
Whyalla (C)	Unincorporated Lincoln
Barunga West (DC)	Unincorporated Flinders Ranges
Northern Areas (DC)	Coober Pedy (DC)
Wattle Range (DC) - East	Ceduna (DC)
Goyder (DC)	Unincorporated West Coast
Wattle Range (DC) - West	Unincorporated Far North
Loxton Waikerie (DC) - West	

Appendix 1.3: Analysis and presentation of data

Data ranges settings in maps

The selection of ranges for the presentation of data in the maps in this atlas takes into account a variety of factors. These are the

- data ranges used for other maps, particularly closely related maps
- number of areas in each range
- 'balance' of the visual impact of the map.

Socioeconomic groupings of areas

In addition to mapping the geographic distribution of the population, the SLAs in the metropolitan regions have been aggregated into five groups of similar socioeconomic status: these groups, presented in Chapter 9, are called quintiles. Each of the five quintiles is made up of SLAs of similar socioeconomic status: a more detailed description is provided in the box (below). The rate or proportion for each indicator has been calculated for the quintiles and is presented in a graph and a table. In this way, comparisons can be made between the populations living in areas of differing socioeconomic status.

Construction of the socioeconomic groupings of areas: the quintiles

The five groups have been constructed using the Australian Bureau of Statistics (ABS) Index of Relative Socio-Economic Disadvantage (IRSD) as the measure of each the socioeconomic status of each SLA. The SLAs in the metropolitan regions were ranked in order of their IRSD score, then five groups were formed, each with around 20% of the population. The first quintile comprises SLAs with the highest IRSD scores (most advantaged areas) and the last quintile comprises areas with the lowest IRSD scores (most disadvantaged areas). The same approach was applied to SLAs in country South Australia.

The IRSD is one of four Socio-Economic Indexes for Areas (SEIFA) produced by the ABS following the 2001 Census using data variables collected in the Census.

Standardised Ratios

Where the comparisons between areas for an indicator are likely to be affected by variations in the age profile of the area, the data have been age-standardised. This effectively means any differences in age-standardised rates between areas are reflecting the influence of factors other than age. In this atlas, the age-standardised data are presented as an index, with the South Australia or the metropolitan regions[1] as 100; an index of 110 in an area means the standardised ratio is 10% higher (for an area of its population size and structure) in the area than expected from the State rates. An index of 85 means the standardised ratio is 15% lower (for an area of its population size and structure) in the area than expected from the State rates.

Where a ratio for an area varies significantly from the State rate, the degree of statistical significance is indicated by asterisks. A single asterisk indicates that the ratio is statistically significant at the 5% confidence level, that is, that the likelihood of the observed ratio being due to chance or random error is 5%. A double asterisk indicates that the observed ratio is statistically significant at the 1% confidence level.

Rate Ratio

The graph of the socioeconomic groupings of areas includes a 'rate ratio', which shows the differential between the average percentage or standardised ratio for that indicator (eg. low income families) in the most disadvantaged areas (Quintile 5) and the most advantaged areas (Quintile 1). The statistical significance of rate ratios is shown with an asterisk(s), as described above.

Indicators

Table A3 provides the data sources for the indicators mapped.

[1] Data were standardised to the metropolitan regions where data were not available for the State as a whole (eg. domiciliary care and community health services and the estimates of chronic diseases)

Table A3: Data sources

Chapter	Data source
Chapter 4	Data largely from the ABS Basic or Usual Residents Profiles, 2001: exceptions are - the Total Fertility Rate (calculated from births data purchased from ABS) - jobless families and educational participation variables (purchased from ABS) - unemployment data (purchased from DEWR) - the SACE achievement scores, supplied by SSABSA - rent assistance data, purchased from Centrelink9 and - the IRSD (from SEIFA database, supplied by ABS).
Chapter 5	Data were purchased from Centrelink.
Chapter 6	Perinatal data (low birthweight, pregnancy outcomes, termination of pregnancy and smoking in pregnancy) from Pregnancy Outcome Unit, Epidemiology Branch, Department of Health SA Immunisation data from National Centre for Immunisation Research and Surveillance, The New Children's Hospital at Westmead Childhood overweight and obesity from Child and Youth Health at the Children, Youth and Women's Health Service Dental health from SA Dental Service Chronic disease and injury prevalence estimates/ self-reported health/ risk factor prevalence produced by Australian Bureau of Statistics, in conjunction with PHIDU Cancer incidence from Health Statistics Unit, Epidemiology Branch, Department of Health SA Premature and avoidable mortality calculated from deaths data from the Australian Bureau of Statistics
Chapter 7	Primary health and community-based services: - Community health, community mental health and Child and Adolescent Mental Health Services data from Data Management Unit, Department of Health SA - Department of Families and Communities data from the Department Home and community care - Data for domiciliary care service clients from Department of Families and Communities - Home nursing from RDNS and home delivered meals from Meals on Wheels Screening test services: - Breast screening participation and outcomes data from BreastScreenSA - Cervical screening participation and outcomes data from SA Cervix Screening Program General medical practitioners: - GP services from Health Insurance Commission - Data for population per GP from Health Insurance Commission (GPs) and ABS (population) Emergency department attendances data from Emergency Department Collection Outpatient department attendances estimated from data from OACIS and MMSS Private health insurance data from Hansard Admissions data from ISAAC Booking list data from Booking List Information System

Appendix 1.4: Classification of procedures

The procedures mapped were defined using the ICD-10-AM codes shown in Table A4.

Table A4: ICD-10-AM codes for surgical procedures, mapped in Chapter 7

Surgical procedure	ICD-10-AM code
Tonsillectomy with/ without adenoidectomy	41786-01, 41787-01, 41789-00, 41789-01
Myringotomy	41632-00, 41632-01
Caesarean section	16520-00, 16520-01, 16520-02, 16520-03
Hysterectomy	35653-00, 35653-01, 35653-02, 35653-03, 35657-00, 35661-00, 35664-00, 35664-01, 35667-00, 35667-01, 35670-00, 35673-00, 35673-01, 35750-00, 35753-00, 35753-01, 35756-00, 35756-01, 35756-02, 90450-00, 90450-01

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Appendix 1.5: Synthetic estimates for small areas

Chronic diseases and associated risk factors

The data for chronic conditions and risk factors for SLAs presented in Chapter 6 have been estimated from the 2001 National Health Survey (NHS), conducted by the ABS: the next section includes a description of the synthetic estimation process The NHS sample includes the majority people living in private households, but excludes the most remote areas of Australia. These areas cover 86.4% of Australia's land mass and comprise just 3% of the total population; however, 28% of Australia's Indigenous population live in these areas. Thus it has not been possible to produce these estimates for Divisions with relatively high proportions of their population in the most remote areas of Australia.

The data for chronic conditions and risk factors are self-reported data, reported to interviewers in the 2001 NHS. Table A5 includes notes relevant to this data.

Table A5: Notes on estimates of chronic diseases and associated risk factors

Indicator	Notes on the data
Estimates of chronic disease and injury	
Long term conditions	- Respondents were asked whether they had been diagnosed with any long term health condition (a condition which has lasted or is expected to last for 6 months or more), and were also asked whether they had been told by a doctor or nurse that they had asthma, cancer, heart and circulatory conditions, and/or diabetes
Injury event	- Injuries which occurred in the four weeks prior to interview
Estimates of measures of self-reported health	
Very high psychological distress levels (K10)	- Derived from the Kessler Psychological Distress Scale-10 items (K-10), which is a scale of non-specific psychological distress based on 10 questions about negative emotional states in the 4 weeks prior to interview. 'Very high' distress is the highest level of distress category (of a total of four categories) .
Fair or poor self-assessed health status	- Respondent's general assessment of their own health, against a five point scale from excellent through to poor – 'fair' or 'poor' being the two lowest in the scale
Estimates of selected risk factors	
Overweight (not obese)	- Based on self-reported height and weight; BMI calculated and grouped into categories (to allow reporting against both WHO and NHMRC guidelines) - overweight: 25.0 to less than 30.0
Obese	- Based on self-reported height and weight; BMI calculated and grouped into categories (to allow reporting against both WHO and NHMRC guidelines) – obese: 30.0 and greater
Smokers	- Respondent's undertaking regular (or daily) smoking at the time of interview
Physical inactivity	- Did not exercise in the two weeks prior to interview through sport, recreation or fitness (including walking) – excludes incidental exercise undertaken for other reasons, such as for work or while engaged in domestic duties.
High health risk due to alcohol consumed	- Respondent's estimated average daily alcohol consumption in the seven days prior to interview (based on number of days and quantity consumed). Alcohol risk levels were grouped according to NHMRC risk levels for harm in the long term, with 'high risk' defined as a daily consumption of more than 75 ml for males and 50 ml for females.

Note: For a full description, refer to *ABS 2001 National Health Survey,* Cat. No. 4364.0 and *ABS 2001 Health Risk Factors, Cat. No.* 4812.0. Refer to ABS website.

Synthetic estimation for small areas

Introduction

Statistics for small geographic areas are generally available only through the use of administrative sources or the population census. Although household surveys contain much data of value, they provide estimates at a broad geographic level, usually at the State or Territory level, and for other regions with large populations. Estimates are rarely available for small areas such as the Statistical Local Area (SLA) mapped in this atlas.

Estimates produced from sample surveys are subject to two types of error: non-sampling errors which arise from errors in collecting, recording and processing the data; and sampling errors which arise because a sample, rather than the entire population is surveyed. The sampling error tends to increase as the sample size decreases. Thus estimates produced from small samples can be subject to such high sample errors as to make them too unreliable for most practical purposes. For household surveys, SLAs typically have small samples or they are not sampled at all; therefore, reliable direct survey estimates are not available.

Through the use of synthetic estimation techniques it is possible to produce reliable region level statistics (Marker, 1999). A method of synthetic estimation was applied from the 2001 National Health Survey (NHS) to predict, at the SLA level, the number of people who:

- had long term conditions of the respiratory system; circulatory system; musculoskeletal system and connective tissue;
- had asthma
- had diabetes mellitus type 2
- had arthritis
- had rheumatoid arthritis
- had osteoarthritis
- had long term mental or behavioural disorders
- had very high psychological stress based on the Kessler 10 Scale (K10) (aged 18 years and over)
- had injury events in the previous 4 weeks requiring treatment or action
- exercised at a sedentary level in the previous 2 weeks (aged 15 years and over)
- were overweight or obese based on body mass index (BMI) (aged 15 years and over)
- were current smokers (aged 18 years and over)
- consumed alcohol in the previous week at levels which would be a high risk to health if continued (aged 18 years and over)
- had a self-assessed poor or fair health status (aged 15 years and over).

Background

Synthetic estimation predicts a value for a small geographic area based on modelled survey data and known characteristics of the area. A synthetic prediction can be interpreted as the likely value for a 'typical' area with those characteristics. The SLA is the regional level of interest for this project.

The model used for predicting small area data is determined by analysing data at a higher geographic level, in this case Australia. The relationship observed at the higher level between the characteristic of interest and known characteristics is assumed to also hold at the lower level. The predictions are made by applying the model to the small area data. This modelling technique can be considered as a sophisticated prorating of Australian estimates to the SLA level.

The process of producing the predictions consists of four parts:
- preparation of data;
- model fitting;
- synthetic prediction; and
- assessing the predictions

Preparation of data

Models from the NHS data are applied to small area data; therefore, small area variables that can be used must satisfy the following criteria. They must be:
- well related to the characteristics of interest;
- similar to variables on the 2001 NHS;
- available for similar time periods (both date and length of period); and be
- available at a similar geographic level (Australia) as well as the area of interest (SLA).

Variables that satisfy the above criteria were sourced from:
- 2001 Census of Population and Housing;
- pension data from the Department of Family and Community Services;
- pension data from the Department of Veterans' Affairs;
- health insurance data from Hansard;
- hospital separations data from the Australian Institute of Health and Welfare; and
- unreferred attendances with general medical practitioners (GPs) from Medicare.

See Table A6 for a list of the types of small area variables used.

Many of the small area variables used differed from NHS variables by definition, collection methodology, reference period and geography. In such instances, appropriate adjustments are made using information obtained by comparing counts, proportions and distributions of the common variables. For example, the income variable is

available to the nearest dollar from the NHS, but the small area variable sourced from the Census is available by income range only. This requires the NHS income data to be classified to similar ranges. A comparison of the counts and distributions of persons across the income ranges indicated that income data from the NHS and Census were sufficiently well aligned for the purposes of prediction. Some variables required conversion of their geography from postcode to SLA (2001 Australian Standard Geographical Classification).

Model fitting

The relationship between the characteristic of interest and the small area variables are modelled using data from the NHS at the Australian level. The 16 characteristics of interest were modelled independently.

The models applied take the linear form:

$$Y = po + p1X1 + p2X2 + p3X3 + ... + pjXj$$

where

- Y is the characteristic of interest
- Xi are the small area variables
- pi are the coefficients which are produced from the modelling process.

The Y takes the value 1 if an individual has the characteristic of interest and 0 otherwise. For example, in the case of self-assessed health status the Y takes the value 1 if an individual's status is fair or poor and 0 otherwise.

Small area variables (Xi) that are categorical take the value 1 if an individual has the characteristic (e.g. has private health insurance) or 0 otherwise (e.g. does not have private health insurance) . For ordinal small area variables, Xi can take a value greater than 1 (e.g. number of times has visited a GP in the last two weeks).

The coefficients, pi, are estimated using the linear regression technique. The observations of a NHS data file are randomly split into two halves. Regression models are fitted to each of the halves as well as the whole data set. Weights are used in the regression method so the models are representative of the whole population. Variables are removed if they are not important in predicting the characteristic of interest in both the data set containing all observations and the data sets containing half the observations. The process of removing insignificant variables continues until a final linear model is obtained whereby all variables are significant ($p<0.05$ for the data set containing all observations and $p<0.15$ for the data sets containing half the observations) in the estimation of the characteristic of interest. Fitting the models to the split data sets as well as the whole data set produces more robust final models as the probability of including a variable with undesirable variability is reduced.

Table A6 summarises the types of variables that were included in the final models.

Synthetic prediction

The predictions are derived by applying the linear regression models (based on the NHS data) to the small area data. The NHS data and small area data differ in scope. The NHS covers persons residing in private dwellings across urban and rural areas and excludes persons in sparsely populated areas. The majority of the small area data are for the whole population and include persons in non-private dwellings. Therefore, the predictions are based on the assumption that the characteristics of persons in private dwellings and non-private dwellings are spread equally across the SLAs. Despite the difference in scopes, adjustments were made to ensure that the predictions of the SLAs (excluding the SLAs in sparsely populated areas) added up to the Australian estimates from the NHS.

Assessing the predictions

The models are assessed by comparing predictions against values determined directly from the NHS. For SLAs that were sampled, the direct NHS estimates are adjusted to ensure that they are representative of the SLA populations in the small area data. These adjusted NHS estimates are plotted against the predictions against the adjusted NHS estimates to determine if there are reasonable relationships between the predictions and NHS estimates.

The 95% confidence intervals are calculated for the adjusted NHS estimates to see if the majority of predictions fall within the confidence intervals. Another measure of the quality of the synthetic predictions can be based on how much of the difference between the predictions and adjusted NHS estimates can be explained by sampling error. If the difference between the predictions and adjusted NHS estimates is smaller than the sampling error, then we may have some assurance that the predictions are better than the adjusted NHS estimates.

Table A6: Small area variables in the final models

Small area variables	Long term conditions*														
	A	B	C	D	E	F	H	G	H	I	J	K	L	M	N
Sex	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Age	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Marital status	yes	no	yes	no	yes	yes	yes	no	yes	no	no	yes	yes	yes	no
English proficiency	yes	yes	yes	yes	no	yes	yes	no	yes	yes	yes	yes	no	yes	yes
Birthplace	yes	no	yes	no	yes	yes	no	no	no	no	yes	yes	yes	no	yes
Year of arrival	yes	yes	yes	no	no	no	no	yes	no	yes	no	yes	no	no	yes
Currently studying	no	no	no	no	no	no	no	no	no	yes	yes	no	yes	no	yes
Highest schooling	no	no	no	no	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes
Qualification	no	no	no	yes	no	no	yes	yes	yes	yes	yes	yes	yes	yes	no
Indigenous status	no	no	no	no	no	no	no	yes	no	no	no	no	yes	no	no
Metropolitan area	yes	yes	no	no	no	no	no	no	no	yes	no	yes	no	no	no
State	yes	yes	no	no	yes	yes	no	no	no	yes	yes	yes	no	no	yes
SEIFA IRSD	no	no	yes	yes	no	yes	yes	no	no	no	yes	yes	yes	yes	yes
ARIA	no	no	no	no	no	no	yes	yes	no	no	yes	no	yes	yes	yes
FACS pension	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes
DVA pension	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	no	yes	yes
Employment status	no	yes	no	no	yes	yes	yes	yes	yes	yes	yes	no	yes	no	yes
Occupation	no	no	yes	yes	yes	no	no	no	no	yes	yes	no	yes	yes	no
Industry	yes	yes	no	no	no	yes	no	yes	yes	yes	yes	yes	yes	yes	no
Personal income	yes	no	no	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes
Head & spouse income	yes	no	no	yes	yes	no	no	yes	yes	yes	no	yes	yes	yes	no
Persons in household	no	no	no	no	no	no	yes	yes	no	yes	yes	no	yes	yes	no
Family type	no	no	no	yes	yes	yes	no	yes	no	no	no	yes	yes	yes	yes
Dwelling type	no	no	yes	no	yes	yes	no	no	no	no	yes	yes	no	yes	no
Health insurance	no	no	no	no	no	no	no	no	no	no	yes	no	yes	yes	yes
GP consultation	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Hospital admission	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes

*Codes for long term conditions - A: of the respiratory system; B: asthma; C: of the circulatory system; D: diabetes type 2; E: of the musculo-skeletal system and connective tissue; F: arthritis; G: osteo-arthritis; H: Mental and behavioural disorders; I: Very high psychological distress; J: Injury events; K: Sedentary exercise levels; L: Overweight, obese; M: Current smoker; N: High risk alcohol consumption; O: Fair or poor health

Appendix 1.6: Supporting information

Tables A7, A8 and A9 provide the data on which Figures 4.1 and 4.3 are based. Table A10 has information supporting Figure 4.6.

Table A7: Population change by age and sex, Metropolitan Adelaide

Age Group	Metropolitan Adelaide							
	1986		1991		1996		2001	
	No.	% of Total	No.	% of Total	No.	% of Total	No.	% of Total
0-4	67,651	6.7	68,666	6.5	68,444	6.3	32,086	5.3
5-9	64,796	6.5	70,168	6.6	68,572	6.4	34,856	5.8
10-14	73,931	7.4	68,222	6.5	71,131	6.6	36,578	6.1
15-19	84,798	8.4	81,377	7.7	74,027	6.9	41,418	6.9
20-24	87,170	8.7	88,719	8.4	83,251	7.7	41,866	7.0
25-29	85,378	8.5	85,667	8.1	82,026	7.6	41,004	6.8
30-34	78,348	7.8	86,206	8.2	82,837	7.7	42,167	7.0
35-39	78,875	7.9	80,128	7.6	84,470	7.8	43,489	7.2
40-44	61,844	6.2	80,202	7.6	79,405	7.4	45,763	7.6
45-49	51,845	5.2	62,379	5.9	78,358	7.3	43,962	7.3
50-54	46,801	4.7	51,342	4.9	60,270	5.6	43,536	7.2
55-59	50,768	5.1	45,405	4.3	48,991	4.5	32,604	5.4
60-64	50,406	5.0	48,643	4.6	43,649	4.0	25,936	4.3
65-69	40,234	4.0	47,159	4.5	45,457	4.2	22,584	3.8
70-74	34,181	3.4	36,404	3.4	42,532	3.9	23,681	3.9
75-79	23,193	2.3	28,105	2.7	30,362	2.8	21,722	3.6
80-84	13,461	1.3	16,793	1.6	20,657	1.9	14,969	2.5
85+	10,122	1.0	11,576	1.1	14,673	1.4	13,043	2.2
Total	**1,003,802**	**100**	**1,057,161**	**100.0**	**1,079,112**	**100.0**	**601,264**	**100.0**

Table A8: Population change by age and sex, country South Australia

Age Group	Country South Australia							
	1986		1991		1996		2001	
	No.	% of Total	No.	% of Total	No.	% of Total	No.	% of Total
0-4	31,182	8.2	30,549	7.9	29,214	7.4	12,619	7.1
5-9	29,945	7.9	32,101	8.2	31,040	7.9	13,787	7.8
10-14	32,143	8.5	29,510	7.6	31,114	7.9	13,300	7.5
15-19	30,136	8.0	26,817	6.9	23,960	6.1	11,776	6.7
20-24	28,843	7.6	25,779	6.6	22,084	5.6	9,673	5.5
25-29	30,986	8.2	29,286	7.5	26,330	6.7	11,485	6.5
30-34	29,985	7.9	31,877	8.2	29,809	7.5	12,912	7.3
35-39	29,142	7.7	30,125	7.7	31,991	8.1	13,625	7.7
40-44	23,050	6.1	28,265	7.3	29,554	7.5	13,578	7.7
45-49	19,223	5.1	22,601	5.8	27,553	7.0	12,333	7.0
50-54	17,338	4.6	19,315	5.0	22,603	5.7	11,682	6.6
55-59	18,827	5.0	17,538	4.5	19,450	4.9	9,537	5.4
60-64	17,755	4.7	18,689	4.8	17,483	4.4	8,005	4.5
65-69	14,349	3.8	16,453	4.2	17,249	4.4	6,420	3.6
70-74	11,565	3.1	12,553	3.2	14,321	3.6	6,090	3.4
75-79	7,573	2.0	9,162	2.4	10,139	2.6	4,600	2.6
80-84	4,002	1.1	5,341	1.4	6,516	1.6	3,029	1.7
85+	2,704	0.7	3,177	0.8	4,731	1.2	2,344	1.3
Total	**378,748**	**100.0**	**389,138**	**100.0**	**395,141**	**100.0**	**176,795**	**100.0**

Table A9: Population change by age and sex, South Australia

Age Group	South Australia							
	1986		1991		1996		2001	
	No.	% of Total	No.	% of Total	No.	% of Total	No.	% of Total
0-4	98,833	7.1	99,215	6.9	97,658	6.6	44,705	5.7
5-9	94,741	6.9	102,269	7.1	99,612	6.8	48,643	6.3
10-14	106,074	7.7	97,732	6.8	102,245	6.9	49,878	6.4
15-19	114,934	8.3	108,194	7.5	97,987	6.6	53,194	6.8
20-24	116,013	8.4	114,498	7.9	105,335	7.1	51,539	6.6
25-29	116,364	8.4	114,953	7.9	108,356	7.3	52,489	6.7
30-34	108,333	7.8	118,083	8.2	112,646	7.6	55,079	7.1
35-39	108,017	7.8	110,253	7.6	116,461	7.9	57,114	7.3
40-44	84,894	6.1	108,467	7.5	108,959	7.4	59,341	7.6
45-49	71,068	5.1	84,980	5.9	105,911	7.2	56,295	7.2
50-54	64,139	4.6	70,657	4.9	82,873	5.6	55,218	7.1
55-59	69,595	5.0	62,943	4.4	68,441	4.6	42,141	5.4
60-64	68,161	4.9	67,332	4.7	61,132	4.1	33,941	4.4
65-69	54,583	3.9	63,612	4.4	62,706	4.3	29,004	3.7
70-74	45,746	3.3	48,957	3.4	56,853	3.9	29,771	3.8
75-79	30,763	2.2	37,267	2.6	40,501	2.7	26,322	3.4
80-84	17,463	1.3	22,134	1.5	27,173	1.8	17,998	2.3
85+	12,829	0.9	14,753	1.0	19,404	1.3	15,387	2.0
Total	**1,382,550**	**100.0**	**1,446,299**	**100.0**	**1,474,253**	**100.0**	**778,059**	**100.0**

Table A10: Data supporting chart of IRSD scores by quintile for towns, 2001

Quintile	Mt Gambier	Murray Bridge	Pt Augusta	Pt Pirie	Pt Lincoln	Victor Harbor	Whyalla
Quintile 1	1079	1024	1045	1039	1067	1061	1065
Quintile 2	1027	977	990	980	1036	1038	1000
Quintile 3	982	933	944	903	994	1010	901
Quintile 4	915	899	909	874	946	978	822
Quintile 5	787	738	845	791	775	964	762
Rate ratio*	0.73	0.72	0.81	0.76	0.73	0.91	0.72

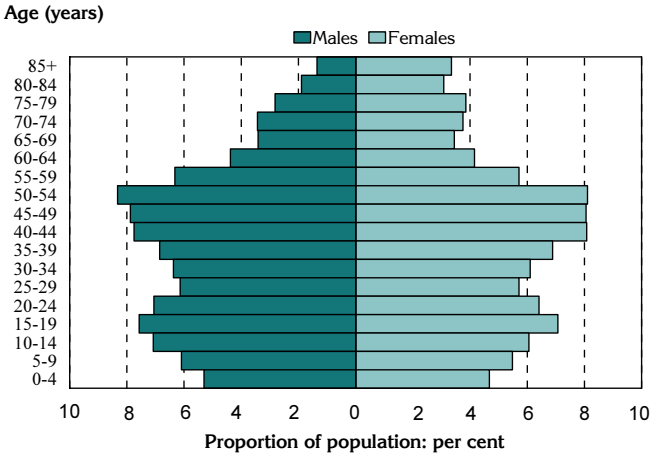
***Ratio of IRSD score in Quintile 5 to score in Quintile 1**

Figures A1 and A2 show information for Metropolitan Adelaide and country South Australia, similar to that shown for South Australia in Figure 4.4.

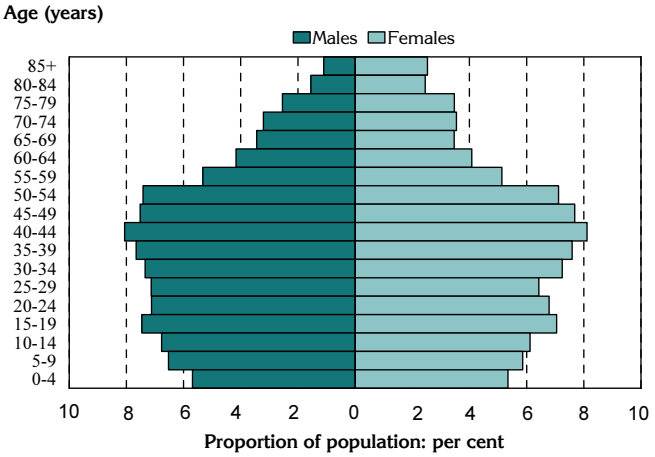
Maps A1 and A2 map the areas in each of the five socioeconomic groupings (quintiles) shown in these two figures and used for the analysis in Chapter 9.

Figure A1: Population by age and sex, by socioeconomic groupings of area, Metropolitan Adelaide

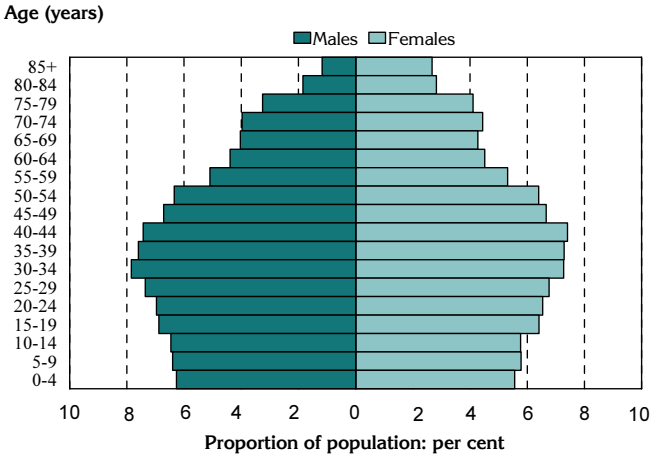
Most advantaged areas: Quintile 1



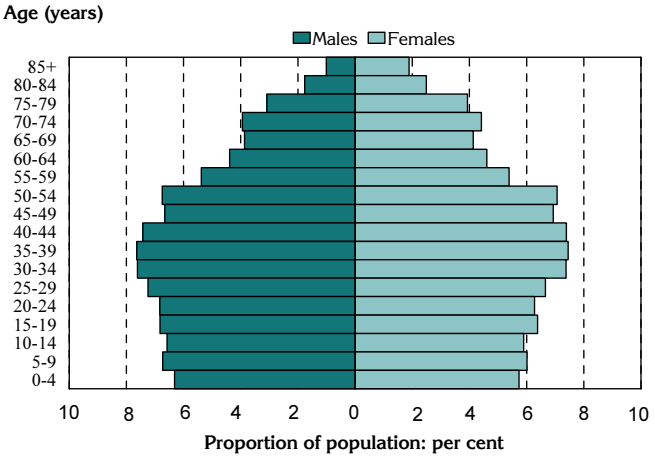
Relatively advantaged areas: Quintile 2



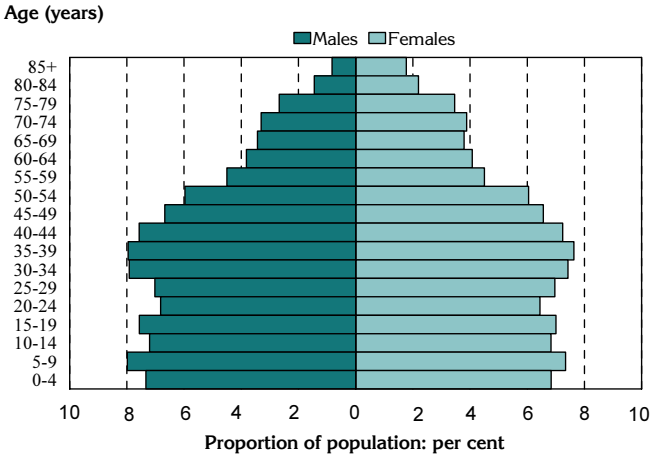
Mid-range areas: Quintile 3



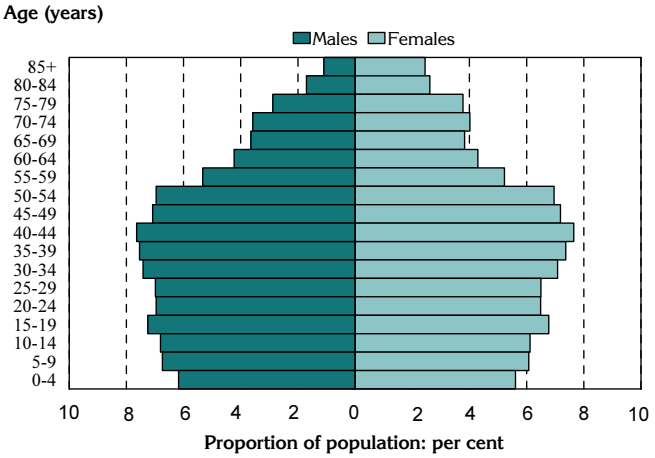
Relatively disadvantaged areas: Quintile 4



Most disadvantaged areas: Quintile 5



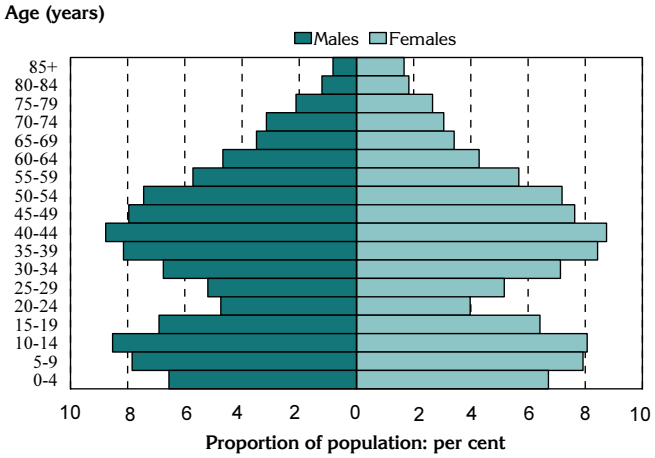
Metropolitan Adelaide



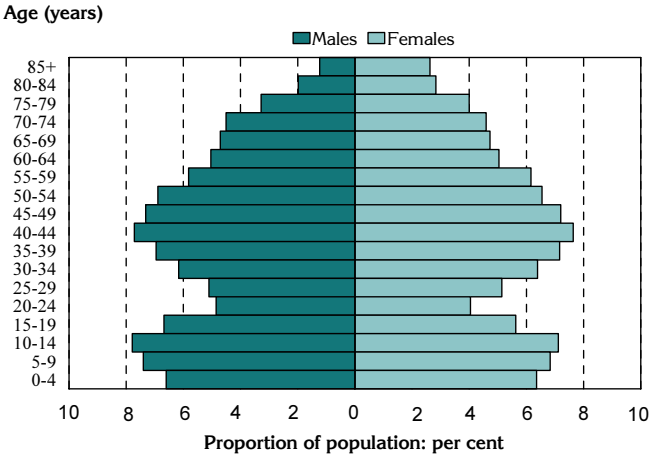
Source: Population data from ABS Usual Residents Profile 2001 and quintiles calculated from data in ABS SEIFA package

Figure A2: Population by age and sex, by socioeconomic groupings of area, country South Australia

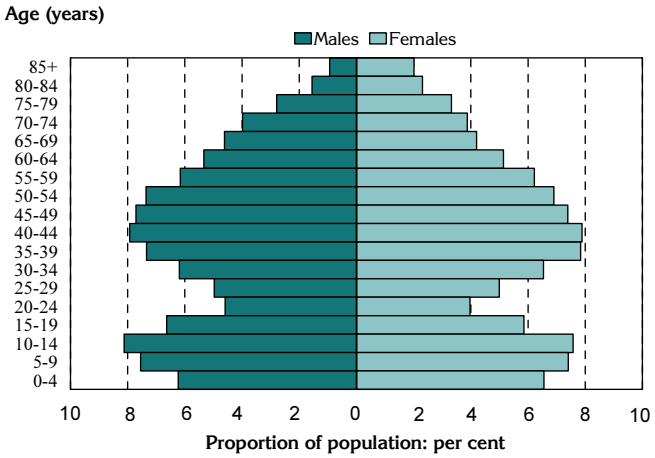
Most advantaged areas: Quintile 1



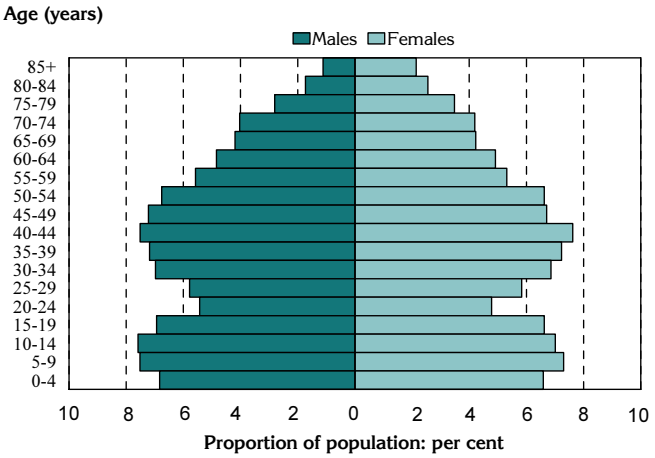
Relatively advantaged areas: Quintile 2



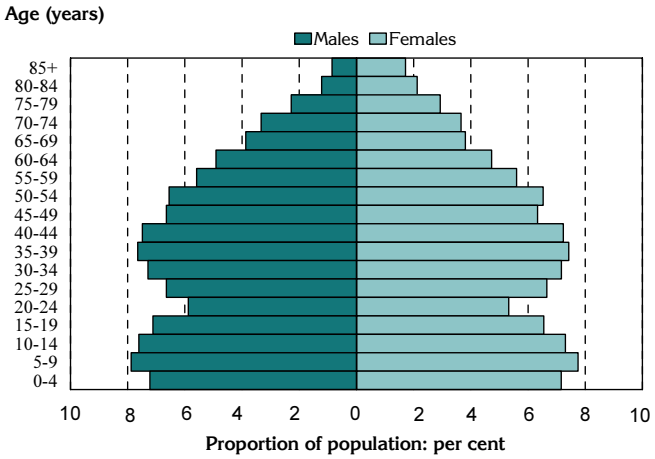
Mid-range areas: Quintile 3



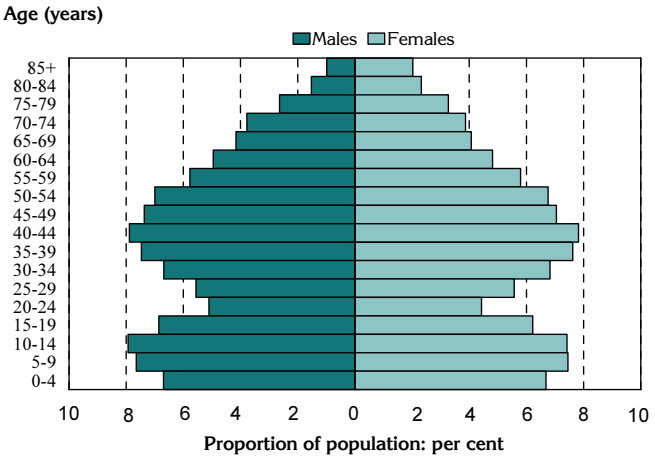
Relatively disadvantaged areas: Quintile 4



Most disadvantaged areas: Quintile 5

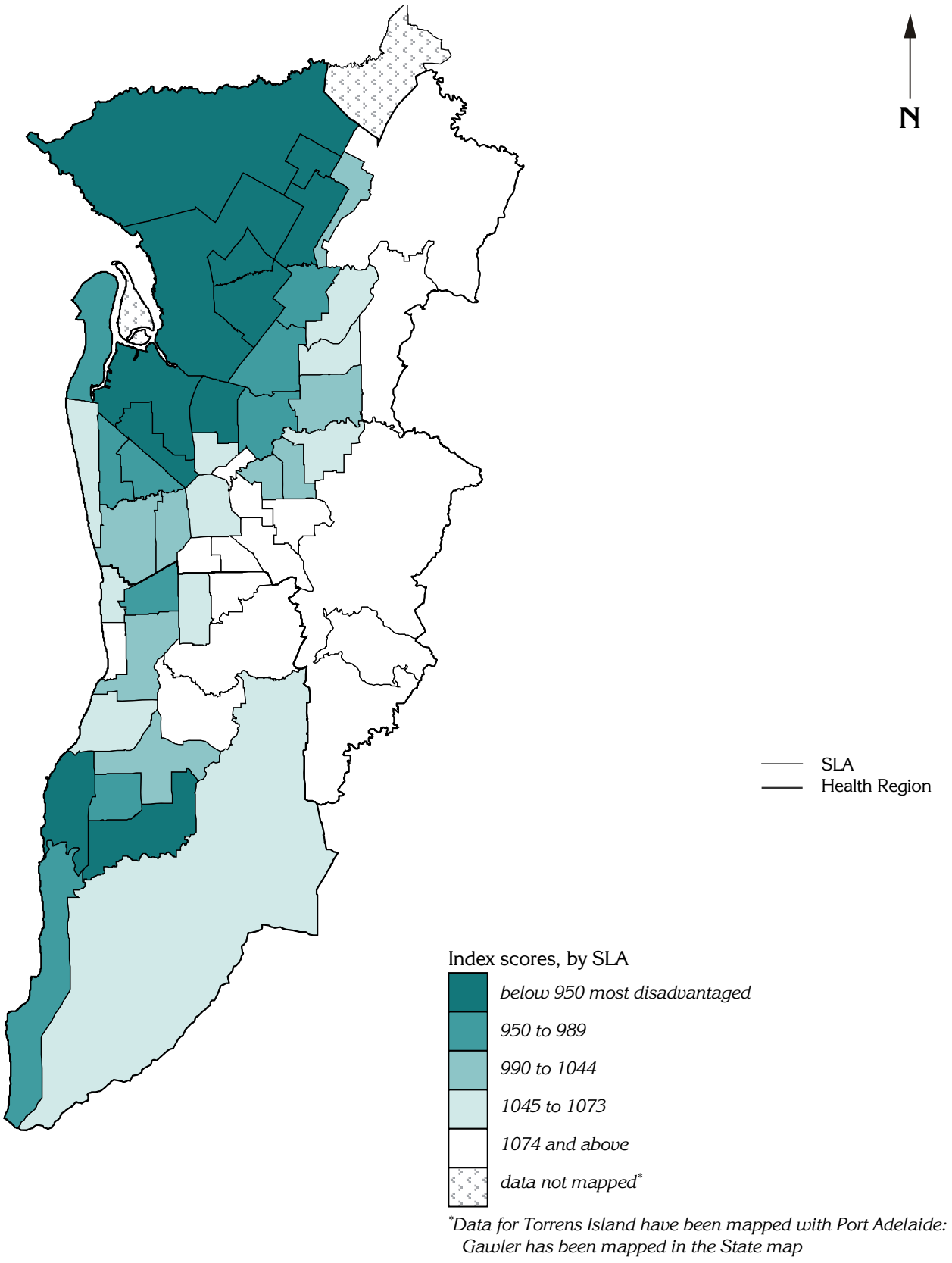


Country South Australia



Source: Population data from ABS Usual Residents Profile 2001 and quintiles calculated from data in ABS SEIFA package

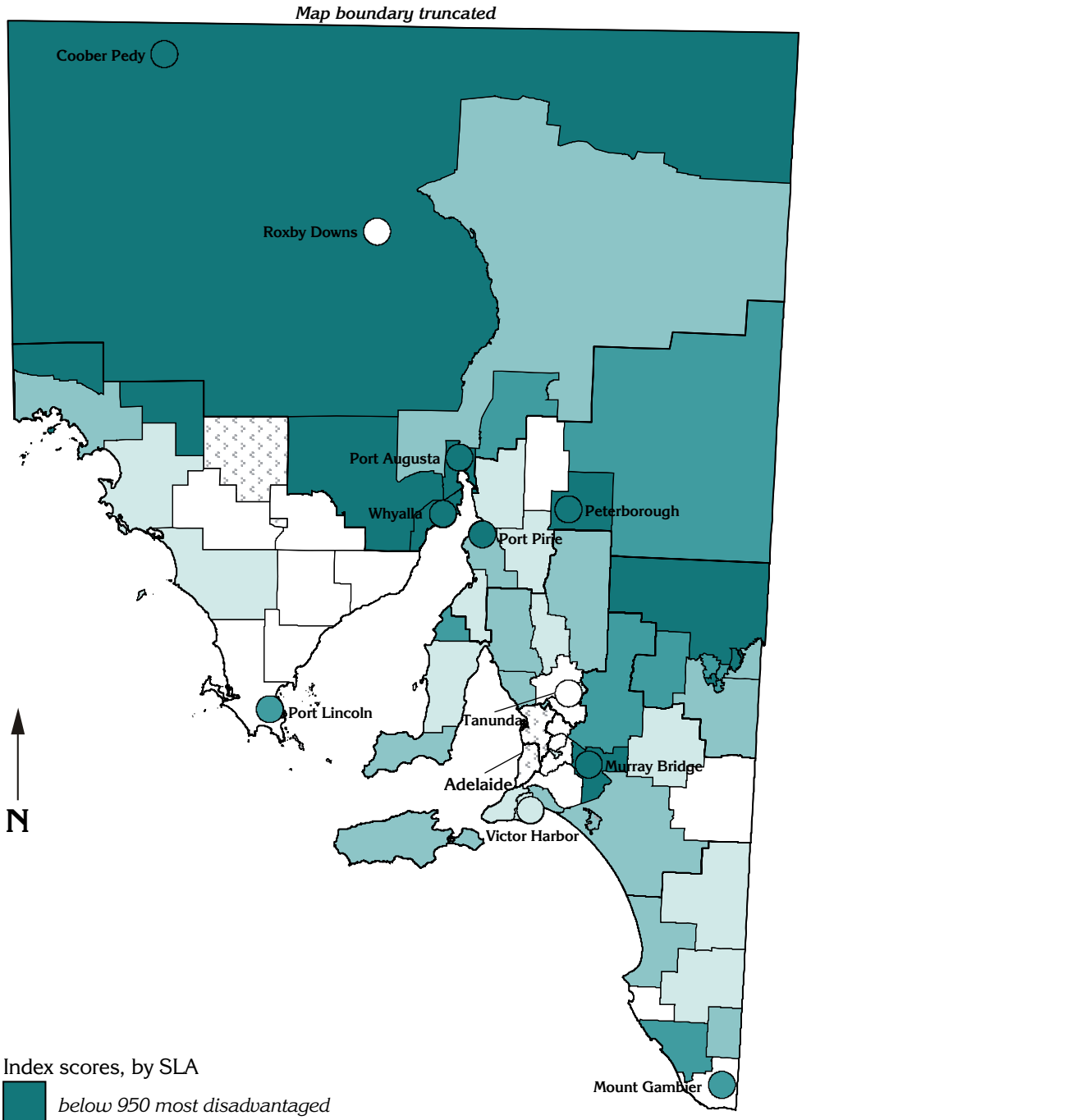
Map A1
Socioeconomic groupings of areas, Metropolitan Adelaide, 2001



Source: Calculated on data from SEIFA 2001

Details of map boundaries are in Appendix 1.2

Map A2
Socioeconomic groupings of areas, country South Australia, 2001



*Data were not mapped because the SLA has a population of less than 100

Source: Calculated on data from SEIFA 2001 ***Details of map boundaries are in Appendix 1.2***

Table A11 lists the sites covered by the data presented in Chapter 7 for community mental health services.

Table A11: Community mental health services by organisation

Metropolitan community sites
RAH Forensic Mental Health Service
RAH Glenside Campus - MH Services for Older People
RAH Community MHS
RAH Community MHS - North Terrace - Ward C3
Modbury Public Hospital
The Queen Elizabeth Hospital Division of Mental Health
Lyell McEwin Health Service - Mental Health Division
FMC - Flinders Mental Health
FMC - Department of Psychiatry
Repatriation General Hospital
Southern Mental Health Services for Older People
Noarlunga Health Service
Metropolitan Total

Country community sites
Adelaide Hills Community Health Service
Barossa & Districts MHS
Coober Pedy Health Service
Gawler Health Service
Kangaroo Island Health Service
Lower North CHS
Murray Mallee Community Health Service
Northern Yorke Peninsula Health Service
Pika Wiya Health Service Inc
Port Lincoln Health Service
Port Pirie Regional Health Service
Pt. Augusta Hospital & Regional Health Service
Riverland Regional Health Service Inc
South East Regional Community Health Service
Southern Fleurieu Health Service
Southern Yorke Peninsula Health Service
Whyalla Community Mental Health Team
Country Total

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Table A12: Correlation matrix for Burden of Disease areas in the metropolitan regions

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23	V24	V25	V26	V27	V28	V29	V30	V31	
V1	1.00	0.90	0.25	-0.81	0.91	0.67	0.48	-0.61	0.60	0.57	0.83	-0.77	-0.72	-0.74	-0.81	-0.74	-0.79	0.61	-0.27	-0.64	-0.11	0.48	-0.06	-0.30	-0.66	-0.68	0.08	-0.27	-0.21	0.29	0.37	**V1**
V2	0.90	1.00	0.20	-0.85	0.83	0.50	0.26	-0.44	0.38	0.34	0.69	-0.67	-0.55	-0.55	-0.73	-0.61	-0.62	0.36	-0.41	-0.83	-0.33	0.23	0.15	-0.58	-0.42	-0.46	0.03	-0.02	0.03	0.01	0.13	**V2**
V3	0.25	0.20	1.00	-0.54	0.06	-0.01	-0.27	0.22	-0.11	0.00	0.01	0.11	-0.01	-0.09	0.07	0.21	0.07	-0.05	-0.29	-0.01	-0.32	-0.14	-0.09	-0.20	0.14	0.12	-0.26	0.24	-0.11	-0.10	-0.33	**V3**
V4	-0.81	-0.85	-0.54	1.00	-0.58	-0.23	0.02	0.17	-0.12	-0.09	-0.47	0.51	0.30	0.36	0.51	0.36	0.42	-0.16	0.34	0.61	0.28	0.00	-0.24	0.67	0.27	0.22	0.20	-0.21	-0.07	0.18	0.08	**V4**
V5	0.91	0.83	0.06	-0.58	1.00	0.85	0.71	-0.79	0.80	0.74	0.91	-0.81	-0.87	-0.84	-0.87	-0.83	-0.86	0.77	-0.24	-0.64	-0.09	0.66	-0.20	-0.10	-0.74	-0.82	0.08	-0.46	-0.32	0.48	0.52	**V5**
V6	0.67	0.50	-0.01	-0.23	0.85	1.00	0.91	-0.90	0.97	0.92	0.91	-0.74	-0.97	-0.92	-0.81	-0.80	-0.86	0.92	-0.14	-0.40	0.05	0.89	-0.53	0.34	-0.85	-0.94	0.19	-0.72	-0.60	0.81	0.75	**V6**
V7	0.48	0.26	-0.27	0.02	0.71	0.91	1.00	-0.96	0.97	0.87	0.84	-0.75	-0.91	-0.85	-0.75	-0.82	-0.85	0.90	0.15	-0.17	0.30	0.91	-0.51	0.50	-0.91	-0.95	0.20	-0.75	-0.54	0.82	0.82	**V7**
V8	-0.61	-0.44	0.22	0.17	-0.79	-0.90	-0.96	1.00	-0.94	-0.81	-0.92	0.88	0.92	0.88	0.86	0.90	0.91	-0.87	-0.06	0.34	-0.22	-0.83	0.38	-0.28	0.96	0.96	-0.22	0.63	0.42	-0.69	-0.77	**V8**
V9	0.60	0.38	-0.11	-0.12	0.80	0.97	0.97	-0.94	1.00	0.93	0.89	-0.75	-0.97	-0.92	-0.79	-0.82	-0.87	0.96	0.03	-0.26	0.20	0.93	-0.33	0.44	-0.92	-0.97	0.20	-0.75	-0.58	0.84	0.81	**V9**
V10	0.57	0.34	0.00	-0.09	0.74	0.92	0.87	-0.81	0.93	1.00	0.81	-0.58	-0.92	-0.91	-0.71	-0.72	-0.82	0.91	-0.09	-0.18	0.12	0.88	0.06	0.53	0.89	-0.89	0.22	-0.82	-0.64	0.89	0.71	**V10**
V11	0.83	0.69	0.01	-0.47	0.91	0.91	0.84	-0.92	0.89	0.81	1.00	-0.90	-0.95	-0.93	-0.93	-0.89	-0.96	0.87	-0.08	-0.49	0.11	0.77	-0.68	0.08	-0.79	-0.95	0.24	-0.55	-0.41	0.63	0.67	**V11**
V12	-0.77	-0.67	0.11	0.51	-0.81	-0.74	-0.75	0.88	-0.75	-0.58	-0.90	1.00	0.79	0.80	0.94	0.91	0.89	-0.70	0.07	0.55	-0.07	-0.62	-0.54	0.12	-0.91	0.83	-0.18	0.36	0.16	-0.38	-0.59	**V12**
V13	-0.72	-0.55	-0.01	0.30	-0.87	-0.97	-0.91	0.92	-0.97	-0.92	-0.95	0.79	1.00	0.97	0.86	0.85	0.92	-0.94	0.07	0.37	-0.10	-0.87	0.49	-0.29	0.90	0.97	-0.22	0.68	0.53	-0.78	-0.74	**V13**
V14	-0.74	-0.55	-0.09	0.36	-0.84	-0.92	-0.85	0.88	-0.92	-0.91	-0.93	0.80	0.97	1.00	0.87	0.86	0.91	-0.91	0.14	0.37	-0.05	-0.84	0.47	-0.27	0.89	0.94	-0.17	0.64	0.48	-0.74	-0.71	**V14**
V15	-0.81	-0.73	0.07	0.51	-0.87	-0.81	-0.75	0.86	-0.79	-0.71	-0.93	0.94	0.86	0.87	1.00	0.90	0.93	-0.74	0.29	0.60	0.10	-0.65	0.14	0.08	0.85	0.84	-0.22	0.45	0.23	-0.46	-0.61	**V15**
V16	-0.74	-0.61	0.21	0.36	-0.83	-0.80	-0.82	0.90	-0.82	-0.72	-0.89	0.91	0.85	0.86	0.90	1.00	0.90	-0.80	0.09	0.48	-0.08	-0.76	0.23	-0.07	0.88	0.88	-0.23	0.58	0.27	-0.56	-0.70	**V16**
V17	-0.79	-0.62	0.07	0.42	-0.86	-0.86	-0.85	0.91	-0.87	-0.82	-0.96	0.89	0.92	0.91	0.93	0.90	1.00	-0.85	0.04	0.38	-0.18	-0.75	0.32	-0.13	0.94	0.93	-0.19	0.61	0.39	-0.63	-0.72	**V17**
V18	0.61	0.36	-0.05	-0.16	0.77	0.92	0.90	-0.87	0.96	0.91	0.87	-0.70	-0.94	-0.91	-0.74	-0.80	-0.85	1.00	0.06	-0.18	0.26	0.93	-0.55	0.47	-0.88	-0.95	0.20	-0.77	-0.61	0.86	0.82	**V18**
V19	-0.27	-0.41	-0.29	0.34	-0.24	-0.14	0.15	-0.06	0.03	-0.09	-0.08	0.07	0.07	0.14	0.29	0.09	0.04	0.06	1.00	0.62	0.92	0.10	-0.10	0.36	-0.16	-0.08	-0.14	-0.03	0.01	0.10	0.14	**V19**
V20	-0.64	-0.83	-0.01	0.61	-0.64	-0.40	-0.17	0.34	-0.26	-0.18	-0.49	0.55	0.37	0.37	0.60	0.48	0.38	-0.18	0.62	1.00	0.61	-0.11	-0.15	0.59	0.24	0.29	-0.13	-0.04	-0.04	0.06	-0.01	**V20**
V21	-0.11	-0.33	-0.32	0.28	-0.09	0.05	0.30	-0.22	0.20	0.12	0.11	-0.07	-0.10	-0.05	0.10	-0.08	-0.18	0.26	0.92	0.61	1.00	0.28	-0.23	0.48	-0.35	-0.28	-0.03	-0.24	-0.13	0.29	0.32	**V21**
V22	0.48	0.23	-0.14	0.00	0.66	0.89	0.91	-0.83	0.93	0.88	0.77	-0.62	-0.87	-0.84	-0.65	-0.76	-0.75	0.93	0.10	-0.11	0.28	1.00	-0.57	0.59	-0.81	-0.91	0.12	-0.79	-0.56	0.87	0.81	**V22**
V23	-0.06	0.15	-0.09	-0.24	-0.20	-0.53	-0.51	0.38	-0.33	0.06	-0.68	-0.54	0.49	0.47	0.14	0.23	0.32	-0.55	-0.10	-0.15	-0.23	-0.57	1.00	-0.71	0.40	0.48	-0.28	0.70	0.68	-0.84	-0.30	**V23**
V24	-0.30	-0.58	-0.20	0.67	-0.10	0.34	0.50	-0.28	0.44	0.53	0.08	0.12	-0.29	-0.27	0.08	-0.07	-0.13	0.47	0.36	0.59	0.48	0.59	-0.71	1.00	-0.28	-0.36	0.15	-0.68	-0.53	0.76	0.49	**V24**
V25	-0.66	-0.42	0.14	0.27	-0.74	-0.85	-0.91	0.96	-0.91	-0.79	-0.92	0.89	0.90	0.89	0.85	0.88	0.94	-0.88	-0.16	0.24	-0.35	-0.81	0.40	-0.28	1.00	0.96	-0.22	0.62	0.43	-0.70	-0.78	**V25**
V26	-0.68	-0.46	0.12	0.22	-0.82	-0.94	-0.95	0.96	-0.97	-0.89	-0.95	0.83	0.97	0.94	0.84	0.88	0.93	-0.95	-0.08	0.29	-0.28	-0.91	0.48	-0.36	0.96	1.00	-0.22	0.71	0.52	-0.80	-0.80	**V26**
V27	0.08	0.03	-0.26	0.20	0.08	0.19	0.20	-0.22	0.20	0.22	0.24	-0.18	-0.22	-0.17	-0.22	-0.23	-0.19	0.20	-0.14	-0.13	-0.03	0.12	-0.28	0.15	-0.22	-0.22	1.00	-0.34	-0.30	0.31	0.24	**V27**
V28	-0.27	-0.02	0.24	-0.21	-0.46	-0.72	-0.75	0.63	-0.75	-0.82	-0.55	0.36	0.68	0.64	0.45	0.58	0.61	-0.77	-0.03	-0.04	-0.24	-0.79	0.70	-0.68	0.62	0.71	-0.34	1.00	0.74	-0.92	-0.80	**V28**
V29	-0.21	0.03	-0.11	-0.07	-0.32	-0.60	-0.54	0.42	-0.58	-0.64	-0.41	0.16	0.53	0.48	0.23	0.27	0.39	-0.61	0.01	-0.04	-0.13	-0.56	0.68	-0.53	0.43	0.52	-0.30	0.74	1.00	-0.78	-0.56	**V29**
V30	0.29	0.01	-0.10	0.18	0.48	0.81	0.82	-0.69	0.84	0.89	0.63	-0.38	-0.78	-0.74	-0.46	-0.56	-0.63	0.86	0.10	0.06	0.29	0.87	-0.84	0.76	-0.70	-0.80	0.31	-0.92	-0.78	1.00	0.76	**V30**
V31	0.37	0.13	-0.33	0.08	0.52	0.75	0.82	-0.77	0.81	0.71	0.67	-0.59	-0.74	-0.71	-0.61	-0.70	-0.72	0.82	0.14	-0.01	0.32	0.81	-0.30	0.49	-0.78	-0.80	0.24	-0.80	-0.56	0.76	1.00	**V31**
	V1	**V2**	**V3**	**V4**	**V5**	**V6**	**V7**	**V8**	**V9**	**V10**	**V11**	**V12**	**V13**	**V14**	**V15**	**V16**	**V17**	**V18**	**V19**	**V20**	**V21**	**V22**	**V23**	**V24**	**V25**	**V26**	**V27**	**V28**	**V29**	**V30**	**V31**	

Figures highlighted thus ▭ indicate correlations of strong significance between the appropriate variables in the matrix; those highlighted thus ■ indicate correlations of very strong significance

Age distribution	Children aged 0 to 4 years	**V1**
	Children aged 5 to 14 years	**V2**
	Young people aged 15 to 24 years	**V3**
	People aged 65 years and over	**V4**
Total fertility rate	Total fertility rate	**V5**
Families	Single parent families	**V6**
	Low income families	**V7**
	High income families	**V8**
	Jobless families	**V9**
Labour force	Unemployment	**V10**
	Unskilled and semi-skilled workers	**V11**
	Managers and administrators; professionals	**V12**
	Female labour force participation	**V13**
Education	Full-time participation in education at age 16	**V14**
	Average publicly examined subject achievement scores	**V15**
	Average publicly assessed subject achievement scores	**V16**
	Average school assessed subject achievement scores	**V17**

Aboriginal and Torres Strait Islander people	Aboriginal and Torres Strait Islander people	**V18**
NESB	Resident for five years or more	**V19**
	Resident for less than five years	**V20**
	Poor proficency in English	**V21**
Housing	Dwellings rented from the SA Housing Trust	**V22**
	Rent assistance	**V23**
Transport	Dwellings with no motor vehicle	**V24**
People who used the Internet at home	People who used the Internet at home	**V25**
ABS SEIFA	Index of Relative Socio-Economic Disadvantage	**V26**
Mortality	Infant deaths	**V27**
Burden of Disease	Health-Adjusted Life Expectancy, males	**V28**
	Health-Adjusted Life Expectancy, females	**V29**
	Years of Life Lost	
	Years of Life Lost to Disability	

Table A13: Correlation matrix for Burden of Disease areas in country South Australia

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23	V24	V25	V26	V27	V28	V29	V30	V31	
V1	1.00	0.87	0.75	-0.90	0.44	0.53	-0.45	0.46	0.07	0.41	0.15	-0.17	0.00	-0.31	0.16	0.41	0.13	0.51	0.15	0.07	0.17	0.62	-0.70	0.37	-0.13	-0.33	0.14	-0.48	-0.41	0.46	0.41	**V1**
V2	0.87	1.00	0.65	-0.89	0.25	0.37	-0.53	0.52	-0.11	0.28	-0.07	-0.06	0.11	-0.10	0.17	0.37	-0.10	0.42	0.02	-0.06	0.02	0.37	-0.74	0.12	0.09	-0.03	0.02	-0.26	-0.27	0.26	0.22	**V2**
V3	0.75	0.65	1.00	-0.89	-0.11	0.57	-0.77	0.83	-0.15	0.17	0.33	-0.66	0.26	-0.34	0.24	0.12	-0.22	0.37	0.42	0.13	0.24	0.61	-0.49	0.33	0.12	-0.21	0.41	-0.33	-0.34	0.30	0.19	**V3**
V4	-0.90	-0.89	-0.89	1.00	-0.04	-0.57	0.68	-0.72	0.10	-0.25	-0.15	0.42	-0.16	0.31	-0.19	-0.25	0.19	-0.45	-0.27	-0.06	-0.12	-0.55	0.65	-0.25	-0.12	0.16	-0.24	0.32	0.29	-0.29	-0.22	**V4**
V5	0.44	0.25	-0.11	-0.04	1.00	-0.18	0.29	-0.42	0.20	0.28	0.24	0.59	-0.14	0.00	0.03	0.42	0.57	0.16	-0.29	0.15	0.20	0.17	-0.32	0.14	-0.61	-0.38	-0.11	-0.48	-0.26	0.48	0.41	**V5**
V6	0.53	0.37	0.57	-0.57	-0.18	1.00	-0.03	0.25	0.59	0.74	-0.07	-0.66	-0.53	-0.75	-0.36	-0.16	-0.06	0.76	0.52	-0.02	0.14	0.86	-0.30	0.81	-0.13	-0.57	0.31	-0.54	-0.64	0.53	0.62	**V6**
V7	-0.45	-0.53	-0.77	0.68	0.29	-0.03	1.00	-0.96	0.69	0.43	-0.16	0.40	-0.73	-0.24	-0.58	-0.25	0.31	0.19	-0.17	-0.06	-0.02	0.02	0.28	0.30	-0.59	-0.42	-0.15	-0.29	-0.24	0.31	0.44	**V7**
V8	0.46	0.52	0.83	-0.72	-0.42	0.25	-0.96	1.00	-0.51	-0.26	0.12	-0.61	0.54	0.08	0.49	0.10	-0.39	-0.04	0.29	0.02	0.02	0.16	-0.34	-0.08	0.59	0.31	0.21	0.21	0.06	-0.23	-0.31	**V8**
V9	0.07	-0.11	-0.15	0.10	0.20	0.59	0.69	-0.51	1.00	0.75	0.01	-0.14	-0.94	-0.57	-0.51	-0.30	0.23	0.52	0.25	0.03	0.21	0.61	-0.10	0.78	-0.60	-0.78	0.15	-0.68	-0.68	0.66	0.74	**V9**
V10	0.41	0.28	0.17	-0.25	0.28	0.74	0.43	-0.26	0.75	1.00	-0.06	-0.21	-0.76	-0.79	-0.58	-0.22	0.07	0.93	0.19	-0.07	0.12	0.83	-0.41	0.89	-0.58	-0.75	0.14	-0.73	-0.87	0.77	0.92	**V10**
V11	0.15	-0.07	0.33	-0.15	0.24	-0.07	-0.16	0.12	0.01	-0.06	1.00	-0.22	0.20	-0.29	0.03	-0.34	-0.28	0.08	0.38	0.64	0.63	0.29	-0.12	0.17	-0.50	-0.52	0.41	-0.48	-0.32	0.48	0.21	**V11**
V12	-0.17	-0.06	-0.66	0.42	0.59	-0.66	0.40	-0.61	-0.14	-0.21	-0.22	1.00	0.10	0.53	-0.05	0.39	0.38	-0.32	-0.57	0.00	-0.09	-0.59	0.15	-0.49	-0.14	0.26	-0.61	0.16	0.37	-0.16	-0.14	**V12**
V13	0.00	0.11	0.26	-0.16	-0.14	-0.53	-0.73	0.54	-0.94	-0.76	0.20	0.10	1.00	0.54	0.42	0.23	-0.23	-0.52	0.01	0.26	0.11	-0.53	0.20	-0.73	0.54	0.65	-0.08	0.53	0.61	-0.49	-0.71	**V13**
V14	-0.31	-0.10	-0.34	0.31	0.00	-0.75	-0.24	0.08	-0.57	-0.79	-0.29	0.53	0.54	1.00	0.52	0.38	0.17	-0.87	-0.35	-0.05	-0.16	-0.85	0.27	-0.82	0.58	0.80	-0.44	0.70	0.72	-0.70	-0.80	**V14**
V15	0.16	0.17	0.24	-0.19	0.03	-0.36	-0.58	0.49	-0.51	-0.58	0.03	-0.05	0.42	0.52	1.00	0.58	0.24	-0.60	-0.45	-0.40	-0.45	-0.28	-0.30	-0.43	0.35	0.45	0.14	0.38	0.44	-0.53	-0.50	**V15**
V16	0.41	0.37	0.12	-0.25	0.42	-0.16	-0.25	0.10	-0.30	-0.22	-0.34	0.39	0.23	0.38	0.58	1.00	0.72	-0.29	-0.57	-0.47	-0.45	-0.18	-0.16	-0.33	0.14	0.31	-0.09	0.10	0.43	-0.26	-0.18	**V16**
V17	0.13	-0.10	-0.22	0.19	0.57	-0.06	0.31	-0.39	0.23	0.07	-0.28	0.38	-0.23	0.17	0.24	0.72	1.00	-0.20	-0.36	-0.31	-0.21	0.00	0.15	0.02	-0.24	-0.08	0.06	-0.14	0.16	0.05	0.08	**V17**
V18	0.51	0.42	0.37	-0.45	0.16	0.76	0.19	-0.04	0.52	0.93	0.08	-0.32	-0.52	-0.87	-0.60	-0.29	-0.20	1.00	0.30	0.05	0.19	0.84	-0.46	0.81	-0.49	-0.69	0.17	-0.68	-0.83	0.75	0.85	**V18**
V19	0.15	0.02	0.42	-0.27	-0.29	0.52	-0.17	0.29	0.25	0.19	0.38	-0.57	0.01	-0.35	-0.45	-0.57	-0.36	0.30	1.00	0.74	0.79	0.43	0.25	0.37	0.05	-0.34	0.34	-0.26	-0.37	0.43	0.09	**V19**
V20	0.07	-0.06	0.13	-0.06	0.15	-0.02	-0.06	0.02	0.03	-0.07	0.64	0.00	0.26	-0.05	-0.40	-0.47	-0.31	0.05	0.74	1.00	0.95	0.08	0.28	0.03	-0.14	-0.28	0.02	-0.24	-0.18	0.40	-0.01	**V20**
V21	0.17	0.02	0.24	-0.12	0.20	0.14	-0.02	0.02	0.21	0.12	0.63	-0.09	0.11	-0.16	-0.45	-0.45	-0.21	0.19	0.79	0.95	1.00	0.27	0.20	0.23	-0.26	-0.44	0.15	-0.44	-0.39	0.60	0.18	**V21**
V22	0.62	0.37	0.61	-0.55	0.17	0.86	0.02	0.16	0.61	0.83	0.29	-0.59	-0.53	-0.85	-0.28	-0.18	0.00	0.84	0.43	0.08	0.27	1.00	-0.50	0.93	-0.50	-0.82	0.44	-0.79	-0.86	0.79	0.83	**V22**
V23	-0.70	-0.74	-0.49	0.65	-0.32	-0.30	0.28	-0.34	-0.10	-0.41	-0.12	0.15	0.20	0.27	-0.30	-0.16	0.15	-0.46	0.25	0.28	0.20	-0.50	1.00	-0.37	0.22	0.27	-0.04	0.37	0.51	-0.30	-0.46	**V23**
V24	0.37	0.12	0.33	-0.25	0.14	0.81	0.30	-0.08	0.78	0.89	0.17	-0.49	-0.73	-0.82	-0.43	-0.33	0.02	0.81	0.37	0.03	0.23	0.93	-0.37	1.00	-0.54	-0.84	0.26	-0.75	-0.91	0.75	0.89	**V24**
V25	-0.13	0.09	0.12	-0.12	-0.61	-0.13	-0.59	0.59	-0.60	-0.58	-0.50	-0.14	0.54	0.58	0.35	0.14	-0.24	-0.49	0.05	-0.14	-0.26	-0.50	0.22	-0.54	1.00	0.85	-0.33	0.84	0.61	-0.80	-0.77	**V25**
V26	-0.33	-0.03	-0.21	0.16	-0.38	-0.57	-0.42	0.31	-0.78	-0.75	-0.52	0.26	0.65	0.80	0.45	0.31	-0.08	-0.69	-0.34	-0.28	-0.44	-0.82	0.27	-0.84	0.85	1.00	-0.39	0.93	0.82	-0.91	-0.88	**V26**
V27	0.14	0.02	0.41	-0.24	-0.11	0.31	-0.15	0.21	0.15	0.14	0.41	-0.61	-0.08	-0.44	0.14	-0.09	0.06	0.17	0.34	0.02	0.15	0.44	-0.04	0.26	-0.33	-0.39	1.00	-0.39	-0.23	0.37	0.13	**V27**
V28	-0.48	-0.26	-0.33	0.32	-0.48	-0.54	-0.29	0.21	-0.68	-0.73	-0.48	0.16	0.53	0.70	0.38	0.10	-0.14	-0.68	-0.26	-0.24	-0.44	-0.79	0.37	-0.75	0.84	0.93	-0.39	1.00	0.79	-0.95	-0.87	**V28**
V29	-0.41	-0.27	-0.34	0.29	-0.26	-0.64	-0.24	0.06	-0.68	-0.87	-0.32	0.37	0.61	0.72	0.44	0.43	0.16	-0.83	-0.37	-0.18	-0.39	-0.86	0.51	-0.91	0.61	0.82	-0.23	0.79	1.00	-0.85	-0.88	**V29**
V30	0.46	0.26	0.30	-0.29	0.48	0.53	0.31	-0.23	0.66	0.77	0.48	-0.16	-0.49	-0.70	-0.53	-0.26	0.05	0.75	0.43	0.40	0.60	0.79	-0.30	0.75	-0.80	-0.91	0.37	-0.95	-0.85	1.00	0.85	**V30**
V31	0.41	0.22	0.19	-0.22	0.41	0.62	0.44	-0.31	0.74	0.92	0.21	-0.14	-0.71	-0.80	-0.50	-0.18	0.08	0.85	0.09	-0.01	0.18	0.83	-0.46	0.89	-0.77	-0.88	0.13	-0.87	-0.88	0.85	1.00	**V31**
	V1	**V2**	**V3**	**V4**	**V5**	**V6**	**V7**	**V8**	**V9**	**V10**	**V11**	**V12**	**V13**	**V14**	**V15**	**V16**	**V17**	**V18**	**V19**	**V20**	**V21**	**V22**	**V23**	**V24**	**V25**	**V26**	**V27**	**V28**	**V29**	**V30**	**V31**	

Figures highlighted thus ▭ indicate correlations of strong significance between the appropriate variables in the matrix; those highlighted thus ■ indicate correlations of very strong significance

Age distribution	Children aged 0 to 4 years	**V1**
	Children aged 5 to 14 years	**V2**
	Young people aged 15 to 24 years	**V3**
	People aged 65 years and over	**V4**
Total fertility rate	Total fertility rate	**V5**
Families	Single parent families	**V6**
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	Years of Life Lost	
	Years of Life Lost to Disability	

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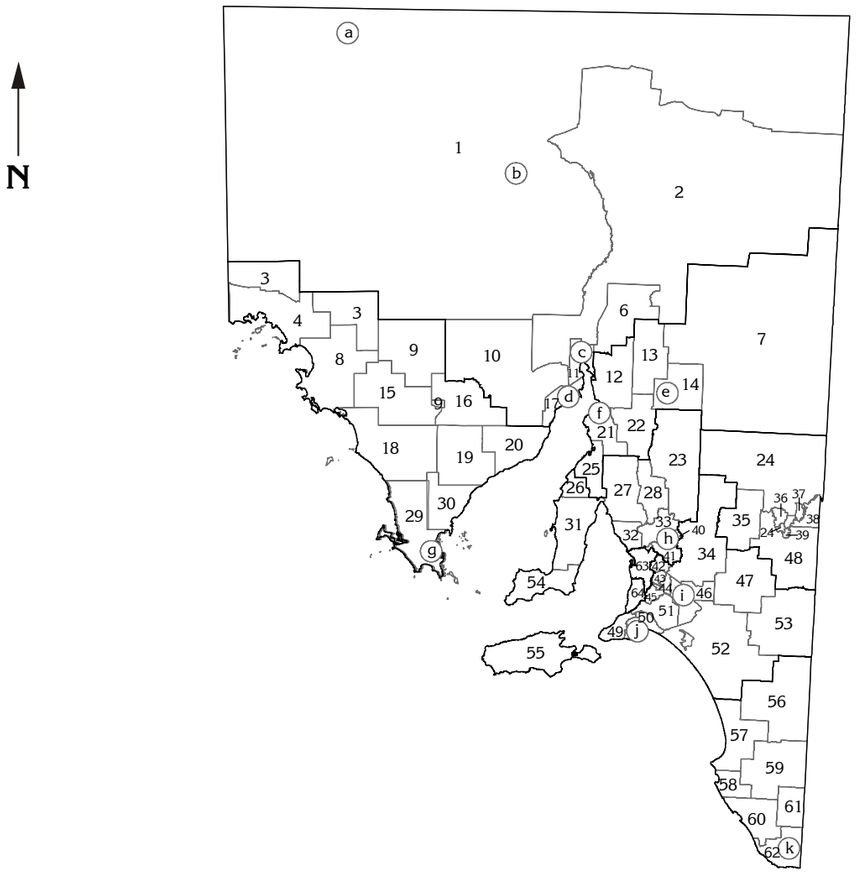
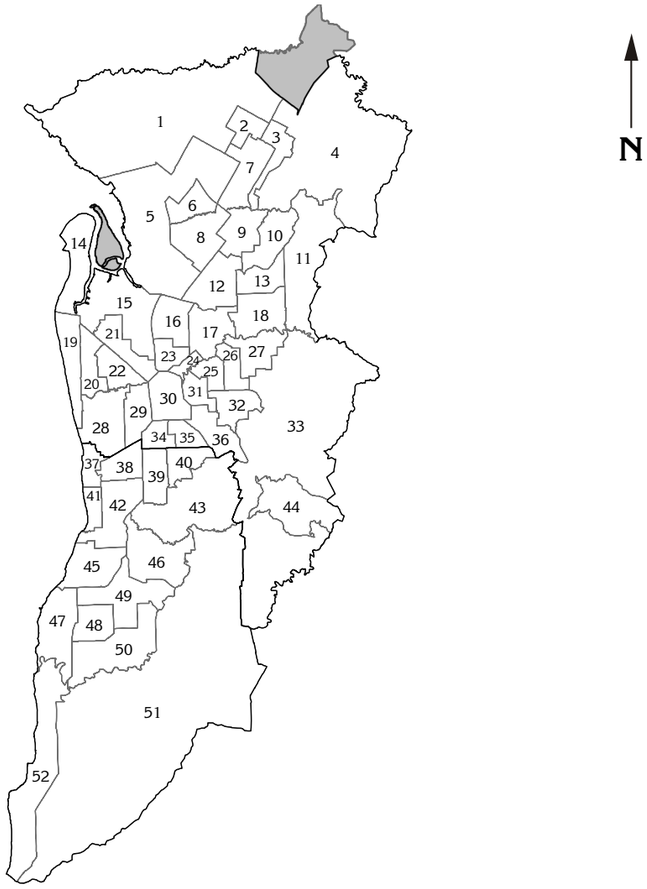
Key to areas mapped by Statistical Local Area, South Australia



Alphabetical key to Statistical Local Areas, country South Australia, 2001

Adelaide Hills (DC) Balance	43	Loxton Waikerie (DC) - West	48	Yankalilla (DC)	49
Adelaide Hills (DC) - North	42	Mallala (DC)	32	Yorke Peninsula (DC) - North	31
Alexandrina (DC) - Coastal	50	Mid Murray (DC)	34	Yorke Peninsula (DC) - South	54
Alexandrina (DC) - Strathalbyn	51	Mount Barker (DC) - Central	44	Unincorporated Far North	1
Barossa (DC) - Angaston	40	Mount Barker (DC) Balance	45	Unincorporated Flinders Ranges	2
Barossa (DC) - Barossa	41	Mount Remarkable (DC)	12	Unincorporated Lincoln	9
Barunga West (DC)	25	Murray Bridge (RC)	46	Unincorporated Pirie	7
Berri & Barmera (DC) - Barmera	26	Naracoorte & Lucindale (DC)	59	Unincorporated Riverland	24
Berri & Barmera (DC) - Berri	39	Northern Areas (DC)	22	Unincorporated West Coast	3
Ceduna (DC)	4	Orroroo/Carrieton (DC)	13		
Clare and Gilbert Valleys (DC)	28	Peterborough (DC)	14	***Metropolitan Adelaide***	
Cleve (DC)	19	Port Augusta (C)	11	Northern Central Adelaide	63
Copper Coast (DC)	26	Port Pirie Districts (M) Balance	21	Southern Adelaide	64
Elliston (DC)	18	Renmark Paringa (DC) - Paringa	38		
Flinders Ranges (DC)	6	Renmark Paringa (DC) - Renmark	37	***Towns***	
Franklin Harbor (DC)	20	Robe (DC)	58	Barossa (DC) - Tanunda	h
Goyder (DC)	23	Southern Mallee (DC)	53	Coober Pedy (DC)	a
Grant (DC)	62	Streaky Bay (DC)	8	Mount Gambier (C)	k
Kangaroo Island (DC)	55	Tatiara (DC)	56	Murray Bridge (DC)	i
Karoonda East Murray (DC)	47			Peterborough (M)	e
Kimba (DC)	16	The Coorong (DC)	52	Port Augusta (C)	c
Lacepede (DC)	57	Tumby Bay (DC)	30	Port Lincoln (C)	g
Le Hunte	15	Wakefield (DC)	27	Port Pirie City & Districts (M) - City	f
Light (DC)	33	Wattle Range (DC) - East	61	Roxby Downs (M)	b
Lower Eyre Peninsula (DC)	29	Wattle Range (DC) - West	60	Victor Harbor (DC)	j
Loxton Waikerie (DC) - East	35	Whyalla (C)	17	Whyalla (C)	d

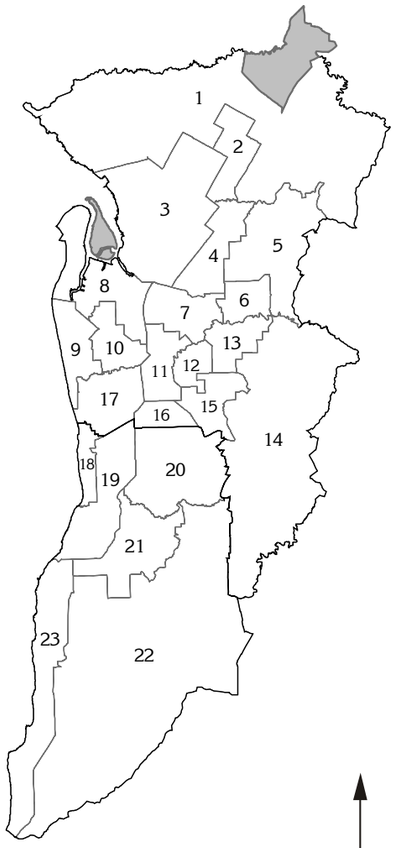
Key to areas mapped by Statistical Local Area, Adelaide



Alphabetical key to Statistical Local Areas, Adelaide, 2001

Adelaide (C)	30	Onkaparinga (C) - South Coast	52
Adelaide Hills (DC) - Central	44	Onkaparinga (C) - Woodcroft	49
Adelaide Hills (DC) - Ranges	33	Playford (C) - East Central	3
Burnside (C) - North-East	32	Playford (C) - Elizabeth	7
Burnside (C) - South-West	36	Playford (C) - Hills	4
Campbelltown (C) - East	27	Playford (C) - West	1
Campbelltown (C) - West	26	Playford (C) - West Central	2
Charles Sturt (C) - Coastal	19	Port Adelaide Enfield (C) - Coast	14
Charles Sturt (C) - Inner East	22	Port Adelaide Enfield (C) - East	17
Charles Sturt (C) - Inner West	20	Port Adelaide Enfield (C) - Inner	16
Charles Sturt (C) - North-East	21	Port Adelaide Enfield (C) - Port	15
Holdfast Bay (C) - North	37	Prospect (C)	23
Holdfast Bay (C) - South	41	Salisbury (C) - Central	8
Marion (C) - Central	42	Salisbury (C) - Inner North	6
Marion (C) - North	38	Salisbury (C) - North-East	9
Marion (C) - South	45	Salisbury (C) - South-East	12
Mitcham (C) - Hills	43	Salisbury (C) Balance	5
Mitcham (C) - North-East	40	Tea Tree Gully (C) - Central	13
Mitcham (C) - West	39	Tea Tree Gully (C) - Hills	11
Norwood Payneham St Peters (C) - East	25	Tea Tree Gully (C) - North	10
Norwood Payneham St Peters (C) - West	31	Tea Tree Gully (C) - South	18
Onkaparinga (C) - Hackham	50	Unley (C) - East	35
Onkaparinga (C) - Hills	51	Unley (C) - West	34
Onkaparinga (C) - Morphett	48	Walkerville (M)	24
Onkaparinga (C) - North Coast	47	West Torrens (C) - East	29
Onkaparinga (C) - Reservoir	46	West Torrens (C) - West	28

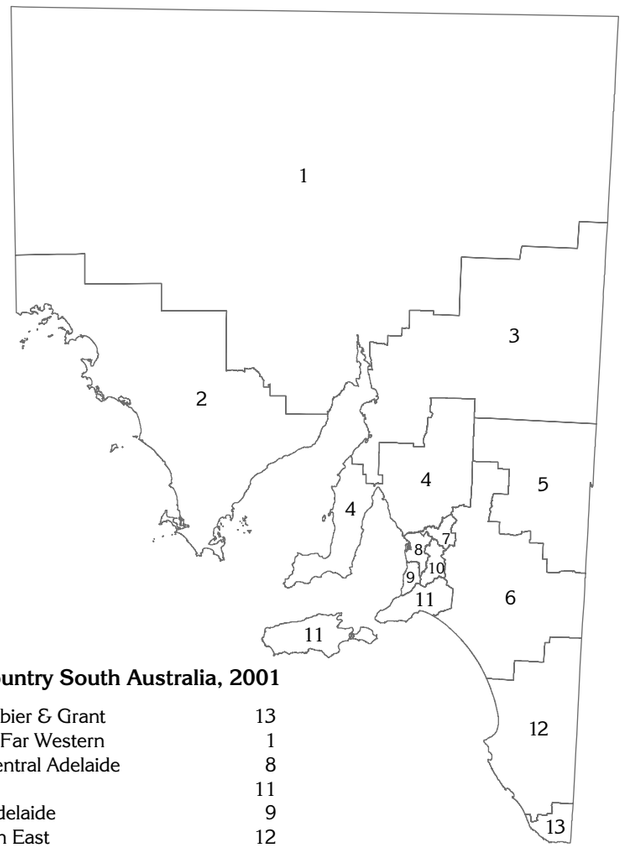
Key to areas mapped by Burden of Disease area, Adelaide and South Australia



Alphabetical key to Burden of Disease areas, Adelaide, 2001

Adelaide Hills - Central, Ranges	14
Adelaide, Walkerville & Prospect	11
Burnside	15
Campbelltown	13
Charles Sturt - Coastal, Inner West	9
Charles Sturt - Inner East, North-East	10
Holdfast Bay	18
Marion	19
Mitcham	20
Norwood Payneham St Peters	12
Onkaparinga - Hackham, Morphett, Hills	22
Onkaparinga - North Coast, South Coast	23
Onkaparinga - Reservoir, Woodcroft	21
Playford - East Central, Hills, West	1
Playford - West Central, Elizabeth	2
Port Adelaide Enfield - Coast, Port	8
Port Adelaide Enfield - East, Inner	7
Salisbury - Central, Inner North, Balance	3
Salisbury - North-East, South-East	4
Tea Tree Gully - Central, Hills, North	5
Tea Tree Gully - South	6
Unley	16
West Torrens	17

N



Alphabetical key to Burden of Disease areas, country South Australia, 2001

Balance of Wakefield Region	3	Mount Gambier & Grant	13
Eyre	2	Northern & Far Western	1
Gawler & Barossa	7	Northern Central Adelaide	8
Hills	10	Southern	11
Mallee	5	Southern Adelaide	9
Mid North	4	Upper South East	12
Riverland	6		