

Men's health and wellbeing in South Australia:

an analysis of service use and outcomes by
socioeconomic status

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Summary

The South Australian Department of Health (SA Health) commissioned this report to address the following question,

'Are there populations of South Australian men who underutilise a range of health services, particularly primary health care services, and, as a consequence, experience a disproportionate burden of disease?'

In response, this report provides an analysis of South Australian men's health and medical service use by age and socioeconomic status. In doing so, it highlights areas where further planning of programs and services may be required and likely directions for improving men's health across the population, through targeted public policy.

Overall, Aboriginal males continue to suffer mortality and morbidity at much higher rates than non-Indigenous males, and have a reduced quality of life and high rates of illness and premature death. This remains an area for urgent intervention and disease prevention in ways that are culturally acceptable to Aboriginal men.

There was little difference between South Australian men and women in self-assessing their health as 'fair' or 'poor' (compared to 'excellent', very good', or 'good'). However, rates of 'high' or 'very high' psychological distress (measured by the K-10) were 32% lower than those reported by women (a rate ratio of 0.68). There were 18% fewer men than women whose responses to questions in the 2006 Population Census indicated they had a profound or severe disability, but only 5% fewer who were living in the community (i.e., excluding people living in long-term residential accommodation in nursing homes, accommodation for the retired or aged (not self-contained), hostels for the disabled and psychiatric hospitals).

In terms of the health risks of males, this report reinforces that they remain concerning. Men engage in behaviours that risk their health at generally higher rates than women. Consumption of alcohol at levels considered to be of high risk to health was substantially higher among men, being more than twice the rate of that for women (a rate ratio of 2.32). Smoking rates were also markedly higher for men (a rate ratio of 1.39). These behaviours, however, cannot be seen in isolation from the social and economic contexts in which men live and work. Factors such as employment and income interact with ethnicity, sexual and cultural identity and age to influence men's health status across the life cycle. Thus, youth unemployment and lower participation in education add to men's risk of poorer health later in adult life.

Male rates for diabetes and heart, stroke and vascular disease were higher than for females (27% and 10% higher, respectively); however, rates of respiratory system diseases (including asthma) and circulatory system diseases overall were lower than for women (10%, 24% and 20% lower, respectively). Further, certain groups of South Australian men — particularly Aboriginal men and those disadvantaged by poverty and/or geographical remoteness — are at higher risk of such health problems, have specific medical needs and often poorer use of services where these are available. Throughout this report, patterns of socioeconomic disadvantage are evident in men's use of health services, risk factors for chronic disease and health status.

In terms of service use, men accessed community health services, but at a rate that was substantially lower than that of women (a rate ratio of 0.44, 56% lower). Their use of general medical practitioner and specialist medical practitioner services was also lower than that of women (rate ratios of 0.73 and 0.89, respectively; or 27% and 11% lower). Community mental health services were utilised (8%) more by men than by women (a rate ratio 1.08). Male rates of use of CAMHS by children and adolescents were higher than those for females in all but the 15 to 19 year age group; and the rate of male clients in the most disadvantaged groups was almost six times the rate in the least disadvantaged group (rate ratio 5.77). Rates of attendance at Accident and Emergency Departments were generally higher for males; and hospital admission rates of males for circulatory system diseases and injury were higher than for females, other than in the oldest age group.

Death rates for males at ages 0 to 74 years (referred to as premature deaths) were 68% higher than those for females. In South Australia:

- the premature mortality rate for males in the most socially advantaged group of the population was higher than that for females in the most socially *disadvantaged* group; and
- males in the most socially disadvantaged group had a premature mortality rate nearly double that of the most socially disadvantaged females.

The differential in deaths from avoidable causes was even greater, at 85% – this indicator comprises those causes of death (before 75 years of age) that are potentially avoidable at the present time, given available knowledge about social and economic policy impacts, health behaviours, and health care. This indicates an area where further work in disease prevention and early intervention for males is warranted.

Glossary and symbols used

Admission:

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.

Aboriginal men (and women):

In this report, all references to Aboriginal men (or women) are inclusive of Torres Strait Islanders.

Rates

All rates described as 'Rate per 100,000 (of population)' have been produced by indirect age standardisation.

SLA – Statistical Local Area

The Statistical Local Area (SLA) is generally equivalent to a local government area, with additional codes allocated to areas outside local government areas (e.g., unincorporated areas) and to local government areas which have been split for statistical purposes, largely where local government areas are very large: e.g., Playford local government area is split into five SLAs.

Socioeconomic status

To produce the socioeconomic status groupings used in this report, SLAs were ranked by their IRSD score (see next paragraph) and were then allocated to one of five groups (quintiles), each representing approximately 20% of the population of Metropolitan Adelaide, or of country South Australia. Admissions were then allocated to one of these five groups with similar socioeconomic status (referred to as quintiles of socioeconomic disadvantage of area). Rates were then calculated by quintile for each condition.

The Index of Relative Socio-economic Disadvantage (IRSD) is an area-based, summary measure of socioeconomic disadvantage and is calculated from variables in the 2006 ABS Census, including those relating to education, labour force status, occupation and Indigenous status, of individuals and families (ABS 2008). The index is expressed as a number with a base for Australia of 1000: numbers above 1000 show relatively low disadvantage, and numbers below 1000 indicate relatively high disadvantage.

Symbols used

- * Statistically significant, at the 5% confidence level
- ** Statistically significant, at the 1% confidence level

1. Introduction

Aim of the report

Over the years, it has been asserted that men do not access health services as early as they should from a perspective of illness and disease prevention, or engage in health promotion activities that may reduce the risks of illness and injury (1, 2). Furthermore, comparisons are often made with women's greater use of illness and injury prevention health services. Further evidence and a better understanding of men's health service use are needed to provide a stronger base for public policy and to better inform popular discourse.

To this end, the South Australian Department of Health (SA Health) commissioned this report to address the following question,

'Are there populations of South Australian men who underutilise a range of health services, particularly primary health care services, and, as a consequence, experience a disproportionate burden of disease?'

Thus, the aim of this report is to provide an analysis of South Australian men's health and medical service use by age and socioeconomic status; and to indicate likely directions for improving men's health across the population, through targeted public policy.

The objectives of the report are:

- i) to describe South Australian men's health service use through the analysis of significant, available data sets;
- ii) to disaggregate South Australian men into sub-populations including by age, social gradient and remoteness to describe service use by these populations;
- iii) to analyse and discuss service use and health and wellbeing outcomes by sub-populations of men by assessing under-utilisation (or over-utilisation) of health services by different groups of men and comparing their health outcomes; and
- iv) to provide commentary about causes of (over- or under-) utilisation based on men's health literature and the research project findings, with a view to optimising service utilisation.

The report uses South Australian data to describe men's use of health services and their health status and some health risk factors, with an emphasis on geographic variations in use, in particular, variations related to socioeconomic status.

Variations by age, socioeconomic status and remoteness are shown, wherever possible, for both men and women, to highlight variations in the use

of services, allowing these to be compared with variations in socioeconomic status and in health outcomes.

The services covered include:

- Community health and community mental health services;
- Other community-based services, such as those supplied by the Royal District Nursing Service and Domiciliary Care;
- Dental services;
- GP services (provided under Medicare);
- Accident and Emergency Department attendances; and
- Hospital inpatient admissions.

The health status data presented provide details of:

- Estimates of the prevalence of selected chronic conditions;
- Incidence of cancer;
- Estimates of the prevalence of profound and severe disability; and
- Premature and avoidable mortality.

The health risk factors included are:

- Smoking; and
- Overweight and obesity.

Background

Gender is increasingly being recognised as a significant determinant of health. Not only are there obvious differences in the health of men and of women, but these are also apparent within subgroups of men themselves - boys, young adults, older men, Aboriginal men, and so forth (3). (Note that, throughout this report, the term 'Aboriginal' also includes those of Torres Strait Islander origin).

Men's health issues are defined as those that affect men's health and wellbeing. This definition extends beyond the purely biological aspects of health, as gender influences men's understanding and experiences of health itself, their use of health services and their health outcomes. Beliefs about masculinity and manhood are deeply rooted in culture (8). They are reinforced by social institutions and community values, and play a part in shaping the behaviour patterns of men in ways that have negative consequences for their health (6).

The growing awareness of men's health has arisen from observations that men often ignore the symptoms of poor health, and consequently, do not seek timely health care. Men are also seen to have less interest in their general health than women and may be harder to target through health education and promotion strategies. From existing data, it is evident that Australian men are more likely to become unwell and die from serious health problems than women, and have an average life expectancy of five years less than women (4). For Aboriginal men, their life expectancy is significantly less than their non-Indigenous counterparts, and six years less than Aboriginal women (5).

These patterns of poor health in men are evident from early life: boys are more likely to be injured than girls, young men die more often from accidents, suicide and substance abuse than their female counterparts; and older men die from heart disease and cancers at a higher rate than older women. Men, particularly younger men, tend to act as if they were invulnerable, and may be socially patterned to do so (6). This can lead to destructive, risk-taking behaviours such as drug or alcohol binges, and reckless driving. The suicide rate for men aged between 15 and 24 years has tripled in the past three decades (7). While these rates are declining, they have remained higher than those for women.

As men get older, work becomes an important determinant of their health, with its counterparts of unemployment and under-employment. Relationship issues are also significant influences on men's health and wellbeing. When men are in their later years, some may find themselves in the role of homemaker rather than bread winner, which can bring with it an uncertainty of status, after many years of providing financially for their families.

Risk factors and the health of men

By international standards, Australian men enjoy high life expectancies. However, they tend to utilise health services at a lower rate than Australian women, and die more often from chronic diseases such as cardiovascular disease, cancer, and injury including suicide (4). Men also experience higher rates of hospital admission due to work-related injuries (4).

From birth, morbidity and mortality rates are higher for males, with greater incidences of heart disease, cancer, accidents and injuries. Men participate in 'risky' behaviours more readily than females, with heavier alcohol and tobacco consumption, dangerous driving, participation in more contact sports, and work in stressful and laborious jobs

thereby increasing the likelihood of illness and/or injury.

Interpersonal violence is also commoner amongst men, and they are more likely to commit violent crimes such as assault, and to be the victims of most assault offences, with the exceptions of sexual assault and abduction.

In the first decade of life, deficits in many of the determinants of health, such as enriching early childhood environments, educational achievement, quality of family relationships and parental employment, can facilitate the development of poorer adult health and wellbeing. For example, national literacy assessments indicate school-aged boys perform less well than their female counterparts across all socioeconomic groups, especially those most disadvantaged (54). There is also an association between boys' play interests and behaviours and patterns of risk-taking behaviour when they are older (6).

In adolescence, many unhealthy habits are fostered by increased experimentation and risk-taking, and the cessation of regular consultations with health practitioners. During this period, the difference between men and women's death rates increases, with injury, a major cause of death in young men.

Occupational and family stresses and a reduction in physical activity may also occur during this time, all of which can impact negatively on an individual man's health.

By adulthood, men once again revisit their general practitioners with health problems that are often already established, as the poor health habits of their youth emerge as conditions such as diabetes, heart disease and obesity. Relationship and employment issues, mental health issues, sexual health problems and prostate cancer are additional health concerns of adult men.

Role adjustment in the later stages of life may also cause mental health difficulties for older men, who may find themselves retrenched or retired, socially isolated or caring for a frail or unwell partner.

Men – historically and socially shaped

As indicated earlier, men's health is largely determined by our cultural perspectives of men. It is commonly believed that men neglect their health and do not regard their health with a high sense of priority; that men in Australia are less likely to take an active role in maintaining their own health, compared with women; and that they are also less likely to seek professional help for health problems when these occur.

Historically, 'masculinity' and 'male' characteristics have shaped attitudes towards health and caring for one's health. Many of the social factors that shape men's health are first encountered in childhood. Men are encouraged by our culture to 'be tough', and many believe that complaining about an illness or visiting the doctor undermines their masculinity or is 'a waste of time,' unless they are acutely unwell or injured. Men interact and communicate differently to women, which may create difficulties for them in voicing their health concerns - they may feel that is a sign of 'weakness' to seek help. As a result, men may not be conditioned to value good health.

The role of a man today is not as clearly defined as it was last century; men have a socially designated role as providers and protectors, yet they are also now expected to be caring and sensitive fathers and partners - in tune with their emotions, yet needing to display stoicism (9).

Women are more likely to have regular contact with doctors because of reproductive issues such as medically prescribed contraception, pregnancy and childbirth. Men do not have a biological role that requires them to see a doctor regularly, and are less likely to take action at the first sign of illness.

While the poorer health of many men may be partly due to certain attitudes, ill health is also the result of the social environment in which we live, as health is largely influenced by factors such as socioeconomic status, income, employment and one's level of education. Men from low socioeconomic backgrounds make up one of the sickest population sub-groups in Australia (4).

Socially, for many men, the role of provider is intrinsically linked with self-worth. Unemployment, therefore, puts great financial and emotional strain on a family, which in turn can make men feel guilt and stress for not fulfilling the expected role of provider. Men without sufficient education or training or a skilled trade are more likely to experience periods of unemployment, when work in unskilled positions falls short. Unemployment can also foster feelings of helplessness and a lack of control over one's life, meaning that physical and mental health needs may also be neglected. Depression in men is associated with an increased risk of physical health disorders, such as cardiovascular disease and diabetes.

Stressful life issues - such as the death of a spouse, separation, divorce or unemployment - can trigger serious depression in men more often than in women (10). Men are also more likely to resort to destructive behaviours in an attempt to deal with depression. Depressed men are twice as likely as their female counterparts to misuse alcohol and drugs.

Mortality in men

Men in the 15 to 29 year age group experience higher death rates from injury compared with males of other ages, and with females in the same age range and across all ages. Self-inflicted injury and injury from external causes result in death more often for men than women and overall, men experience higher hospital separation rates compared with women. Aboriginal men also have higher overall rates of death from injury than non-Aboriginal men (11).

The impact of disadvantage

The RACGP health inequalities study clearly demonstrated the much higher high mortality rates for males compared with females across the socioeconomic spectrum (55).

Utilising the Index of Relative Social Disadvantage (IRSD), one of the Socioeconomic Indices for Area (SEIFA) developed by the Australian Bureau of Statistics, a strong social gradient is apparent across the health of the SA population (47). Men living in socioeconomically advantaged areas are more likely to be educated about health issues, are more likely to have access to health services and are able to afford health care costs. There is also a strong association between occupation and mortality, as some occupations are more hazardous to health than others, and the geographical distribution of some occupations varies. For example, farmers suffer higher rates of injury and death than office workers.

The participation by men in health screening activities varies widely according to the risk factor considered. Not only does unemployment contribute to behavioural risks such as smoking and poor nutrition - which can lead to cardiovascular disease, respiratory disease, and hypertension - it also affects psychological wellbeing (6). Low levels of psychological wellbeing can lead to depression and suicide, and the effect of unemployment on physical and mental health problems tends to increase with the duration of unemployment (7).

Men in rural and remote areas may face disadvantage because of their geographical isolation and relative lack of access to health services. Accessing a health service often requires travel and time away from work. Rural employment may be detrimental to men's health, with exposure to hazardous machinery, chemicals, long and laborious hours often the nature of the work. Farm work-related deaths occur every three days on Australian farms, highlighting the substantial associated health risks (9).

Aboriginal men

Aboriginal men suffer a greater burden of illness and disease than the rest of the Australian population. In particular, they are generally not employed in the planning and delivery of health services, which results in a lack of an Indigenous male focus in health services and programs. Aboriginal men's health issues are perceived differently to those of non-Aboriginal men, in that they reflect issues relating to the whole male community, rather than to each individual as a separate entity (2).

Socioeconomic disadvantage, poor housing, lack of services, less education, unemployment and under-employment, and racism and discrimination are compounding issues across all areas of Aboriginal men's health (5).

The cultural identity and role of Indigenous men in their communities and families changed dramatically after colonisation, forced removal from their traditional lands, and later policies of assimilation and the removal of children. The cumulative effects of these events resulted in disempowerment, despair and loss of language and culture, which in turn was increasingly associated with substance misuse, ongoing trauma and violence, depression, and family breakdown (5).

Efforts to improve the health and wellbeing of Aboriginal men are unlikely to be successful without the acknowledgement of past injustices, the provision of opportunities to regain dignity and acquire skills and meaningful work, reconnect with land and culture, take ownership of health issues, and have Aboriginal control of the planning and delivery of appropriate health services, relevant to local need and circumstances (12).

The role of health providers

General practitioners (GPs) are the first port of call in the Australian health care system and around 80% of Australians visit a GP at least once in any year. However, researchers from the Bettering the Evaluation and Care of Health (BEACH) program reported that men attended their GP less often, compared with women (13).

Men need to be better informed about the health issues that affect them, and services should be delivered in a manner that makes them readily accessible to men. Health planners and service providers also need to acknowledge that men's health warrants greater attention.

Different groups of men have particular health issues and needs, and therefore, a range of approaches will be necessary to meet them.

As stated in *Moving Forward in Men's Health*, in order to promote and improve men's health, and make health services more responsive to men, further research is required into men's health, taking a community-wide and intersectoral approach, so that all areas of the community can work together (46).

2. Overview

Background

It is widely held that Australian men's health and, equally, their attitudes to their health, are poor. Comment is frequently made about the lower rate of use of health services by men, when compared with women; and that their lesser use contributes to poorer health and earlier mortality (14). Further, not all men have the same health experience: for example, rates of premature mortality vary by 70% when examined by socioeconomic status (see page 137).

This report seeks to inform those responsible for policy development and strategic planning for, and the delivery of services to, men by analysing the available data to determine:

- how men's health and use of services varies by age, socioeconomic status of area of residence; and
- the extent and nature of their different use of services compared with women.

The approach taken in this report is to examine the available datasets that describe men's health and wellbeing and their use of a range of health and welfare services. Similar data on women are included in order to provide a comparator. The datasets are limited to those with a geographic element, which allow for analysis by socioeconomic status and remoteness.

The data used in this report were supplied by a range of agencies: see Table A3.

Summary information

What do the data show? Table 2.1 indicates overall numbers and rates of clients and use of selected services for men and women. These are described in more detail later in the report. Table 2.2 provides data for some of the main diseases and

health risk factors; and Table 2.3 provides data from the 2006 Population Census of the population reporting limitations with certain activities, to the extent that they are classified as having a profound or severe disability, and two measures of mortality.

In sections 5 to 12, these topics (use of services, prevalence of chronic disease and associated risk factors, disability, mortality and burden of disease) are explored in more detail, and analysed by sex, age, socioeconomic status and remoteness.

In order to provide a context for these data on use of services and health and wellbeing, Section 4 describes the demography and socioeconomic status of men as a group, highlighting variations within the population.

A separate section was planned to present data about Aboriginal males, because they are a substantially disadvantaged group, with the poorest health when compared with other males in Australia. However, there were little State data available at a small area level and with sufficient numbers to map. Therefore, where possible, comparisons made are with Aboriginal men in other population groups, with Aboriginal women, with the total population, or with non-Indigenous men.

Men's use of community health services was substantially lower than that of women (a rate ratio of 0.44, 56% lower) (Table 2.1). Their use of general medical practitioner and specialist medical practitioner services was also lower than of women (rate ratios of 0.73 and 0.89, respectively; or 27% and 11% lower). Community mental health services were utilised slightly (8%) more by men than by women (a rate ratio 1.08).

Table 2.1: Use of selected services, by sex, South Australia, early 2000s¹

Variable	Males		Females		RR M:F ²
	No.	Rate ³	No.	Rate ³	No.
Community health service clients ⁴	5,413	987.7	13,330	2,337.7	0.42
Community mental health service clients Child and Adolescent Mental Health Service (CAMHS) clients	8,824	1,147.0	8,347	1,062.2	1.08
General medical practitioner services	12,074	4,036.1	9,836	4,861.7	0.83
Accident and emergency attendances	3,225,724	423,422.8	4,487,690	578,589.1	0.73
Hospital admissions	153,503	28,009.8	153,880	26,986.2	1.04
	232,461	30,759.6	26,5154	34,372.6	0.89

¹ Community health and community mental health services are for 2005/06; general medical practitioner services, 2004/05; hospital admissions, 2003/04, CAMHS 2004/05-2006/07

² RR M:F is the ratio of the rate for males to that for females

³ Rate is the average annual number of clients or services per 100,000 population

⁴ Figures for residents of Metropolitan Adelaide only

⁵ Includes consultations with specialist medical practitioners funded under Medicare

Data for selected chronic diseases, risk factors and self-assessed health status are shown in Table 2.2. These are self-reported data, collected by the Australian Bureau of Statistics in the 2004/05 National Health Survey: that is, they are not based on actual measurements. As such, they do not necessarily reflect the true situation. For example, as people age, they tend to understate their weight and overstate their height. Thus, when the calculation is made to assess whether they are overweight, or obese as measured by the Body Mass Index, these mis-statements result in an understatement of overweight and obesity. Similarly, when people are asked if they have ever been told by a doctor or a nurse that they have diabetes, it appears (from evidence in other studies involving measurements), that the self-report figures are below the 'true' level. However, for the purposes of this report, the self-report data are useful for comparing men with women, and making comparisons between various population groups of men.

Male rates for diabetes and heart, stroke and vascular disease were higher than for females (rate ratios of 1.27 and 1.10, respectively); however, rates of respiratory system diseases (including asthma) and circulatory system diseases overall were lower than for women (rate ratios of 0.90, 0.76 and 0.80, respectively).

Consumption of alcohol at levels considered to be of high risk to health was substantially higher among men, being more than twice the rate of that for women (a rate ratio of 2.32). Smoking rates were also markedly higher for men (a rate ratio of 1.39). However, rates of physical inactivity were similar for both men and women.

There was little difference between men and women assessing their health as 'fair' or 'poor' (compared to 'excellent', very good', or 'good'). However, rates of 'high' or 'very high' psychological distress (measured by the K-10 – see Glossary) were 32% lower than those reported by women (a rate ratio of 0.68).

Table 2.2: Selected chronic disease, associated health risk factors and self-reported health status, by sex, South Australia, 2004/05¹

Variable	Males		Females		RR M:F ²
	No. ('000)	%	No. ('000)	%	
Chronic diseases					
Diabetes	34.3	4.6	27.2	3.6	1.27
Respiratory system diseases	233.4	31.5	264.0	35.1	0.90
Asthma	74.4	10.0	97.5	12.9	0.76
Circulatory system diseases	130.7	17.6	165.0	21.9	0.80
Heart, stroke & vascular conditions	33.3	4.5	31.0	4.1	1.10
Risk factors					
Smoking	148.6	26.2	110.9	18.9	1.39
Alcohol - high risk consumption	53.7	9.5	24.3	4.1	2.32
Physical inactivity	195.1	34.6	204.6	34.8	0.99
Overweight	223.5	39.7	146.5	24.9	1.59
Obesity	105.2	18.7	97.6	16.6	1.12
Self assessed health status					
Fair or poor health ³	..	16.5	..	16.6	0.99
High/ Very high levels ⁴ of psychological distress	54.3	4.7	86.0	7.5	0.68

¹ ABS National Health Survey 2004/05

² RR M:F is the ratio of the rate for males to that for females

³ Respondents' general assessment of their own health, against a five point scale from 'Excellent' through 'Very good' and 'Good' to 'Fair' and to 'Poor' – 'fair' or 'poor' being the two lowest in the scale

⁴ 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).

Source: ABS National Health Survey: Summary of Results, 2004-05, (ABS Cat. No.4364.0).

There were 18% fewer men than women whose responses to questions in the 2006 Population Census indicated they had a profound or severe disability (see box opposite), but only 5% fewer who were living in the community (i.e., excluding people living in long-term residential accommodation in nursing homes, accommodation for the retired or aged (not self-contained), hostels for the disabled and psychiatric hospitals) (Table 2.3). The equivalent proportions for the population aged 65 years and over were 32% (total) and 20% (living in the community).

Death rates for males at ages 0 to 74 years (referred to as premature deaths) are 68% higher than those for females. The differential in avoidable mortality rates is even greater, at 85% – this indicator comprises those causes of death (before 75 years of age) that are potentially avoidable at the present time, given available knowledge about social and economic policy impacts, health behaviours, and health care.

Estimates of profound or severe disability

This indicator was developed by the ABS from responses to questions on Core Activity Need for Assistance in the 2006 Population Census: the responses to these questions were used to estimate the number of persons with a profound or severe disability. People with a profound or severe disability are defined as those people needing help or assistance in one or more of the three core activity areas of self-care, mobility and communication because of a disability, long term health condition (lasting six months or more), or old age.

Table 2.3: Selected health status measures, by sex, South Australia, 2004/05

Variable	Males		Females		RR M:F ¹
	Number	Rate ²	Number	Rate ²	
Estimated number of people with a profound or severe disability					
All ages	32,495	4.4	40,906	5.3	0.82
All ages, living in the community ³	28,063	3.8	30,639	4.0	0.95
65 years and over	14,039	13.7	26,362	20.2	0.68
65 years and over, living in the community ³	10,631	10.4	16,868	12.9	0.80
Mortality					
Premature mortality (deaths before 75 years of age)	13,047	1,833.5	7,654	1,088.6	1.68
Avoidable mortality	10,326	272.8	5,612	147.2	1.85

¹ RR M:F is the ratio of the percentage for males to that for females

² Rate is per 100,000 population

³ Figures for 'Living in the community' exclude people living in long-term residential accommodation in nursing homes, accommodation for the retired or aged (not self-contained), hostels for the disabled and psychiatric hospitals

Source: Australian Bureau of Statistics 2006 Population Census (unpublished).

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3. Demography and socioeconomic status

This section provides a brief overview of key demographic and socioeconomic indicators.

Males and females are almost equally represented in the South Australian population (Table 3.1). There are, however, notable variations between age groups, with males comprising higher proportions

of the population at younger ages, and females doing so at older ages. The differentials in favour of women are increasingly marked with age, to the extent that there is only one man for every two women aged 85 years and over, reflecting men's likelihood to die earlier.

Table 3.1: Population by age and sex, South Australia, 2006

Age group (years)	Males		Females		RR M:F ¹
	No.	Per cent	No.	Per cent	
0 to 14	146,890	19.0	140,493	17.7	1.07
15 to 24	109,217	14.1	103,958	13.1	1.08
25 to 34	101,043	13.0	98,518	12.4	1.05
35 to 44	113,473	14.7	113,234	14.3	1.03
45 to 54	110,310	14.2	112,809	14.2	1.00
55 to 64	89,538	11.6	92,523	11.7	0.99
65 to 74	56,307	7.3	61,275	7.7	0.95
75 to 84	37,784	4.9	50,223	6.3	0.78
85+	9,800	1.3	20,809	2.6	0.50
Total - Number	774,362	100.0	793,842	100.0	1.00
Per cent	..	49.4	..	50.6	0.98

¹ RR M:F is the ratio of the percentage for males to that for females

Source: ABS Estimated Resident Population, 2006.

This fact is not surprising, given that the life expectancy (at birth) of males (78.6 years in 2006) is estimated to be some five years lower than that for females (83.6 years in 2006) (Table 3.2). As life expectancy is based on historical patterns, it is useful to look at the proportion of deaths that

occur before a particular age. For example, in 2006, only 43.5% of all male deaths occurred before 75 years of age; for females, the proportion was even lower, at 27.1%. These statistics emphasise the extent to which many in the population are living longer.

Table 3.2: Life expectancy, South Australia, 2004-2006

Age (years)	Males	Females	RR M:F ¹
0 (at birth)	78.6	83.6	0.94
65	18.3	21.6	0.85
70	14.5	17.4	0.83
75	11.2	13.5	0.83

¹ RR M:F is the ratio of the percentage for males to that for females

Source: ABS Life Tables, South Australia, 2004-2006, (ABS Cat. No. 3302.4.55.001).

The above data are reinforced by the population projections for South Australia which, while indicating a growth of 7.6% over the 15 years to 2001, project a growth at ages 65 years and over of 48.9% (Table 3.3). Of note are the growth rates for males which are projected to be greater than

those for females: 8.4% for males of all ages, compared with 6.9% for females; and 54.7% for men at ages 65 years and over, compared with 44.3% for women. The result is a narrowing of the differential in the male to female proportions of the population at the oldest ages.

Table 3.3: Population projections by age and sex, South Australia, 2021

Age group (years)	Males		Females		RR M:F ¹
	No.	Per cent	No.	Per cent	
0 to 14	140,857	16.8	133,571	15.7	1.07
15 to 24	101,743	12.1	97,408	11.5	1.06
25 to 34	115,367	13.7	109,501	12.9	1.07
35 to 44	107,060	12.8	103,003	12.1	1.05
45 to 54	104,350	12.4	103,062	12.1	1.02
55 to 64	109,167	13.0	111,494	13.1	0.99
65 to 74	92,073	11.0	98,599	11.6	0.94
75 to 84	50,080	6.0	59,712	7.0	0.85
85+	18,548	2.2	32,634	3.8	0.57
Total - Number	839,245	100.0	848,984	100.0	1.00
Per cent	..	49.7	..	50.3	0.99

¹ RR M:F is the ratio of the percentage for males to that for females

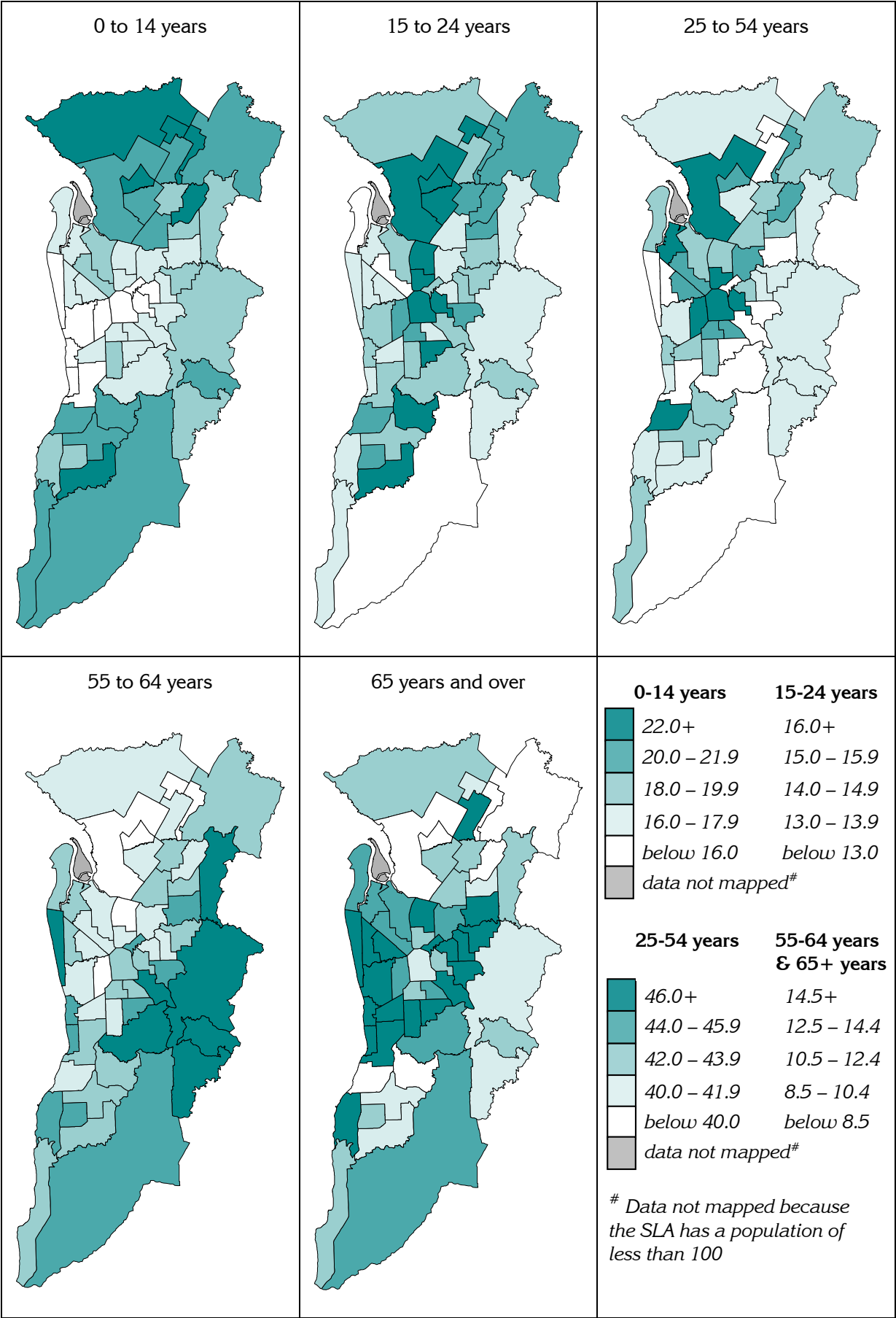
Source: Planning SA - Population Projections 2001 to 2021.

Map 3.1 shows the distribution of the Estimated Resident Population by broad age group across Metropolitan Adelaide. Perhaps one of the clearest distinctions can be made by comparing the distribution of the 0 to 14 year and the 65 years and over age groups, with strong concentrations of the latter group in the middle suburbs around the city centre. The distribution of the 15 to 24 year old population makes an unusual north-south pattern; and for the 55 to 64 year age group, the

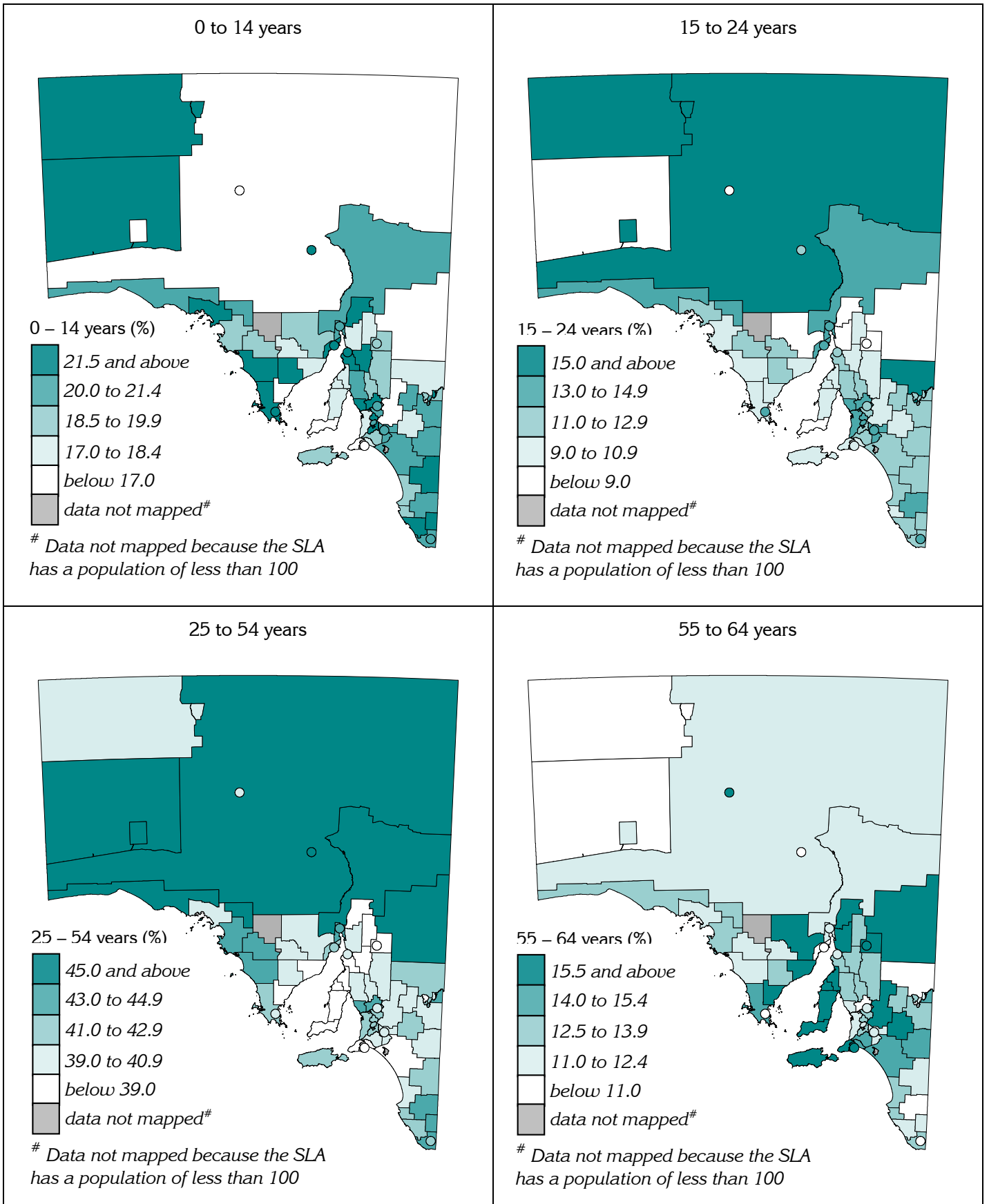
highest proportions are to be found to the east and south-east of the city centre.

In country South Australia (Map 3.2), the youngest age group is more predominant in country towns (marked with a circle), in particular, those farthest from Metropolitan Adelaide, other than Coober Pedy. The oldest age group is more predominant in the less remote parts of the State and in towns closer to Adelaide: this is particularly noticeable for areas with relatively large Aboriginal populations, none of which are mapped in the highest ranges.

Map 3.1: Age distribution, Metropolitan Adelaide, 2006

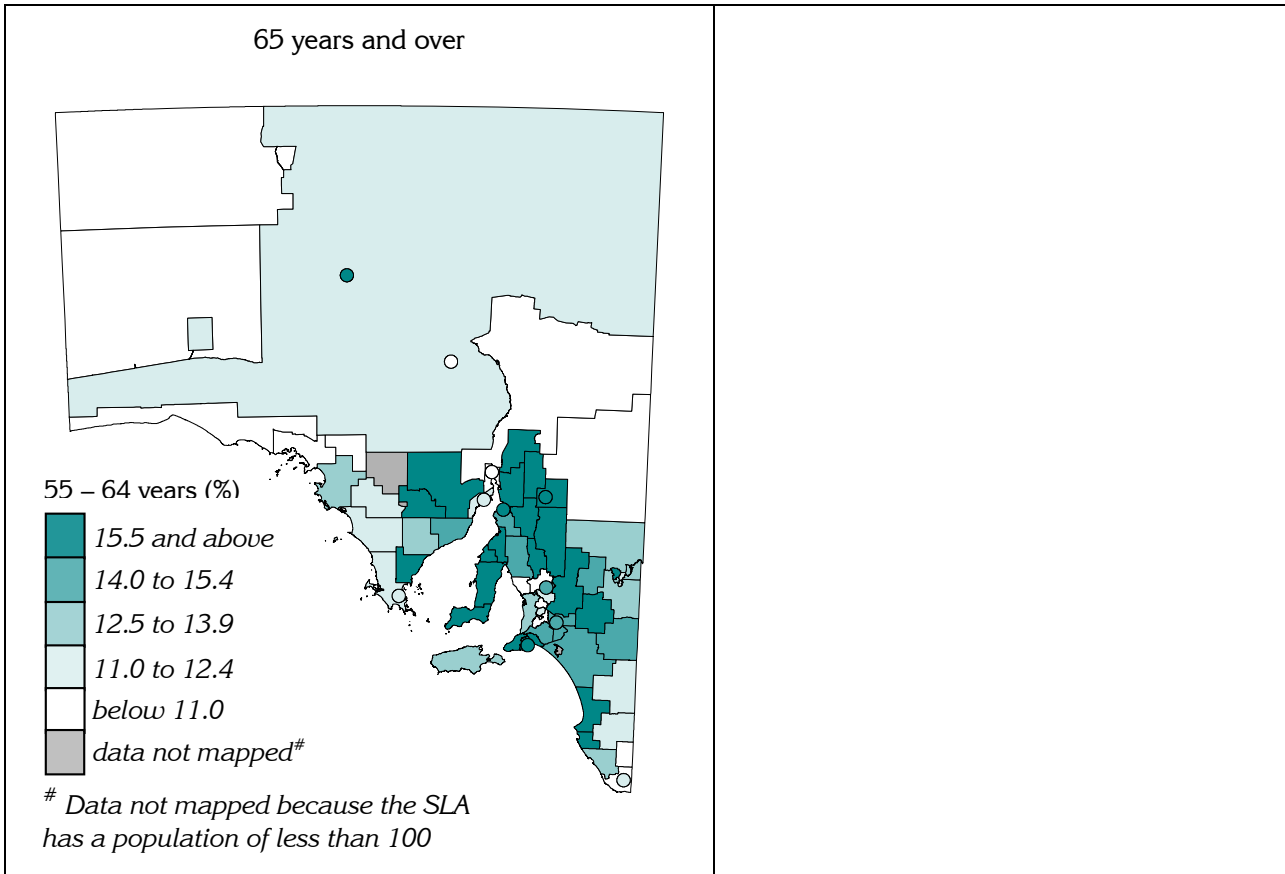


Map 3.2: Age distribution, South Australia, 2006



Source: Compiled in PHIDU from ABS Estimated Resident Population, 2006.

Map 3.2: Age distribution, South Australia, 2006 ...cont



Source: Compiled in PHIDU from ABS Estimated Resident Population, 2006.

Some data on the social determinants of health, discussed in Chapter 1, are presented in the following table.

When viewed at the State level, males and females comprised similar proportions of the population who were Aboriginal, other Australian-born, or were born in predominantly non-English speaking countries.

Males participating in secondary school education at age 16 had a 6% lower participation rate than females, with 76.1% of males at this age attending school full-time, compared with 81.0% of females (a rate ratio of 0.94).

Men were far less likely than women to be lone parents (77% fewer male than female lone parent

households, a rate ratio of 0.23), and somewhat less likely to be living alone (13% fewer male lone person households, a rate ratio of 0.87).

The unemployment rate for men was 12% above that for women (a rate ratio of 1.12), and for young men (those aged 15 to 24 years) it was 20% higher. Notably, for both males and females, youth unemployment rates were around twice those for the total population. Unemployment rates for Aboriginal people were around three times those of the total population, and Aboriginal men had an unemployment rate 15% above that for Aboriginal women.

Labour force participation by men was 22% higher than for women.

Table 3.4: Selected indicators of demography and socioeconomic status, by sex, South Australia, 2006

Variable	Males		Females		RR M:F ¹
	No.	Per cent	No.	Per cent	
Birthplace & Indigenous status					
Australian-born population (total)	550,985	73.9	569,095	74.0	1.00
Aboriginal and Torres Strait Islander people	12,448	1.7	13,109	1.7	0.98
People born in predominantly non-English speaking countries	79,101	10.6	83,164	10.8	0.98
Education					
Full-time participation in secondary school education at age 16 years	7,965	75.9	8,057	81.2	0.93
Relationship in household					
Persons in registered marriage	276,329	40.1	280,697	39.2	1.02
Partners in de facto marriage	48,467	7.0	49,811	7.0	1.01
Lone parent households	11,903	1.7	53,702	7.5	0.23
Lone person households	74,634	10.8	89,169	12.4	0.87
Labour force					
Unemployed: Total	21,552	5.5	16,627	4.9	1.12
Unemployed young people (15-24 yrs): Total	7,555	11.5	5,964	9.6	1.20
Unemployed: Aboriginal population ²	697	17.0	550	14.8	1.15
Labour force participation (15 years and over)	391,015	65.0	337,058	53.3	1.22

¹ RR M:F is the ratio of the percentage for males to that for females

² Aboriginal and Torres Strait Islanders receiving benefits under the Community Development Employment (CDEP) Scheme are shown as employed in this table

Source: Australian Bureaus of Statistics 2006 Population Census Basic Community Profile, other than for full-time participation in secondary school education at age 16 (unpublished).

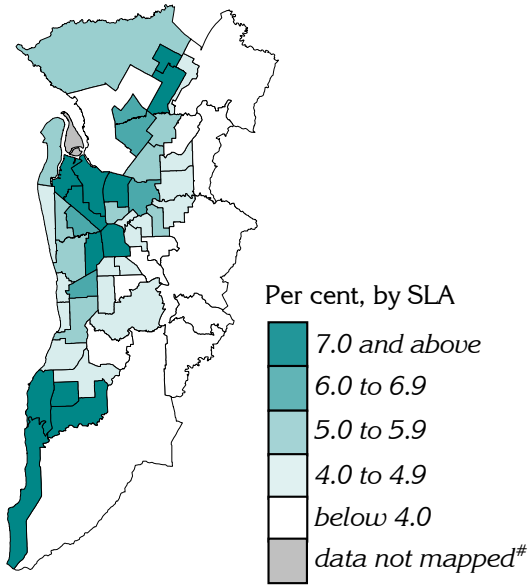
The distribution across the population for three of these indicators, those for participation in full-time education at 16 years of age and unemployment (for all ages and for young people) is further described below, as they are important indicators of men's wellbeing.

Map 3.3 shows the geographic distribution of unemployment of males in Metropolitan Adelaide. Males throughout a number of eastern, north-eastern and south-eastern Statistical Local Areas (SLAs – see Glossary for details), as well as Salisbury Balance, had the lowest unemployment rates, below 1.5%. The highest rates were found in SLAs of Adelaide and to the north-west and north,

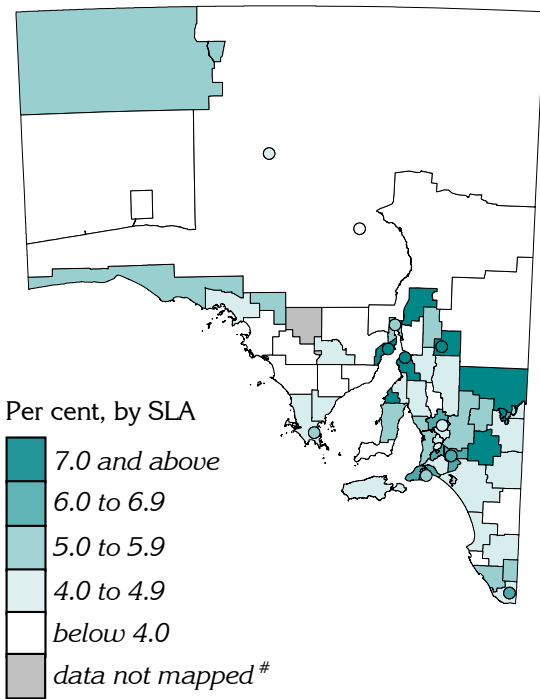
and in the outer north and outer south.

High levels of male unemployment in country South Australia were highly clustered around the larger towns, and in the Riverland (Map 3.4). SLAs with low rates were found in a small number of SLAs in the South East, Mallee, Mid North and Fleurieu Peninsula, as well as across the Northern & Far Western Health Region. These low rates are likely to be attributable to the categorisation, by the ABS, of people receiving unemployment benefits through the Community Development Employment Projects (CDEP) scheme – generally regarded as the Aboriginal 'work for the dole' scheme, as being employed.

Map 3.3: Unemployment, males, Metropolitan Adelaide, 2006

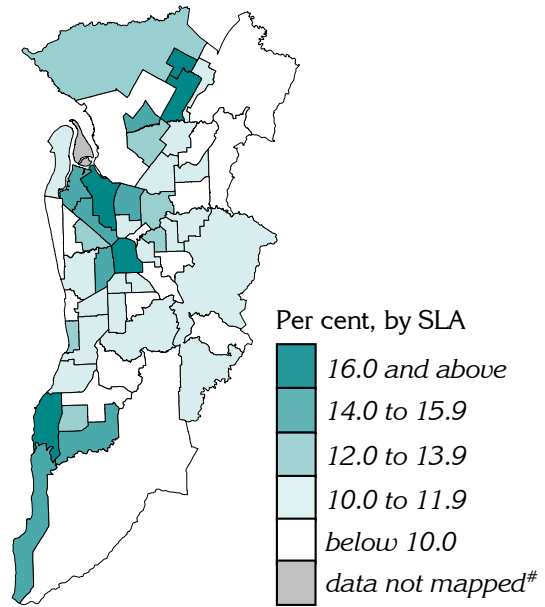


Map 3.4: Unemployment, males, country South Australia, 2006



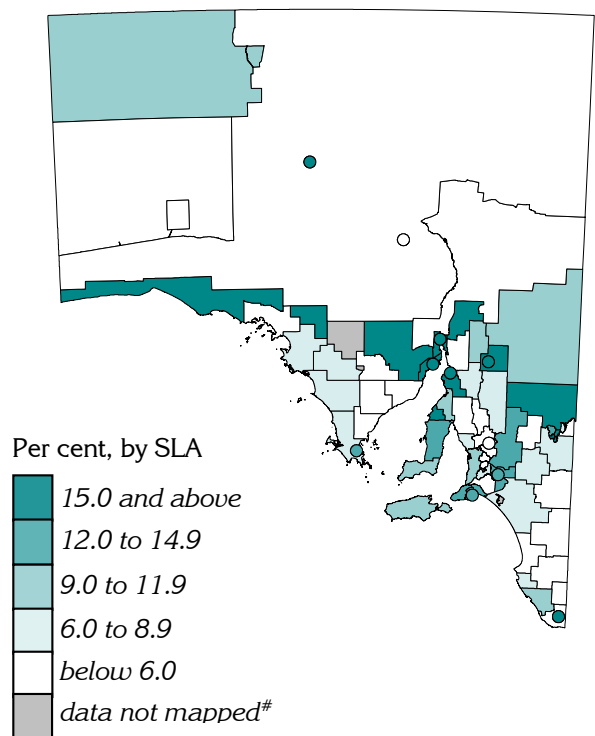
The distribution of unemployed young males in Metropolitan Adelaide is almost the same as that for males of all ages, other than that rates are, on average, twice as high (Map 3.5).

Map 3.5: Unemployment, males 15-24 years, Metropolitan Adelaide, 2006



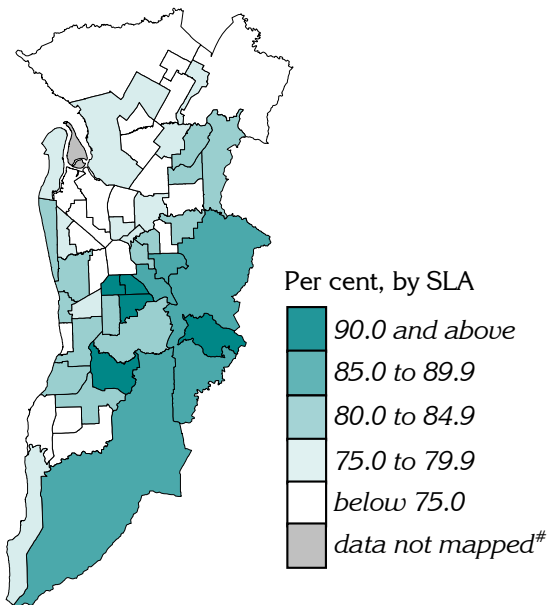
Youth unemployment in country SA (Map 3.6) shows unemployment rates being highest in a majority of the towns, as well as in SLAs covering parts of the West Coast, upper Spencer Gulf and the Riverland. Lower rates in the far northern and western SLAs could be attributed to the data excluding people CDEP.

Map 3.6: Unemployment, males 15-24 years, country South Australia, 2006



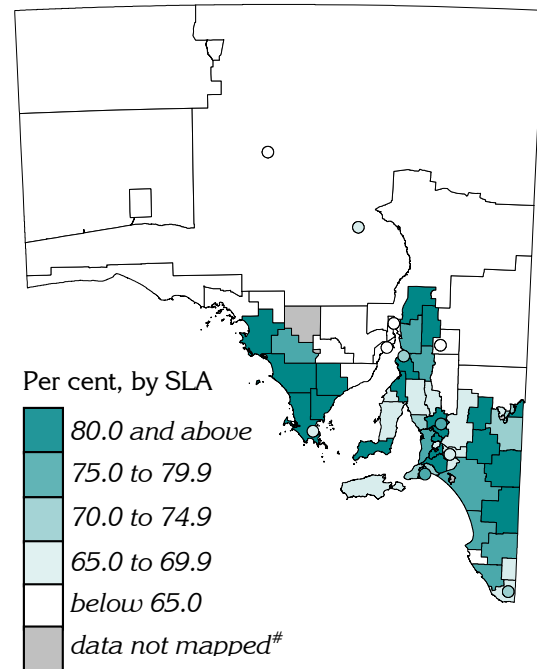
Map 3.7 shows the distribution of males aged 16 participating in full time secondary school education. The lowest participation rates were in SLAs throughout the north, north-western and south-western parts of Metropolitan Adelaide, with the highest rates recorded in SLAs to the east and south-east of the city. When comparing selected SLAs for this variable against the youth unemployment rate, areas with high unemployment also had lower school participation rates and vice versa.

Map 3.7: Full time participation in secondary school education at age 16, males, Metropolitan Adelaide, 2006



For country SA (Map 3.8), there is a very clear pattern of school participation, with many of the SLAs in the southern part of the State having the highest participation rates, and areas in the far northern and western parts of the State recording the lowest rates.

Map 3.8: Full time participation in secondary school education at age 16, males, country South Australia, 2006



Both male and female rates in the lowest SES areas were around twice those in the highest SES areas (Figure 3.1). The differentials among the young unemployed were around 50% (Figure 3.2).

Unemployment varies across the remoteness classes, although is generally lowest in the most remote areas for both males and females, overall and at ages 15 to 24 years (Figure 3.3 and Figure 3.4, respectively). The relatively low unemployment rates in the Remote and Very Remote areas are likely to be a result of the treatment of people receiving unemployment benefits through the CDEP: in these data, ABS count CDEP recipients as employed.

Participation of 16 year olds in full-time secondary education declines with increasing socioeconomic disadvantage, with a larger decline for males than for females – 24% lower in the lowest SES areas for males and 16% lower for females (Figure 3.5).

Participation also declines by remoteness, with a male participation rate in the most remote areas almost half that of the Major Cities areas (44% lower, a rate ratio of 0.56). For females, there was also a markedly lower participation rate in the most remote areas, at 31% below that of the Major Cities areas: a rate ratio of 0.69) (Figure 3.6).

Figure 3.1: Unemployment by sex and socioeconomic status, 2006

Rate ratio: Male 2.02, Female 2.08

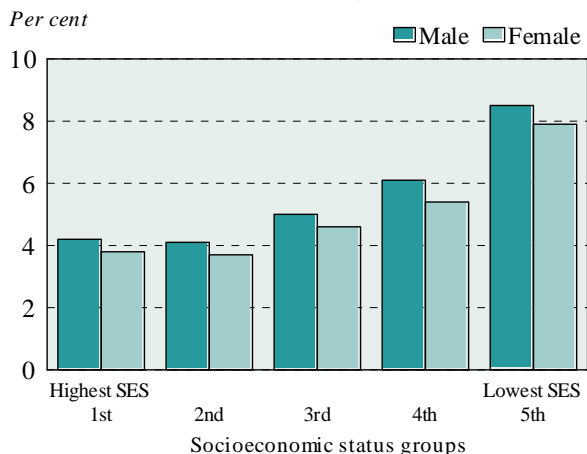


Figure 3.2: Unemployment of 15 to 24 year olds, by sex and socioeconomic status, 2006

Rate ratio: Male 1.50, Female 1.57



Figure 3.3: Unemployment by sex and remoteness, 2006

Rate ratio: Male 0.96, Female 0.80

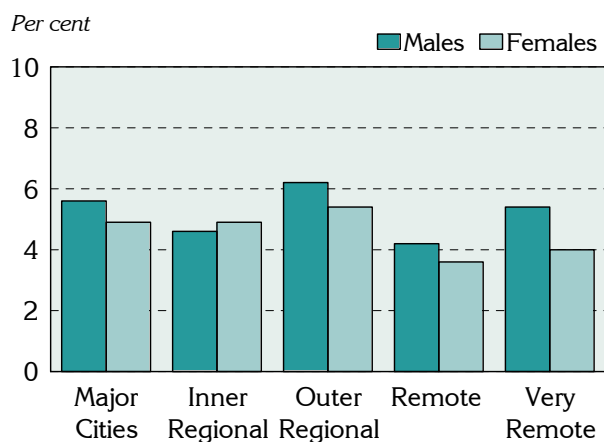


Figure 3.4: Unemployment, of 15 to 24 year olds, by sex and remoteness, 2006

Rate ratio: Male 0.43, Female 0.30

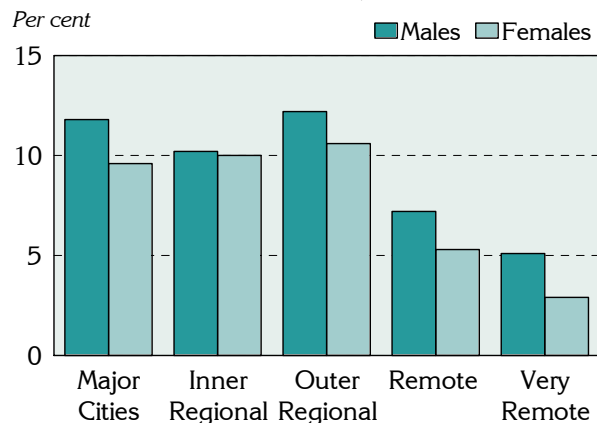


Figure 3.5: Full time participation in secondary school education at age 16, by sex and socioeconomic status, 2006

Rate ratio: Male 0.76, Female 0.84

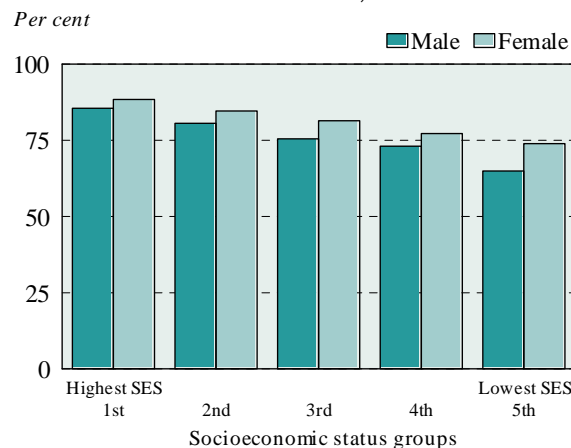
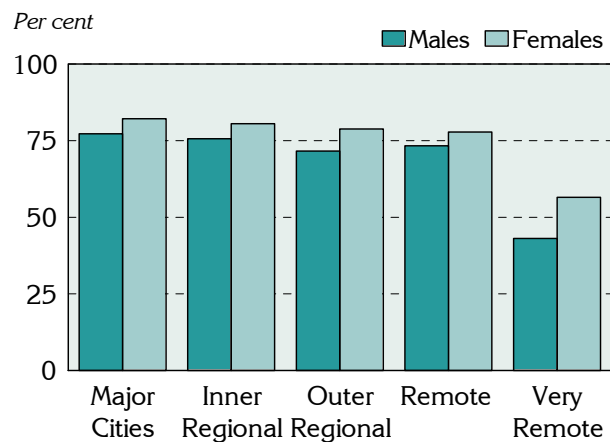


Figure 3.6: Full time participation in secondary school education at age 16, by sex and remoteness, 2006

Rate ratio: Male 0.56, Female 0.69

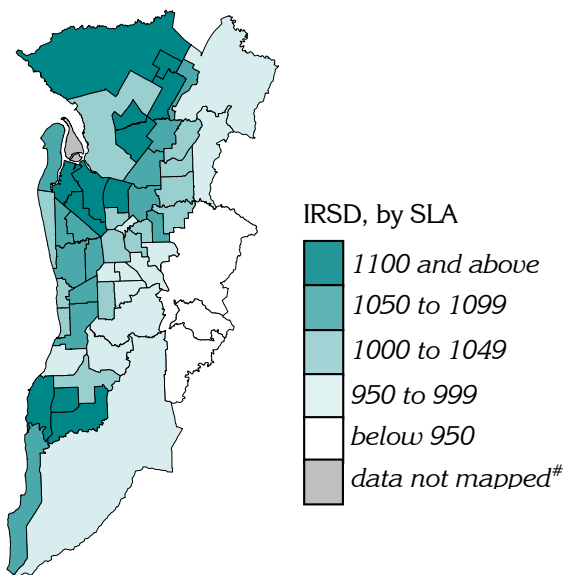


The ABS Index of Relative Socio-economic Disadvantage (IRSD – see Glossary for details) is a summary measure of socioeconomic disadvantage for the population living in geographic areas (47). It is used throughout this atlas as a reference against which to describe patterns of socioeconomic disadvantage evident in men’s use of health services, and health status.

Map 3.9 shows the distribution of the socioeconomically disadvantaged population living in SLAs in Metropolitan Adelaide, and Map 4.5 shows these data for country South Australia.

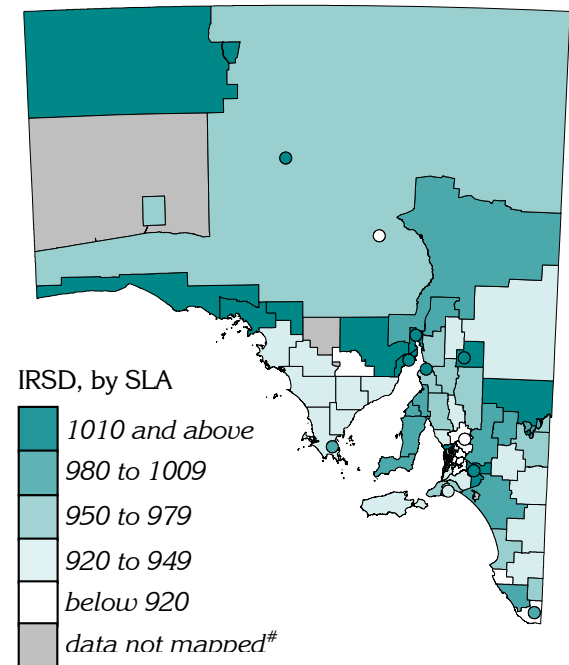
The lowest IRSD scores (that is, scores indicating the highest levels of disadvantage) were found in SLAs in three groups – in the north-west, the outer north and the outer south. Areas with populations of least socioeconomic disadvantage included a number of SLAs adjacent to the SLA of the City of Adelaide (referred to throughout this report as the SLA of Adelaide) to the north, east and south; a band of SLAs further out, to the south-east, east and north-east; and a small number of beach-side SLAs.

Map 3.9: Index of Relative Socio-economic Disadvantage, Metropolitan Adelaide, 2006



In country South Australia (Map 3.10), the areas of greatest socioeconomic disadvantage comprised a number of the larger towns and areas with higher proportions of Aboriginal people in the far north, the far west, the Riverland and the southern Fleurieu Peninsula.

Map 3.10: Index of Relative Socio-economic Disadvantage, country South Australia, 2006



4. Men's use of services

Introduction

This chapter focuses on men's use of health services. It is assumed that men are less interested in or concerned with their health, and therefore may be less likely to seek help for health related problems (4). Commonly, men are seen as infrequent consumers of health services and, as a consequence, may be blamed for their own poor health (6). When men do access health care, it is more often in relation to physical health problems, rather than emotional or mental health difficulties (15).

Community health services

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 in this analysis (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.

Community health services were used less by men than by women in each of the age groups shown (Figure 4.1), other than the 0 to 14 year age group. The difference is most notable in the 15 to 24, 25 to 34 and 35 to 44 year age groups. Male service use declined with each increase in age, before stabilising in the 55 to 74 year group, and increasing in the 75 year and over group.

Figure 4.2 shows the rate of community health service clients by sex and by the socioeconomic status of their usual address. Men made up a smaller proportion of clients than did women in each socioeconomic group, notably in the second most disadvantaged and most disadvantaged groups. Overall, community health service use increased with disadvantage, being almost 6 times higher in the most disadvantaged areas for men (rate ratio 5.73), and almost four times for women (a rate ratio of 3.91).

Community health service clients, Metropolitan Adelaide, 2005/06

Figure 4.1: Clients, by age and sex

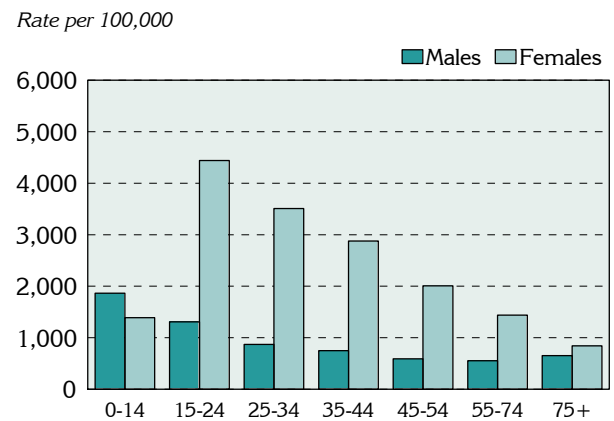


Figure 4.2: Clients by socioeconomic status and sex

Rate ratio: Male 5.73, Female 4.12

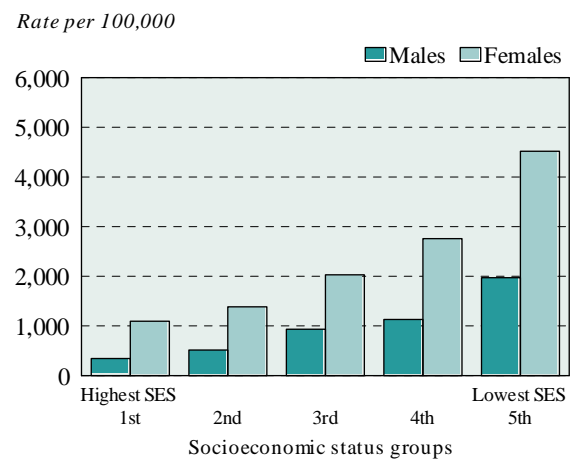


Table 4.1: Community health services, clients by age and sex, Metropolitan Adelaide, 2005/06

Age group (years)	Males		Females		RR M:F ¹
	No.	Rate ²	No.	Rate ²	
0 to 14	1,874	1,862.7	1,339	1,390.4	1.34
15 to 24	1,051	1,306.7	3,460	4,439.4	0.29
25 to 34	663	868.7	2,579	3,509.3	0.25
35 to 44	604	747.9	2,338	2,877.0	0.26
45 to 54	451	589.5	1,621	2,006.2	0.29
55 to 74	548	551.6	1,550	1,439.1	0.38
75+	222	651.5	443	840.4	0.78
Total			13,33		
	5,413	987.7	0	2,337.7	0.42

¹ RR M:F is the ratio of the rate for males to that for females

² Rate is the number of community health service clients per 100,000 population

Community health services, male clients, 2005/06

The number of males using community health services in the Southern Adelaide Health Region was 13% above the level expected from the rate for Metropolitan Adelaide (a standardised ratio of 113^{**}): at the district level, there were 86% more clients than expected from males living in the Outer Southern District (Table 4.2). Whereas rates in the Central Northern Adelaide Health Region were slightly lower than expected (an SR of 95^{**}), there was much variability at the sub-regional level, from 60% above average in the Western sub-region to 64% below average in the Central East sub-region.

Table 4.2: Community health services, male clients by Health Region, Metropolitan Adelaide, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	3,615	934.3	95^{**}
Northern sub-region	1,624	914.9	93 ^{**}
Western sub-region	1,605	1,584.0	160 ^{**}
Central East sub-region	386	357.2	36 ^{**}
Southern Adelaide	1,798	1,115.9	113^{**}
Urban Beaches District	484	750.8	76 ^{**}
Hills District	228	608.7	62 ^{**}
Outer Southern District	1,086	1,834.5	186 ^{**}
Metropolitan Adelaide (excl. Gawler)	5,413	987.7	100

¹ Rate is the number of community health service clients per 100,000 population

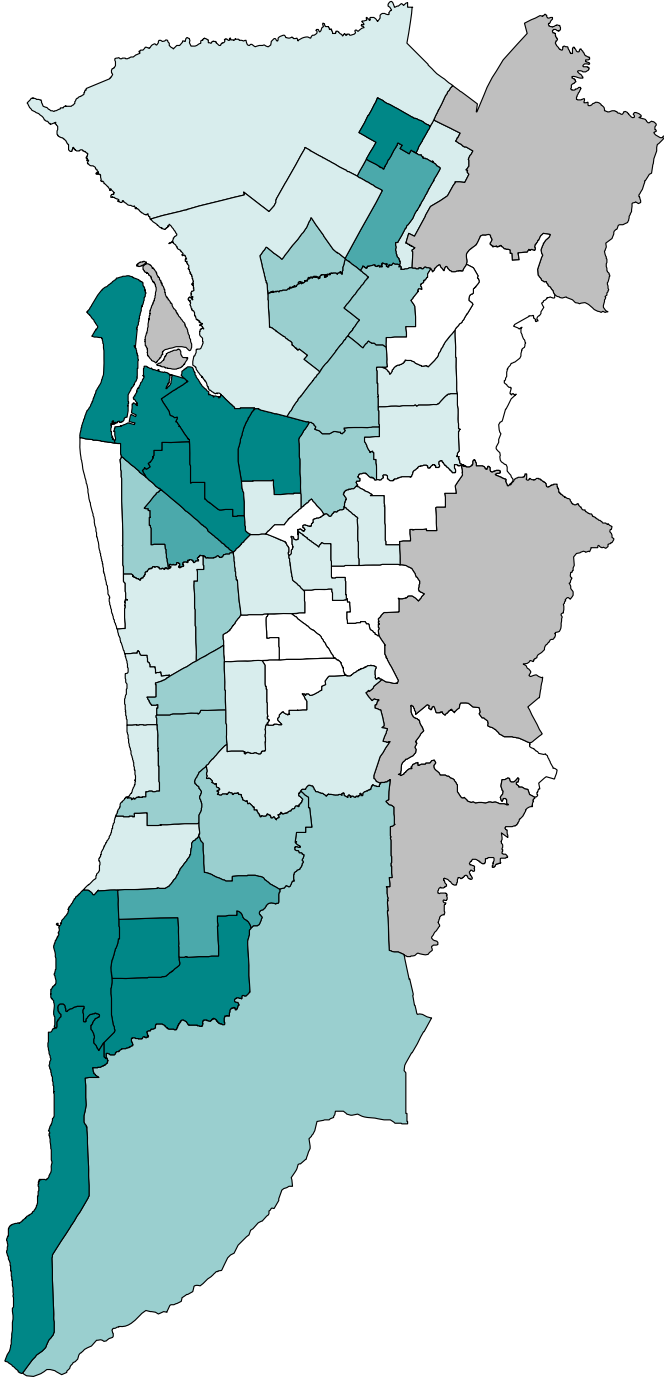
² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

SLAs with highly elevated rates of male clients were located in three distinct areas (Map 4.1), reflecting some of the areas of greatest socioeconomic disadvantage (Map 3.9, above). In the north-western suburbs, the Port Adelaide Enfield SLAs of - Park (nearly six times the expected level, an SR of 575^{**}, 435 clients), - Inner (249^{**}, 243), - Port (242^{**}, 128) and - Coast (175^{**}, 233); and Charles Sturt - North-East (256^{**}, 329), had consistently high ratios. In the outer south, the Onkaparinga SLAs of - North Coast (an SR of 264^{**}, 226 clients), - Hackham (219^{**}, 158), - South Coast (196^{**}, 252) and - Morphett (187^{**}, 223) also had elevated ratios. Playford - West Central (an SR of 206^{**}, 154 clients) was the only SLA in the outer north with a ratio in this range.

The lowest ratios in Metropolitan Adelaide, indicating fewer clients than expected from the rate for Metropolitan Adelaide, were Burnside - North-East and - South-West; Adelaide Hills - Central; Playford - Hills; Mitcham - North-East; Tea Tree Gully - Hills and - North; Unley - East and - West; Campbelltown - East; Walkerville, and Charles Sturt - Coastal.

Map 4.1: Community health services, male clients, Metropolitan Adelaide, 2005/06



Standardised ratio (as an index)*, by SLA

- 130 and above
- 110 to 129
- 90 to 109
- 70 to 89
- below 70
- data not mapped[#]

* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

[#] Data not mapped because there were between one to four clients over the time period or the SLA has a population of less than 100

Community mental health services

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 Metropolitan Adelaide and country South Australia. Mental health services provided through CAMHS for children and adolescents and their families are shown overleaf.

The largest numbers of clients of community mental health services per head of population were those in the 25 to 34 and 35 to 44 year age groups (Figure 4.3 and Table 4.3). Men were more likely to be clients than were women in all except the 55 to 74, and the 75 year and over age groups. The pattern of use across the age groups is similar for men and women.

Clients of these services were also likely to be from the more disadvantaged areas, with rates for both males and females increasing with increasing socioeconomic disadvantage (Figure 4.4). The overall differential in rates between the most and least disadvantaged areas was more than double for both males and three times for females (rate ratios of 2.24 and 3.03, respectively).

Clients of community mental services were more predominant among the populations of the Major Cities, Outer Regional and Remote areas (Figure 4.5). The pattern of client rates in this graph is likely to be influenced by differences in the availability of services between the remoteness areas.

Community mental health service clients, South Australia, 2005/06

Figure 4.3: Clients by age and sex

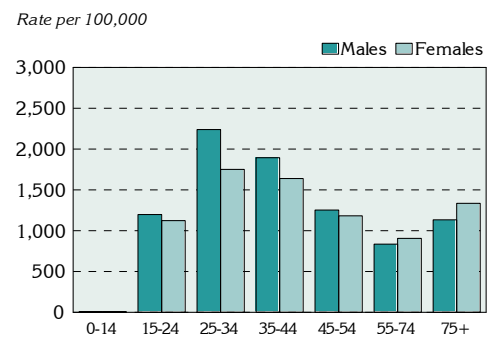


Figure 4.4: Clients by socioeconomic status and sex

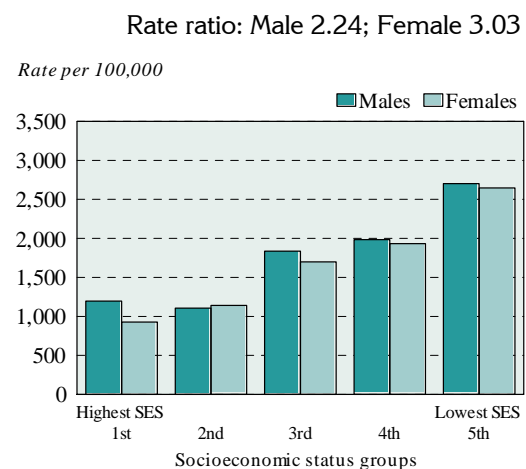


Figure 4.5: Clients by remoteness and sex

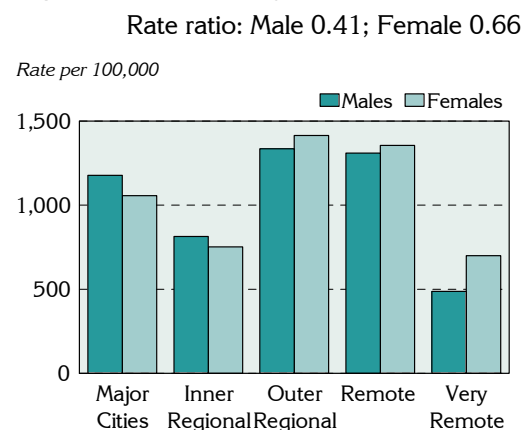


Table 4.3: Community mental health service clients by age and sex, South Australia, 2005/06

Age group (years)	Males		Females		RR M:F ¹
	No.	Rate ²	No.	Rate ²	
0 to 14	13	8.9	10	7.2	1.24
15 to 24	1,292	1,198.8	1,146	1,123.8	1.07
25 to 34	2,268	2,240.3	1,710	1,751.5	1.28
35 to 44	2,140	1,894.3	1,844	1,639.0	1.16
45 to 54	1,367	1,252.7	1,319	1,181.6	1.06
55 to 74	1,208	834.6	1,374	905.4	0.92
75+	536	1,133.2	944	1,334.8	0.85
Total	8,824	1,147.0	8,347	1,062.2	1.08

¹ RR M:F is the ratio of the rate for males to that for females

² Rate is the number of community mental health service clients per 100,000 population

Community mental health services, male clients, 2005/06

Males in the Central Northern Adelaide Health Region were 12% more likely to be clients of a community mental health service than expected from the State rate (a standardised ratio (SR) of 112^{**}): the ratio in the Western sub-region was 45% above average. In the Southern Adelaide Health Region, the ratio was 24% lower than expected (an SR of 76^{**}), with lower than expected numbers in the three districts. In country South Australia (with 4% fewer clients than expected), the ratio of male clients for both Northern & Far Western (an SR of 172^{**}) and Mid North (146^{**}) were elevated.

Table 4.4: Community mental health services, male clients by Health Region, South Australia, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	5088	1,282.8	112^{**}
Northern sub-region	2070	1,207.7	105 [*]
Western sub-region	1810	1,666.4	145 ^{**}
Central East sub-region	1208	1,036.0	90 ^{**}
Southern Adelaide	1407	867.1	76^{**}
Urban Beaches District	674	981.6	86 ^{**}
Hills District	154	421.0	37 ^{**}
Outer Southern District	579	1,015.3	89 ^{**}
Metropolitan Adelaide (excl. Gawler)	6495	1,162.1	101
Hills Mallee Southern	433	760.5	66 ^{**}
South East	300	951.1	83 ^{**}
Wakefield	509	1,043.1	91 [*]
Mid North	240	1,676.8	146 ^{**}
Riverland	115	707.3	62 ^{**}
Eyre	230	1,342.7	117 [*]
Northern & Far Western	502	1,970.3	172 ^{**}
Country South Australia (incl. Gawler)	2329	1,106.7	96

¹ Rate is the number of community mental health service clients per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The overall distribution at the SLA level of male clients of community mental health services is consistent with the pattern of socioeconomic disadvantage shown in Map 4.2. There were almost three times more clients than expected in the SLA of Adelaide (an SR of 278^{**}, 359 clients), and almost two and a half times more clients than expected in Playford - Elizabeth (246^{**}, 332). Highly elevated rates were also found in the western SLAs of Port Adelaide, in - Port (an SR of 227^{**}, 149 clients), - Coast (203^{**}, 326), - Park (170^{**}, 151) and - East (164^{**}, 314). Charles Sturt - North-East (175^{**}, 275), Playford - West Central (an SR of 202^{**}, 143 clients), in the north, and Onkaparinga - North Coast (161^{**}, 162), in the south, also had higher ratios than expected.

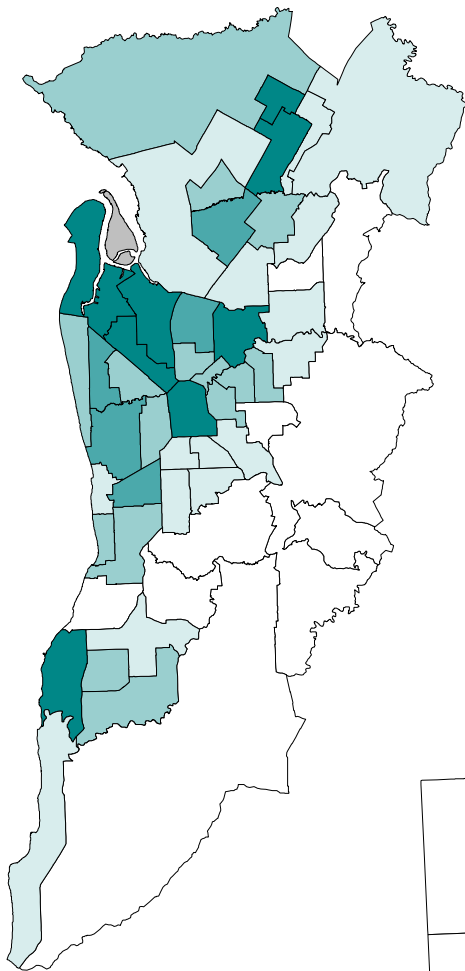
The north-eastern SLAs of Tea Tree Gully - Central and - Hills; Adelaide Hills - Central and - Ranges; Burnside - North-East; and Mitcham - Hills; and in the south, Onkaparinga - Hills and - Reservoir; and Marion - South, all had many fewer clients than expected.

Country SA

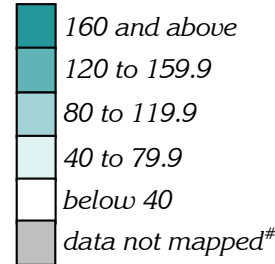
Highly elevated ratios were recorded for males in Peterborough (over four and a half times the expected number of clients, an SR of 457^{**}, 45 clients), Port Augusta (278^{**}, 221), Port Lincoln (215^{**}, 173), Whyalla (193^{**}, 235) and Port Pirie Districts - City (188^{**}, 138) using community mental health services (Map 4.3). There were also higher than expected ratios for Flinders Ranges (184^{*}, 16) and Yorke Peninsula - South (150^{*}, 32).

A number of SLAs had over 70% fewer clients than expected: these were Adelaide Hills - North (21, 8), Roxby Downs (25, 7), Mount Barker Balance (28, 13) and Grant (29, 14). Other SLAs with lower than expected ratios included Karoonda East Murray, Naracoorte and Lucindale, Adelaide Hills Balance, The Coorong, Unincorporated Far North, Robe, Ororoo/Carrieton, Streaky Bay, Alexandrina - Strathalbyn, and Loxton Waikerie - East.

Map 4.2 and Map 4.3: Community mental health services, male clients, Metropolitan Adelaide and country SA, 2005/06

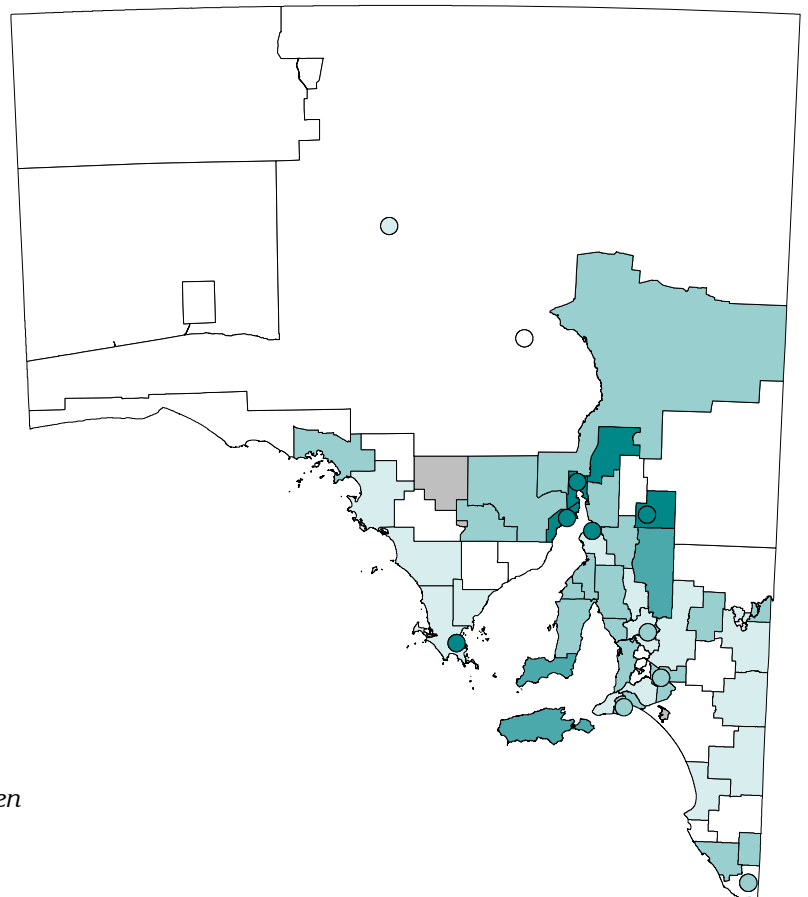


Standardised ratio (as an index)*, by SLA

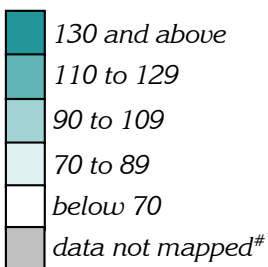


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four clients over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four clients over the time period; or the SLA has a population of less than 100

Child and Adolescent Mental Health Service

The Child and Adolescent Mental Health Service (CAMHS) provides a confidential counselling service for children and young people and their families: the majority (99.4%) of children 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.

The use of CAMHS by children and adolescents varies by age and sex, although male rates were higher than those for females in all but the 15 to 19 year age group (Figure 4.6 and Table 4.5).

There is a clear pattern of increasing rates of use of these services with increasing disadvantage, with the rate of male clients in the most disadvantaged groups almost six times the rate in the least disadvantaged group (Figure 4.7). Similarly, female rates were over four times higher in the most disadvantaged group. Across all groups, except the highest SES group, rates were higher for boys than for girls.

The highest rates of clients were in the Outer Regional and Remote areas for both males and females (Figure 4.8). Even so, the ratios between the rates in the most and least disadvantaged areas were substantial, being 1.50 for males and 1.63 for females. The pattern of client rates in this graph is likely to be influenced by differences in the availability of services between the remoteness areas.

Child and Adolescent Mental Health Service clients, South Australia, 2005/06

Figure 4.6: Clients by age and sex

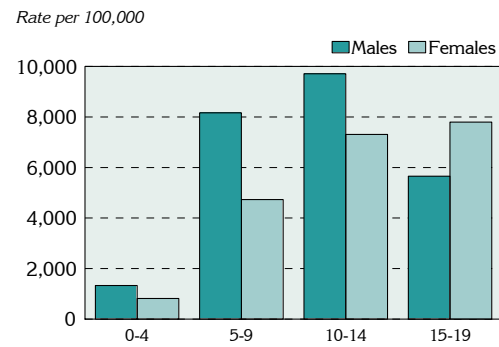


Figure 4.7: Clients by socioeconomic status and sex

Rate ratio: Male 5.77; Female 4.37

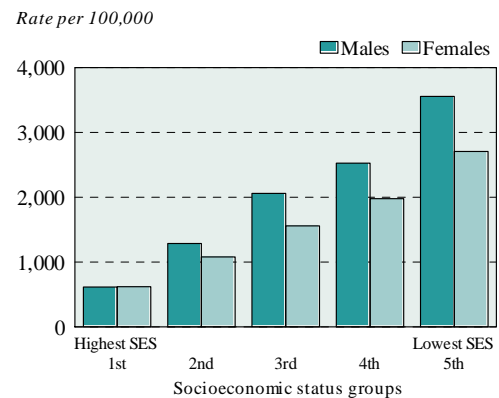


Figure 4.8: Clients by remoteness and sex

Rate ratio: Male 1.50; Female 1.63

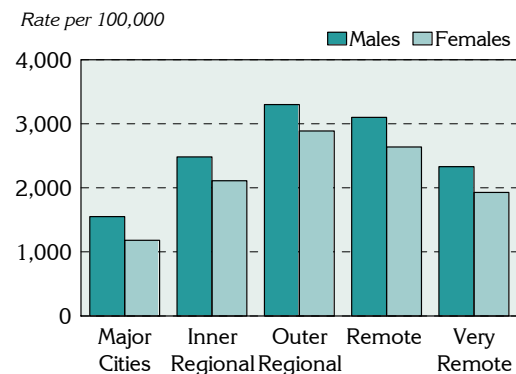


Table 4.5: Child and Adolescent Mental Health Service clients by age and sex, South Australia, 2004/05 to 2006/07

Age group (years)	Males		Females		RR M:F ¹
	No.	Rate ²	No.	Rate ²	
0 to 4	754	443.2	471	271.4	1.63
5 to 9	4,280	2,721.4	2545	1577.3	1.73
10 to 14	4,866	3,236.7	3749	2435.9	1.33
15 to 19 ³	2,174	1,885.9	3071	2599.5	0.73
Total	12,074	2,036.1	9,836	1,620.6	1.26

¹ RR M:F is the ratio of the rate for males to that for females

² Rate is the average number of child and adolescent mental health service clients per 100,000 population over a three-year period

³ Includes a small number of clients aged 20 to 24 years

Child and Adolescent Mental Health Service, male clients, 2005/06

There were fewer male CAMHS clients in Central Northern Adelaide (a standardised ratio (SR) of 73**, 4,201 clients) and Southern Adelaide (SR 81**, 151) Health Regions than expected from the State rate: this is because of the larger than expected number of male clients from country South Australia (42% more). In this context, the number of male clients from Outer Southern District was highly elevated, with an SR of 129**, compared with the Metropolitan average of 76**. Ratios were elevated, and some highly elevated, in all health regions, with the exception of Wakefield.

Table 4.6: Child and Adolescent Mental Health Service, male clients by Health Region, South Australia, 2004/05 to 2006/07

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	4,201	1,489.0	73**
Northern sub-region	2,424	2,013.2	99
Western sub-region	1,230	1,636.5	80**
Central East sub-region	547	631.8	31**
Southern Adelaide	2,151	1,648.0	81**
Urban Beaches District	660	1,285.4	63**
Hills District	308	901.0	44**
Outer Southern District	1,183	2,629.4	129**
Metropolitan Adelaide (excl. Gawler)	6,352	1,539.3	76**
Hills Mallee Southern	1,410	2,727.0	134**
South East	692	2,746.5	135**
Wakefield	834	1,917.3	94
Mid North	420	3,144.6	154**
Riverland	675	4,942.8	243**
Eyre	463	3,312.9	163**
Northern & Far Western	724	3,821.8	188**
Country South Australia (incl. Gawler)	5,218	2,893.5	142**

¹ Rate is the number of CAMHS clients per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The overall distribution at the SLA level of male clients of CAMHS (Map 4.4) is consistent with the pattern of socioeconomic disadvantage shown in Map 3.9, above. SLAs with elevated ratios included Playford - West Central (an SR of 270**, 203 clients) and - Elizabeth (239**, 360); Port Adelaide Enfield - Park (178**, 178) and Salisbury Balance (145**, 86) in the north; and Onkaparinga - Hackham (169**, 194), - Morphett (152**, 296) and - South Coast (144**, 271), in the south.

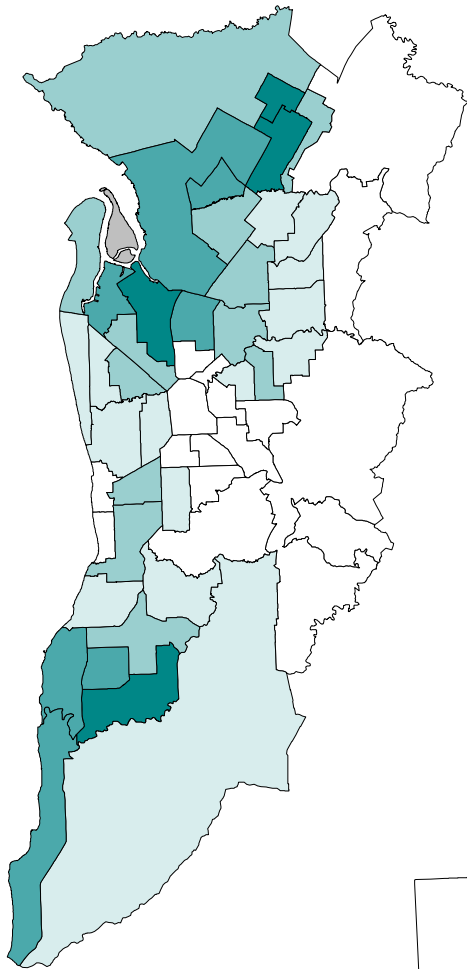
A number of SLAs in the eastern suburbs had the lowest ratios in Metropolitan Adelaide: they included the SLA of Adelaide; Burnside - South-West and - North-East; Norwood Payneham St Peters - West; Unley - East and - West; Mitcham - North-East; Prospect; and Walkerville.

Country SA

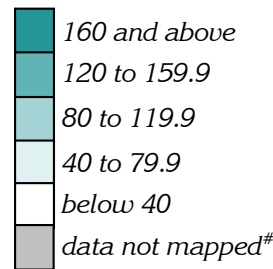
The ratio in Roxby Downs was three and a half times that expected from the State rate (an SR of 354**, 73 clients); and in Berri & Barmera - Berri, the ratio was more than three times that expected (311**, 172). All of the larger towns had elevated ratios: Murray Bridge (an SR of 286**, 391 clients), Port Lincoln (274**, 274), Port Pirie Districts - City (258**, 281), Port Augusta (243**, 277), Peterborough (238**, 47), Mount Gambier (185**, 315) and Whyalla (174**, 282).

The lowest ratios were recorded for Barunga West, Unincorporated North, Adelaide Hills - North, Anangu Pitjantjatjara, Kangaroo Island, Grant, Unincorporated Far North, Mount Remarkable, Orroroo/Carrieton, Port Pirie Districts Balance, Yankalilla and Kingston.

Map 4.4 and Map 4.5: Child and Adolescent Mental Health Service, male clients, Metropolitan Adelaide and country SA, 2005/06



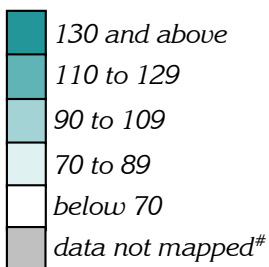
Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

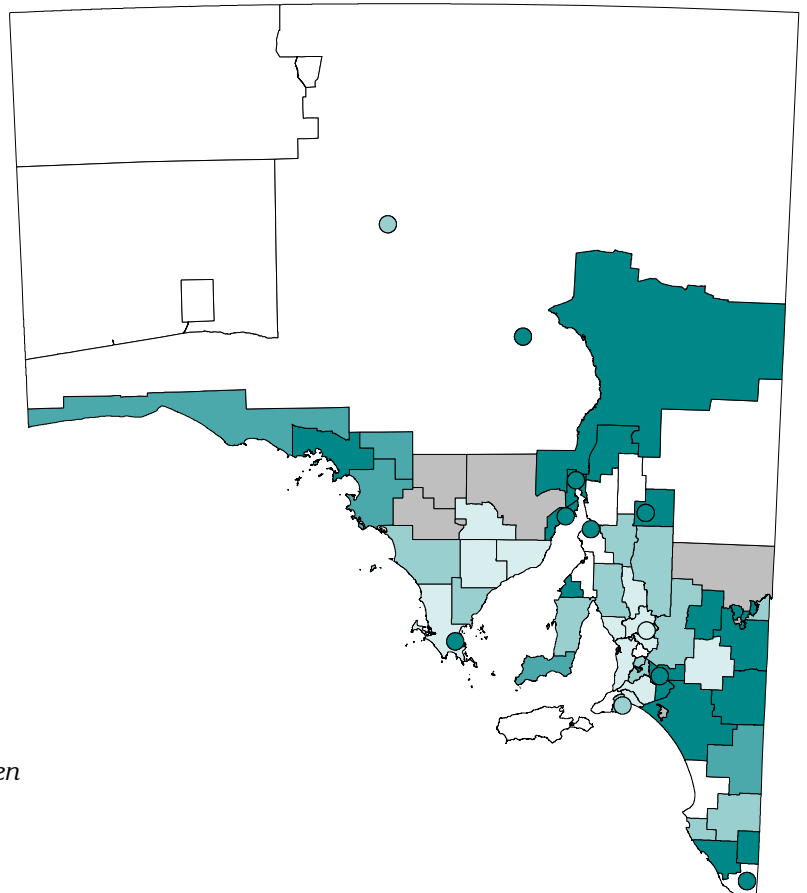
Data not mapped because there were between one to four clients over the time period; or the SLA has a population of less than 100

Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four clients over the time period; or the SLA has a population of less than 100



Domiciliary care services

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.

There were relatively few clients under 45 years of age (Figure 4.9 and Table 4.7). The rate of clients increased for both males and females after 45 years, with the majority of clients in the 75 year and over age group. There were more females than males receiving services in each age group.

Males were less likely to be clients of these services than females in each SES group, with the gap generally increasing with increasing socioeconomic disadvantage (Figure 4.10). Both male and female client rates increased with increased disadvantage, other than the rate of male clients in the 3rd group. Overall, rates for males in the most disadvantaged areas were 34% above those in the highest SES areas; and, for females, the differential was over two and a half times (a rate ratio of 2.48).

Domiciliary care service clients, Metropolitan Adelaide, 2006

Figure 4.9: Clients by age and sex

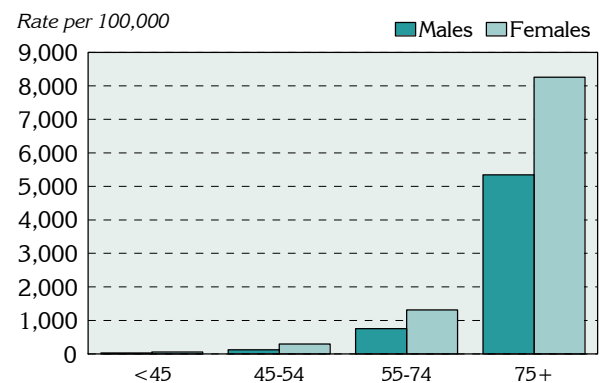


Figure 4.10: Clients by socioeconomic status and sex

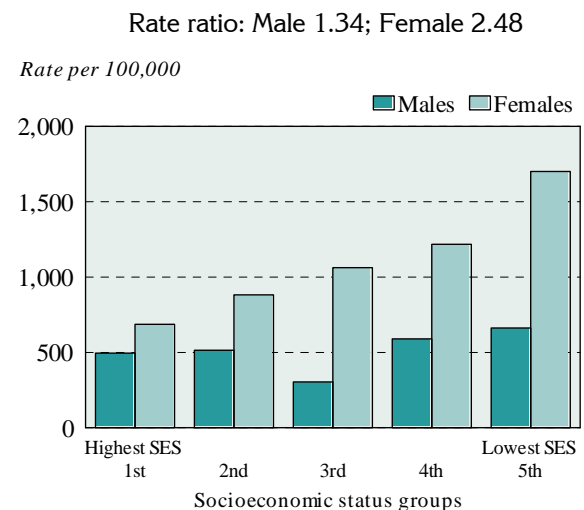


Table 4.7: Domiciliary care service clients by age and sex, Metropolitan Adelaide, 2006¹

Age group (years)	Males		Females		RR M:F ²
	No.	Rate ³	No.	Rate ³	
0 to 14	16	15.8	19	19.6	0.81
15 to 24	28	34.3	27	33.8	1.01
25 to 34	14	18.3	38	51.1	0.36
35 to 44	44	54.3	96	117.5	0.46
45 to 54	96	124.8	241	295.9	0.42
55 to 74	749	753.2	1,432	1,314.6	0.57
75 and over	1,825	5,341.9	4,369	8,255.7	0.65
Total	2,772	503.5	6,222	1,079.9	0.47

¹ Estimated Residential Population (ERP) average for 2006

² RR M:F is the ratio of the rate for males to that for females

³ Rate is the number of domiciliary care service clients per 100,000 population

Domiciliary care services, male clients, 2006

There were relatively more male clients of domiciliary care services living in the Central Northern Adelaide Health Region (9% above the expected level, a standardised ratio (SR) of 109**), and relatively fewer in Southern Adelaide Health Region (20% below the expected level (an SR of 80**). Within the metropolitan regions, the Northern sub-region had the most highly elevated ratio, with 33% more clients than expected (an SR of 133**); and Hills District had the lowest, with 36% fewer clients than expected (an SR of 64**).

Table 4.8: Domiciliary care services, male clients by Health Region, Metropolitan Adelaide, 2006

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	2,096	546.6	109**
Northern sub-region	898	667.9	133**
Western sub-region	713	559.4	111**
Central East sub-region	485	399.1	79**
Southern Adelaide	676	404.5	80**
Urban Beaches District	346	416.2	83**
Hills District	116	323.1	64**
Outer Southern District	214	444.8	88
Metropolitan Adelaide (excl. Gawler)	2,772	503.5	100

¹ Rate is the number of Domiciliary care service clients per 100,000 population

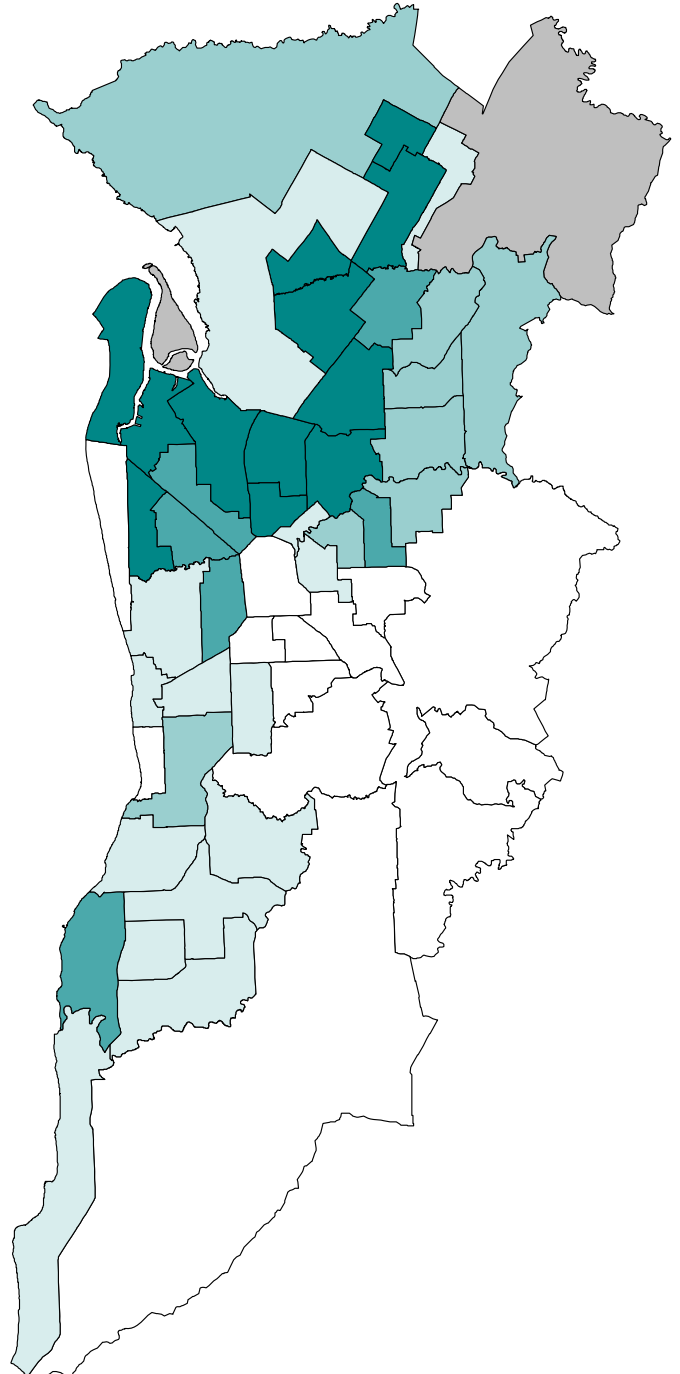
² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

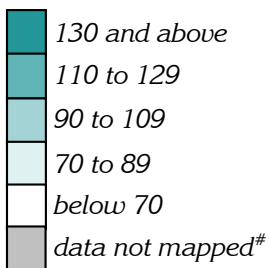
Elevated ratios were found throughout the outer northern and north western SLAs of Playford - Elizabeth (an SR of 196**, 130 clients) and - West Central (169**, 35); Port Adelaide Enfield - East (162**, 131), - Park (153**, 63), - Port (149*, 41), - Inner (141**, 86) and - Coast (132**, 98); Prospect (156**, 71); Salisbury - South-East (153**, 111), - Inner North (144*, 41) - Central (132*, 72); and in Charles Sturt - Inner West (131**, 104) (Map 45.6).

There were 74% fewer clients than expected in Adelaide Hills - Ranges (an SR of 26, 5 clients). Other SLAs with less than expected ratios included Burnside - North-East and - South-West; Mitcham - Hills and - North-East; Unley - East and - West; Holdfast Bay - South; Charles Sturt - Coastal; Adelaide; Playford - Hills and Onkaparinga - Hills.

Map 4.6: Domiciliary care services, male clients, Metropolitan Adelaide, 2006



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

[#] Data not mapped because there were between one to four clients over the time period; or the SLA has a population of less than 100

Royal District Nursing Service

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 their independence and an active role in their health care.

The proportion of the male population who were clients of these services was higher than that of the female population in all age groups (Figure 4.11 and Table 4.9). The rates of clients increased with age, with a substantially higher rate for both men and women in the 75 year and over age group.

Client rates were lowest in the highest socioeconomic group for both males and females (Figure 4.12), with the highest rate for males in the second highest SES group, where rates for males and women were the same. Overall, there was a differential in rates between the lowest and highest SES areas of 63% for males and 47% for females.

Royal District Nursing Service clients, Metropolitan Adelaide, 2005/2006

Figure 4.11: Clients by age and sex

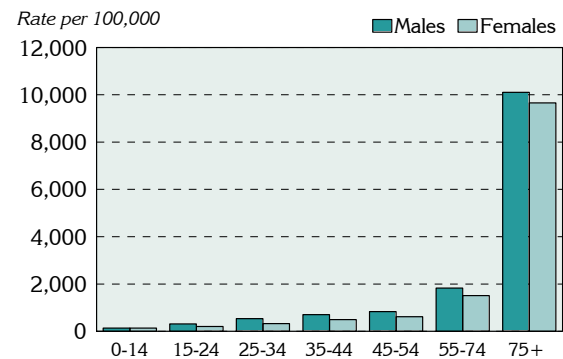


Figure 4.12: Clients by socioeconomic status and sex

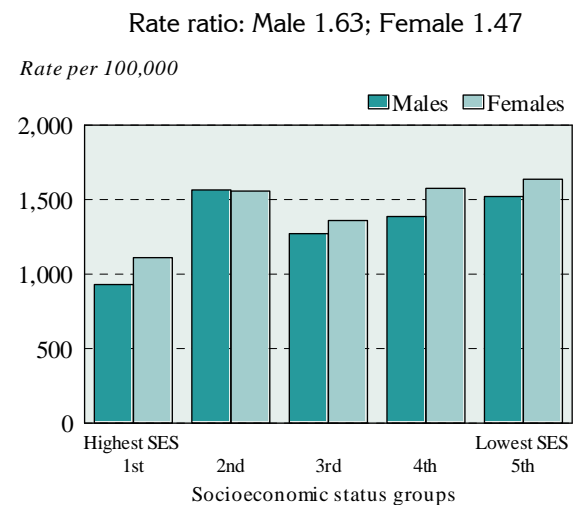


Table 4.9: Royal District Nursing Service clients by age and sex, Metropolitan Adelaide, 2005/2006¹

Age group (years)	Males		Females		RR M:F ²
	No.	Rate ³	No.	Rate ³	
0 to 14	137	136.3	131	136.1	1.00
15 to 24	253	315.2	159	203.6	1.55
25 to 34	410	537.6	240	327.2	1.64
35 to 44	572	708.4	404	497.2	1.42
45 to 54	635	830.2	500	618.3	1.34
55 to 74	1,815	1,826.8	1,627	1,510.5	1.21
75 and over	3,443	10,105.3	5,091	9,657.6	1.05
Total	7,266	1,325.8	8,151	1,429.5	0.93

Royal District Nursing Service, male clients, 2005/2006

The number of male clients of the Royal District Nursing Service (RDNS) varied little across the regions and sub-regions/districts, with the exception of Hills District, with 21% fewer clients than expected from the metropolitan rate, and Outer Southern District, with 10% more than expected.

Table 4.10: Royal District Nursing Service, male clients by Health Region, Metropolitan Adelaide, 2005/2006

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	5,009	1,315.5	99
Northern sub-region	1,794	1,264.7	95*
Western sub-region	1,594	1,326.6	100
Central East sub-region	1,622	1,364.8	103
Southern Adelaide	2,257	1,349.5	102
Urban Beaches District	1,137	1,421.5	107*
Hills District	382	1,040.8	79**
Outer Southern District	739	1,459.5	110**
Metropolitan Adelaide (excl. Gawler)	7,266	1,325.8	100

¹ Rate is the number of RDNS clients per 100,000 population

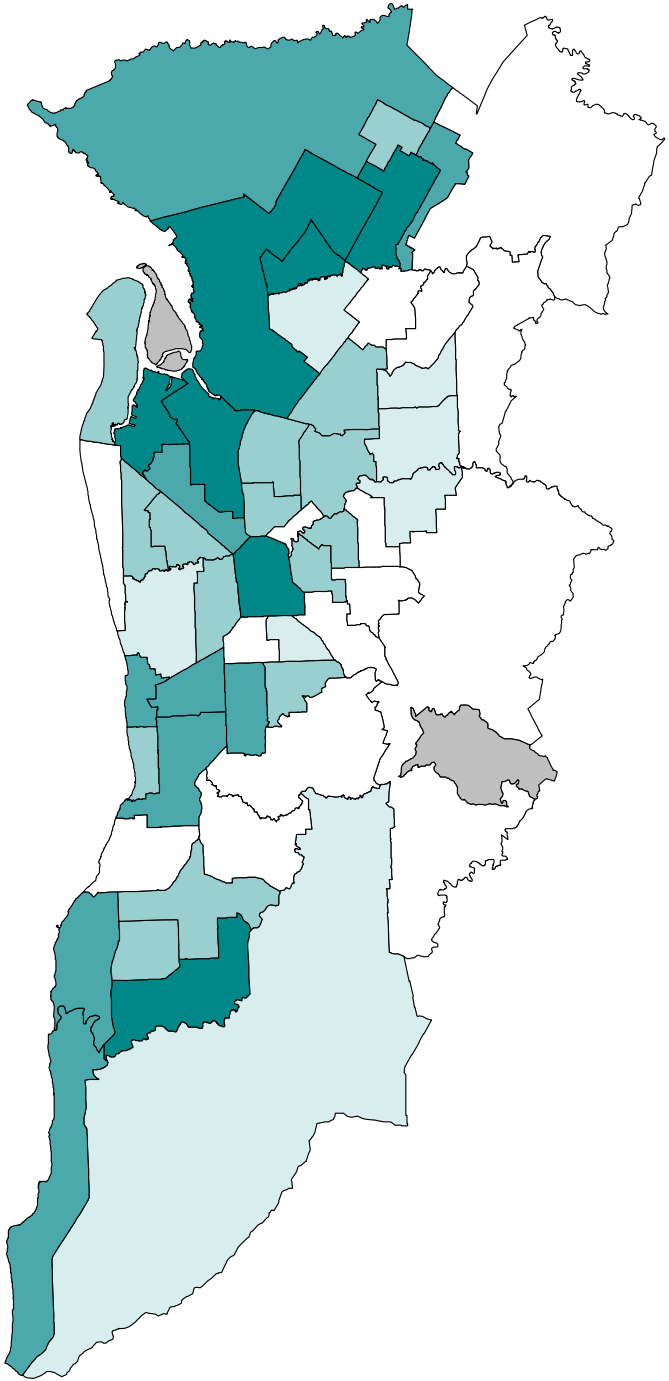
² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

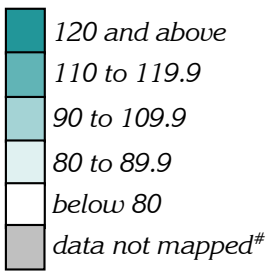
There were 7,226 RDNS male clients in Metropolitan Adelaide (an SR of 100). The most highly elevated ratios were recorded in the SLA of Adelaide (a standardised ratio (SR) of 515**, 527 clients); in the north-western SLAs of Port Adelaide Enfield - Port (133**, 96) and - Park (121*, 132); and further north in Salisbury Balance (127, 51) and - Inner North (124*, 125); and Playford - Elizabeth (125**, 205) (Map 4.7). There was also a higher than expected ratio in Onkaparinga - Hackham (an SR of 132**, 94 clients).

Lower than expected ratios were found across a number of north-eastern, eastern and south-eastern SLAs, including Adelaide Hills - Central and - Ranges; Tea Tree Gully - North and - Hills; Burnside - South-West and - North-East; Walkerville; Mitcham - Hills; Playford - Hills; Unley - West; Salisbury - North-East and Campbelltown - West. Marion - South, Onkaparinga - Reservoir and Charles Sturt - Coastal also had lower than expected ratios.

Map 4.7: Royal District Nursing Service, male clients, Metropolitan Adelaide, 2005/2006



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four clients over the time period; or the SLA has a population of less than 100

Community dental services and dental health

Dental decay and gum disease are costly health burdens both economically and for sufferers; they are also some of the most preventable health conditions.

This section contains information about the number of children and adults attending clinics of the South Australian Dental Service (SADS) and its School Dental Service (SDS). It also includes a measure of dental health for 12 year old children attending an SDS clinic: the DMFT score for children at this age with Decayed, Missing or Filled Teeth.

Note that young people aged 18 years can attend either the SADS or the SDS.

Note: The participation data include a small proportion of repeat visits, where a patient has attended more than one clinic in a year – that is, multiple attendances within a clinic are counted as ‘one’, but matching to individuals is not possible between clinics. Attendances at the Dental Hospital have been excluded.

Children and young people aged 1 to 18 years, 2005/06

Figure 4.13 shows the proportion of the population aged 1 to 18 years (by age group) attending the South Australian Dental Service, including a School Dental Service (SDS) clinic, in 2005/06.

Participation was greatest at ages 5 to 9 and 10 to 14 years. The decline at ages 15 to 18 years is likely to reflect both an age-related decrease in participation, and the lower proportion of the population at these ages attending a school and therefore not participating in the program (calls to the clinics are made through schools).

There was a marked socioeconomic gradient in participation rates, with 32 % more males and 39% more females in the most disadvantaged areas attending a clinic (Figure 4.14).

Participation increased strongly with remoteness from the Major Cities areas through to the Remote areas, with a marked drop in the Very Remote areas (Figure 4.15). This marked decline is likely, in part, to reflect the lower level of access to services in these areas. The rates in the Remote areas are higher than in the Major Cities areas by 50.0% for males and 60.5% for females.

Attendance of children and young people at a government dental clinic, South Australia, 2005/06

Figure 4.13: By age and sex

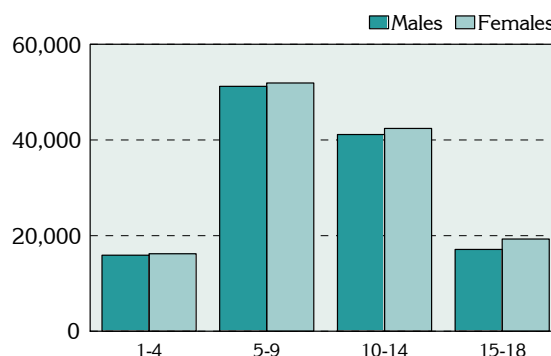


Figure 4.14: By socioeconomic status of area and sex

Rate ratio: Male 1.32; Female 1.39

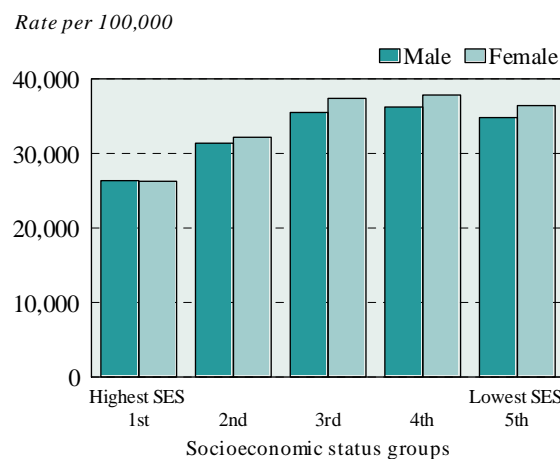
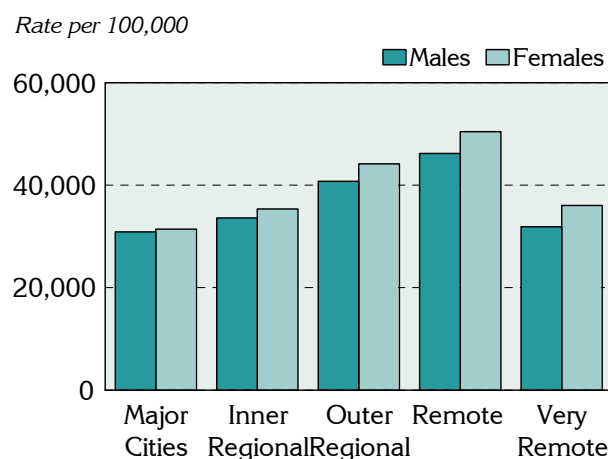


Figure 4.15: By remoteness and sex

Rate ratio: Male 1.03; Female 1.15



Attendance of males, 1 to 18 years of age, at a government dental clinic, 2005/06

There were relatively fewer young males from the Central Northern Adelaide Health Region (11% fewer than expected, a standardised ratio (SR) of 89**) attending a clinic of the South Australian Dental Service (SADS) or its School Dental Service (SDS), and relatively more from the Southern Adelaide Health Region (3% above the expected level (an SR of 103**)). Within the regions, Central East sub-region had the lowest ratio, with 36% fewer patients than expected (an SR of 64**); and Outer Southern District had the highest, with 17% more clients than expected (an SR of 117**).

Standardised ratios were generally above average at the health region level in country SA, with the most highly elevated ratios in South East, Eyre and Riverland (with SRs of 141**, 139** and 133**, respectively).

Table 4.11: Attendance of males, 1 to 18 years of age, at an SDS clinic by Health Region, South Australia, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	25,476	29,496.9	89**
Northern sub-region	13,643	31,575.1	96**
Western sub-region	7,080	33,975.2	103*
Central East sub-region	4,753	21,293.3	64**
Southern Adelaide	12,726	33,906.3	103**
Urban Beaches District	4,073	30,184.3	91**
Hills District	3,032	32,026.0	97
Outer Southern District	5,621	38,574.5	117**
Metropolitan Adelaide (excl. Gawler)	38,202	30,832.6	93**
Hills Mallee Southern	4,686	31,300.9	95**
South East	3,950	46,641.0	141**
Wakefield	4,831	36,625.4	111**
Mid North	1,349	32,451.3	98
Riverland	1,936	44,111.0	133**
Eyre	2,158	46,063.1	139**
Northern & Far Western	2,552	37,414.6	113**
Country South Australia (incl. Gawler)	21,462	37,864.1	115**

¹ Rate is the number of SDS clinic attendances per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

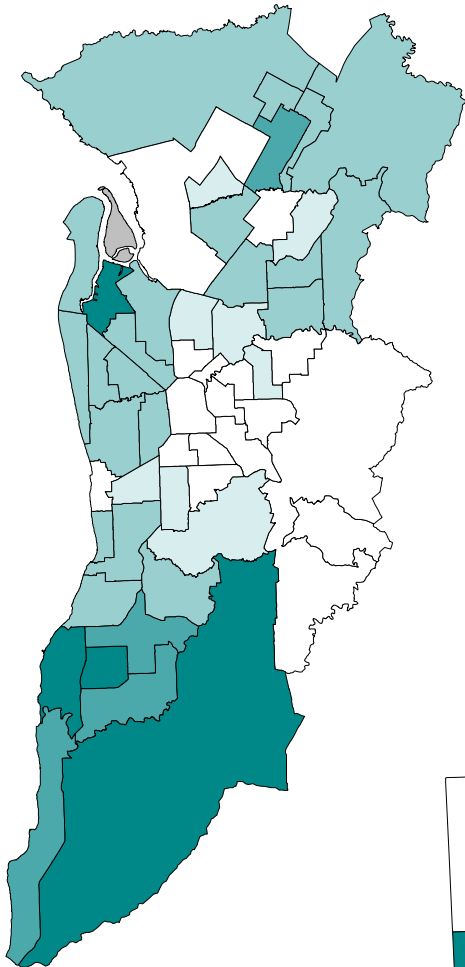
Metropolitan Adelaide

Attendance of young males at a government dental clinic was very low in the higher socioeconomic SLAs, and only moderate in many low socioeconomic SLAs: some of the SLAs with the lowest socioeconomic status also had very low participation (Map 4.8). For example, the highest rate was in Port Adelaide Enfield - Port (an SR of 137**, 490 patients) and the next highest ratios were all in the outer south, in the Onkaparinga SLAs of - Hills, - Morphett, - North Coast, - South Coast and - Hackham. Compared with these ratios, the highly disadvantaged population in the SLA of Playford - Elizabeth had a moderately elevated ratio of 112**, with a very low SR of 78** in Salisbury Balance. Adelaide, Walkerville and Norwood Payneham St Peters had the lowest ratios, with 50% or fewer clients than expected from the State rate.

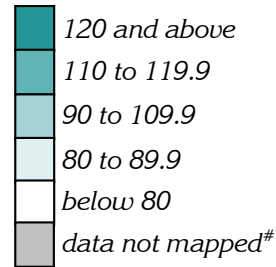
Country SA

The map of attendance at a government dental clinic of young males from country South Australia (Map 4.9) was also inconsistent with the pattern seen in many other maps in this report, or with the pattern of socioeconomic disadvantage seen in the map of the IRSD (Map 3.10). The most highly elevated standardised ratios were found in both higher SES areas such as Roxby Downs, and lower SES areas such as Whyalla. The highest of many very elevated ratios were in Streaky Bay, Cleve, Le Hunte, Kimba and Elliston on the Eyre Peninsula; Kangaroo Island; and in Wattle Range - West, Kingston and Robe in the South East; and in Unincorporated Riverland. Some of these areas have relatively large Aboriginal populations, and the high rates may, in part, indicate a particular effort to provide services to these young people. The lowest rates of participation were in Anangu Pitjantjatjara, The Coorong and Unincorporated Flinders, with lack of access to services likely to be in part the reason for this outcome.

Map 4.8 and Map 4.9: Attendance of males, 1 to 18 years of age, at a government dental clinic, Metropolitan Adelaide and country SA, 2005/06

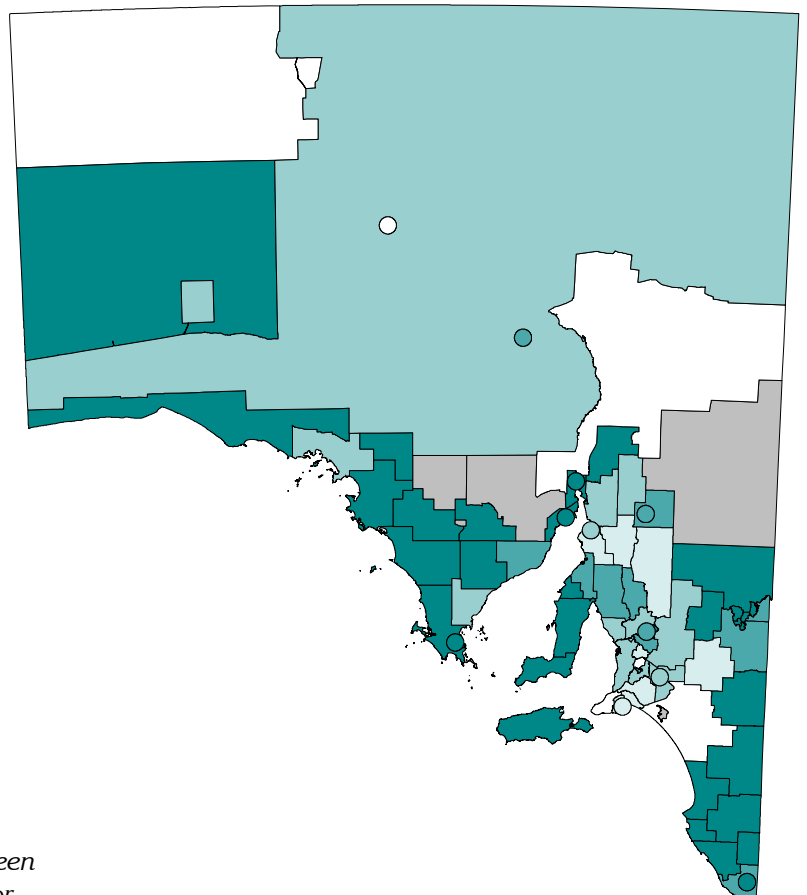


Standardised ratio (as an index)*, by SLA

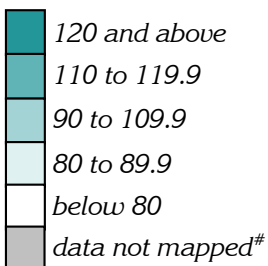


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Adults aged 18 years and over, 2005/06

The use of public dental services through the SA Dental Service (SADS) for the adult population increased with age, with the most marked increases at older ages (Figure 4.16). Participation rates were higher for women than for men at ages up to 55 to 64 years, were equal in the 65 to 74 year age group, and then were greater for men.

There was a substantial socioeconomic gradient in participation rates for adults, of over two and a half times more men and over three times more women in the most disadvantaged areas attending a SADS clinic (Figure 4.17).

Participation increased strongly with remoteness, with differentials in rates between the Very Remote and Major Cities areas of 79% for men and 93% for women (Figure 4.18).

Attendance of adults, aged 18 years and over, at a SADS clinic, South Australia, 2005/06

Figure 4.16: By Age and sex

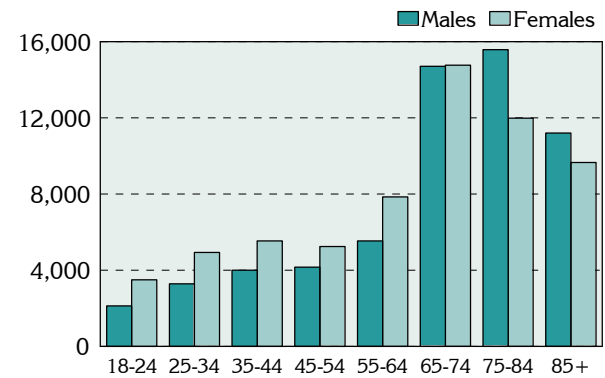


Figure 4.17: By socioeconomic status of area and sex

Rate ratio: Male 2.65; Female 3.28

Rate per 100,000

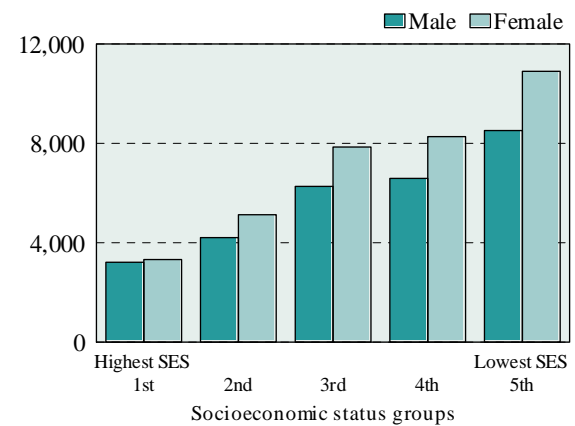
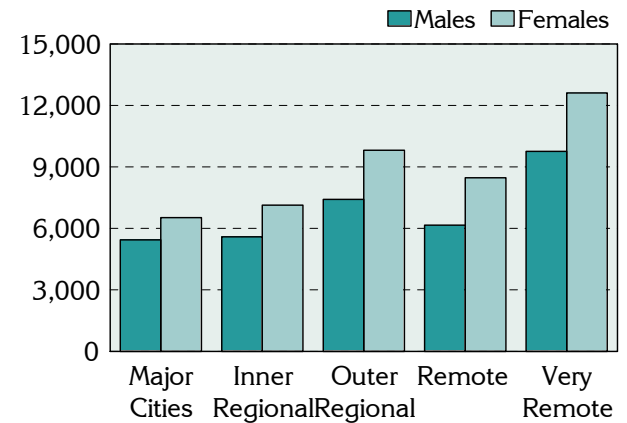


Figure 4.18: By remoteness and sex

Rate ratio: Male 1.79; Female 1.93

Rate per 100,000



Attendance of males, aged 18 years and over, at a SADS clinic, 2005/06

There were relatively fewer adult males (aged 18 years and over) from the Central Northern Adelaide and Southern Adelaide Health Regions attending a South Australian Dental Service (SADS) clinic (both with 6% fewer adults participating than expected, a standardised ratio (SR) of 94^{**}). Within the regions, Hills District and Central East sub-regions had the lowest ratios, with 56% and 36% fewer male clients than expected, respectively; and Outer Southern District had the highest, with 26% more clients than expected (an SR of 126^{**}).

Country SA had an overall participation ratio of 15% above the State rate, and standardised ratios at the health region level above average in all but South East, with the most highly elevated ratios in Northern & Far Western, Riverland and Mid North (with SRs of 163^{**}, 132^{**} and 128^{**}, respectively).

Table 4.12: Dental participation of males aged 18 years and over by Health Region, South Australia, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	15,869	5,410.1	94^{**}
Northern sub-region	7183	6,039.1	105 ^{**}
Western sub-region	5429	6,313.4	110 ^{**}
Central East sub-region	3257	3,684.9	64 ^{**}
Southern Adelaide	6,704	5,422.6	94^{**}
Urban Beaches District	3038	5,542.7	96 [*]
Hills District	716	2,525.2	44 ^{**}
Outer Southern District	2950	7,290.3	126 ^{**}
Metropolitan Adelaide (excl. Gawler)	22,573	5,413.8	94
Hills Mallee Southern	3,003	6,005.0	104[*]
South East	1,195	4,992.8	87^{**}
Wakefield	2,750	6,523.5	113^{**}
Mid North	972	7,355.9	128^{**}
Riverland	996	7,599.2	132^{**}
Eyre	864	6,420.8	111^{**}
Northern & Far Western	1,710	9,410.6	163^{**}
Country South Australia (incl. Gawler)	11,490	6,601.7	115^{**}

¹ Rate is the number of SDS clinic attendances per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

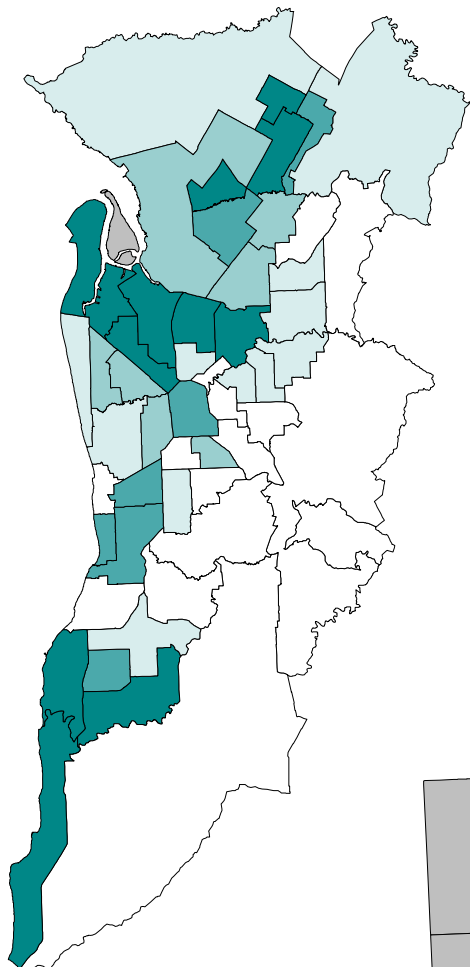
The distribution across Metropolitan Adelaide of participation rates for adult males (Map 4.10) was highly consistent with the pattern of socioeconomic disadvantage as described by the IRSD (Map 3.9), and showed the dichotomy between SLAs whose populations are users of public (health) services, and those whose populations are not. The most highly elevated ratios were recorded for men in the Port Adelaide Enfield SLAs of - Park, - Port, - East, - Inner and - Coast (with SRs of 176^{**}, 144^{**}, 133^{**}, 132^{**} and 132^{**}, respectively); the Onkaparinga SLAs of - Hackham, - North Coast and - South Coast (170^{**}, 166^{**} and 135^{**}, respectively); Charles Sturt - North-East (152^{**}); Salisbury - Inner North (147^{**}); and Playford - Elizabeth and - West Central (144^{**} and 136^{**}, respectively).

A large number of SLAs also had ratios indicating participation at rates of less than 50% of the State average. These were largely located near to the city, as well as to the east, north-east and south-east, with some on the coast.

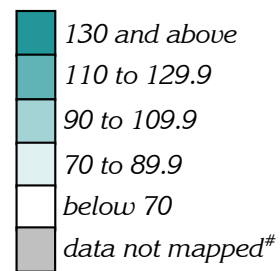
Country SA

There were also distinct areas of high and low participation rates in country SA, with highly elevated ratios in many of the towns and more remote areas of the State (Map 4.11). SLAs with more than twice the expected number of adult clients were Unincorporated West Coast (with an SR of 288^{**}, 25 patients), Coober Pedy (281^{**}, 170), Yorke Peninsula - South (257^{**}, 314), Unincorporated Whyalla (237^{**}, 15) and Streaky Bay (226^{**}, 115). The larger country towns with highly elevated ratios were Port Augusta (185^{**}, 545), Whyalla (177^{**}, 839), Peterborough (176^{**}, 94), Port Pirie Districts - City 160^{**}, 515) and Victor Harbor (157^{**}, 615). SLAs with the lowest ratios were widely spread.

Map 4.10 and Map 4.11: Attendance of men, aged 18 years and over, at a SADS clinic, Metropolitan Adelaide and country SA, 2005/06

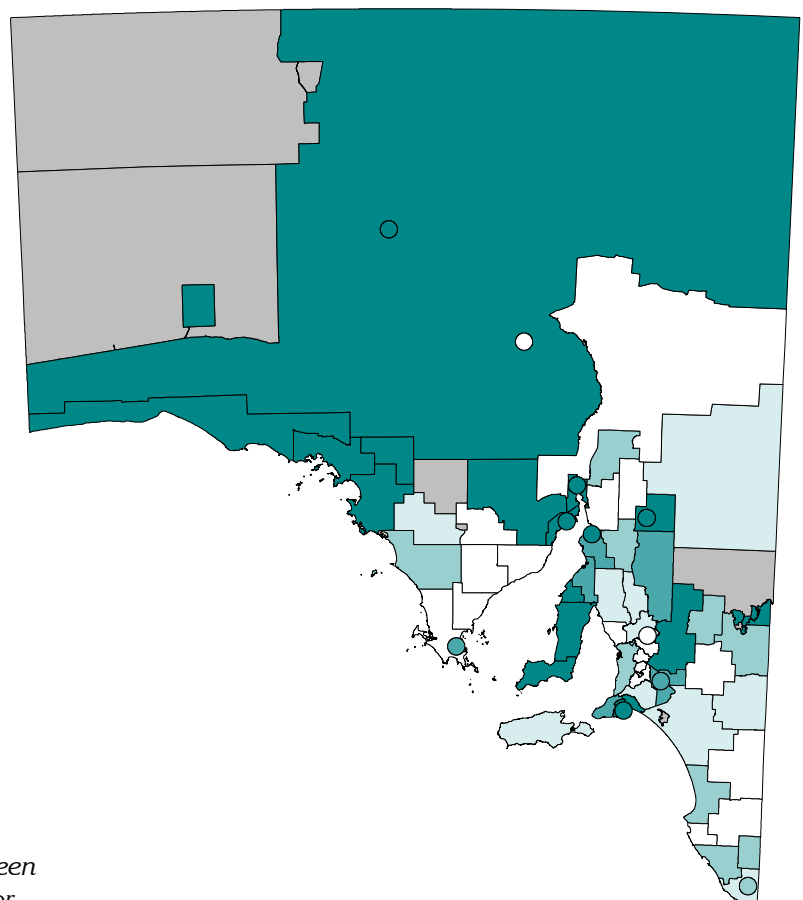


Standardised ratio (as an index)*, by SLA

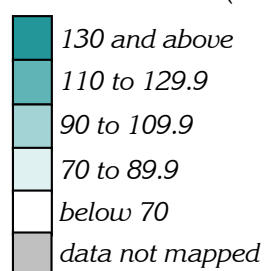


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Dental health of 12 year old children: with decayed, missing or filled teeth, 2004-06

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 (44). Fluoride in drinking water 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 (45).

Children in the highest socioeconomic group had lower rates of decayed missing or filled teeth, compared with children in the lowest socioeconomic group, for both boys (32% higher) and girls (13% higher) (Figure 4.19). Overall, the rates of decayed missing and filled teeth were higher for females, attending the School Dental Service, in all socioeconomic groups.

The dental health of 12 year old children with decayed, missing or filled teeth is shown in Figure 5.14 by remoteness (Figure 4.20.) With the exception of the Remote Areas, male rates were lower than those for females, and substantially so in the Very Remote areas.

Dental health of 12 year old children: with decayed, missing or filled teeth, South Australia, 2004-06

Figure 4.19: By socioeconomic status of area and sex

Rate ratio: Male 1.32; Female 1.13

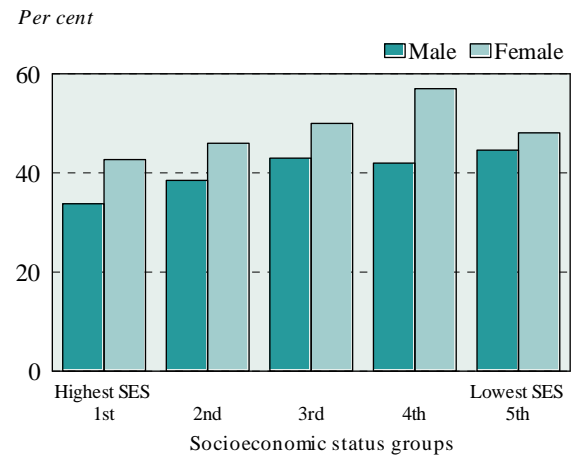
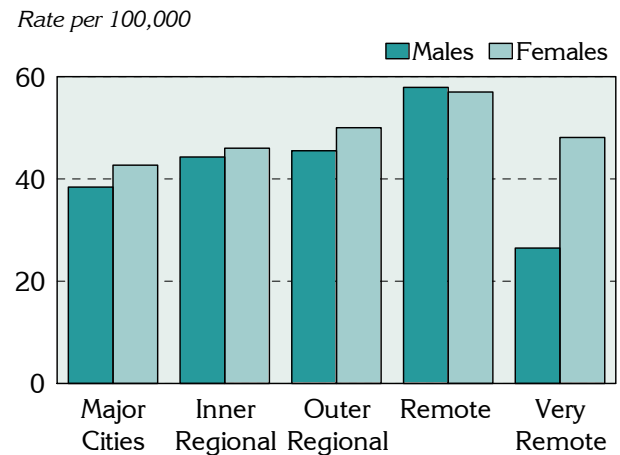


Figure 4.20: By remoteness and sex

Rate ratio: Male 0.69; Female 1.13



Dental health of 12 year old boys: with decayed, missing or filled teeth, 2004-06

In South Australia, 40.9% of 12 year old boys had decayed, missing or filled teeth. In Central Northern Adelaide (39.8%, 1,513) and Southern Adelaide (35.2%, 686) Health Regions, there were lower proportions of boys with these dental problems. At the sub-region/district level, Northern sub-region and Urban Beaches District had the highest proportions, with 41.7% and 38.8%, respectively.

In country SA, the proportion of the population of 12 year old boys who had decayed, missing or filled teeth was markedly higher than the average in Eyre (56.7%, 89 children): rates in all other regions were within 10% of the average, other than Mid North, with a notably low proportion of 38.6%.

Table 4.13: Dental health of 12 year old boys: with decayed, missing or filled teeth by Health Region, South Australia, 2004-06

Health Region	Number	Per cent
Central Northern Adelaide	1,513	39.8
Northern sub-region	828	41.7
Western sub-region	419	38.5
Central East sub-region	266	36.7
Southern Adelaide	686	35.2
Urban Beaches District	208	38.8
Hills District	155	30.4
Outer Southern District	323	35.8
Metropolitan Adelaide (excl. Gawler)	2,199	38.3
Hills Mallee Southern	271	45.8
South East	315	46.6
Wakefield	327	43.2
Mid North	74	38.6
Riverland	125	46.2
Eyre	89	56.7
Northern & Far Western	160	50.4
Country South Australia (incl. Gawler)	1,361	46.0

Metropolitan Adelaide

The highest proportions of the population of boys aged 12 years who had decayed, missing or filled teeth were in the SLAs of Salisbury Balance (54.4%, 21 boys), - Inner North (50.7%, 76) and - Central (46.3%, 74); Adelaide Hills - Ranges (50.3%, 26); Mitcham - West (48.9%, 55); and Playford - Hills (46.0%, 12) and - East Central (46.0%, 73) (Map 4.12).

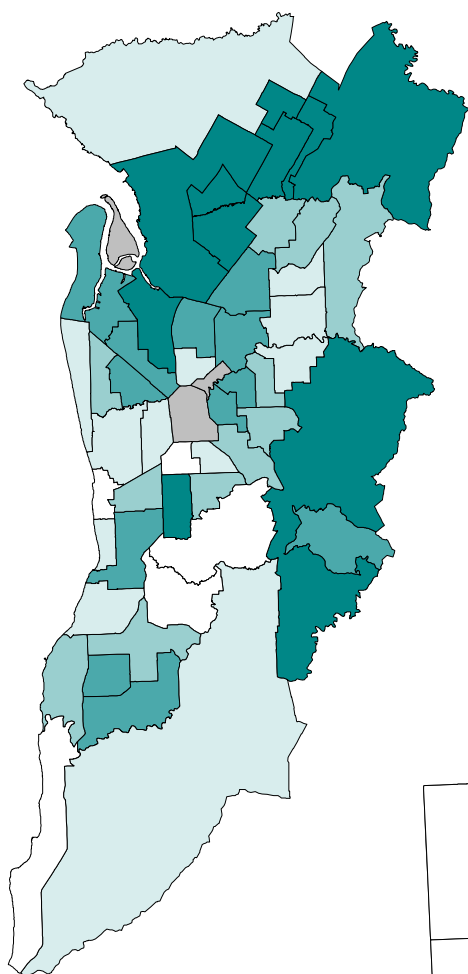
The SLAs with the lowest proportions included Unley - West, Holdfast Bay - North, Mitcham - Hills, and Onkaparinga - South Coast and - Reservoir.

Country SA

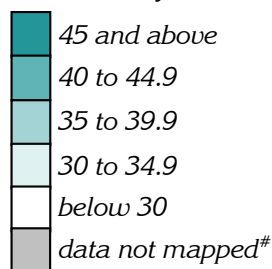
Yorke Peninsula - South (65.8%, 5), Kangaroo Island (64.3%, 36 boys), Port Lincoln (61.7%, 65) and Flinders Ranges (60.1%, 12) all had proportions of close to two thirds of boys with decayed, missing or filled teeth (Map 4.13). High proportions were also found in Goyder (55.9%, 19 boys), Whyalla (54.4%, 86), Berri & Barmera - Berri (53.4%, 27), Yankalilla (53.1%, 7), Robe (52.6%, 8), Wattle Range - East (52.2%, 21) and Alexandrina - Strathalbyn (51.2%, 18).

The lowest proportions were in The Coorong, Adelaide Hills - North, Port Pirie Districts Balance, and Clare and Gilbert Valleys.

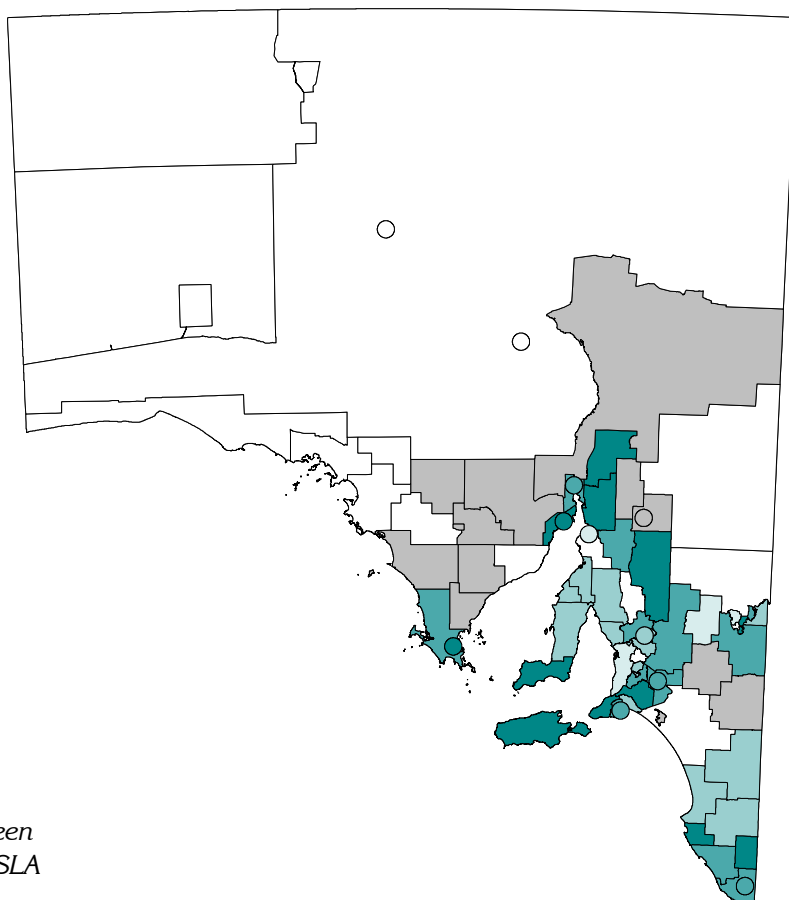
Map 4.12 and Map 4.13: Dental health of 12 year old boys: with decayed, missing or filled teeth, Metropolitan Adelaide and country SA, 2004-06



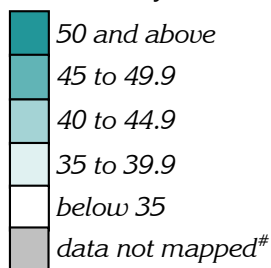
Per cent children with decayed, missing or filled teeth, by SLA



[#] Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Per cent children with decayed, missing or filled teeth, by SLA



[#] Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100

General medical practitioner services

GPs comprise the largest group of health practitioners providing primary care services in South Australia, with 7.7 million services provided under Medicare in 2004-05. GPs are frequently the first point of contact with the health care system for the approximately 85% of the population who visit them each year (48). As such, they are a significant group of providers of health care.

The data reported here are of services funded under Medicare. The data are provided for 2004/05, as data from later periods were not available to this project by sex.

All services

When compared with females, males used fewer GP services in each age group, other than at 0 to 14 years (Figure 4.21 and Table 4.14). There was a notable difference in service use between males and females from the ages of 15 through to around 64 years, after which the difference narrowed. Both men's and women's service use increased with age.

The use of GP services increased in a step-wise fashion when viewed by SES, with males in the lowest SES areas using 30% more services than those in the highest SES areas (Figure 4.22). The pattern for females was similar, with a slightly smaller SES differential (24%).

Male use of these services was notably lower than that for females across all remoteness classes, and declines with increasing remoteness (Figure 4.23). Service use for both males and females was 21% lower in the Very Remote areas, when compared with the Major Cities areas.

General practitioner services, South Australia, 2004/05

Figure 4.21: Services by age and sex

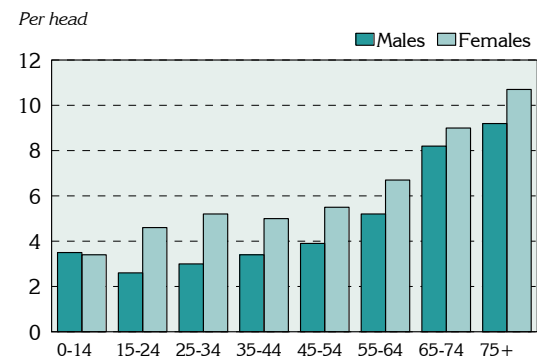


Figure 4.22: Services by socioeconomic status and sex

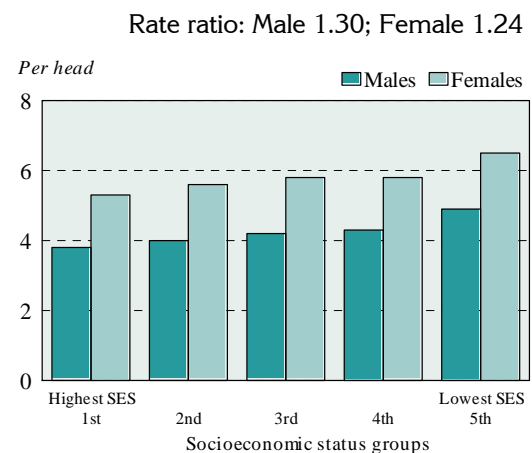


Figure 4.23: Services by remoteness and sex

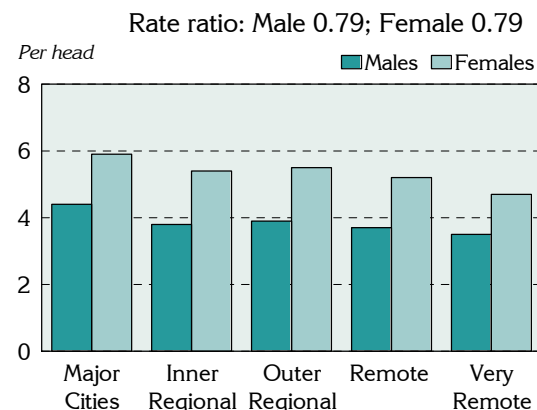


Table 4.14: GP services by age and sex, South Australia, 2004/05

Age group (years)	Males		Females		RR M:F ¹
	No.	Rate ²	No.	Rate ²	
0 to 14	509,785	349,266	474,982	341,706	1.02
15 to 24	277,336	262,219	456,729	459,026	0.57
25 to 34	308,853	303,631	510,673	524,146	0.58
35 to 44	381,434	338,182	561,117	500,207	0.68
45 to 54	422,666	393,355	604,196	549,791	0.72
55 to 74	445,903	518,567	585,665	671,553	0.77
75+	456,505	816,587	547,098	903,212	0.90
Total	423,240	915,935	747,230	1,069,932	0.86

¹ RR M:F is the ratio of the rate for males to that for females

² Rate is the number of GP services per 100,000 population

Source: Calculated on data provided by SA Health from a file purchased from Medicare Australia.

General medical practitioner services, males, 2004/05

In Metropolitan Adelaide, males used 4% more GP services than expected (a standardised ratio (SR) of 104**), with 6% more services than expected in the Central Northern Adelaide Health Region (an SR of 106**), and 1% fewer than expected in Southern Adelaide (99**). The variation at the sub-region/district level was greater, from 11% more services than expected in the Northern and Western sub-regions, to 13% fewer in Hills District.

For country SA, all but the Northern & Far Western Health Region (with an SR of 106**) had fewer services than expected.

Table 4.15: GP services, males, by Health Region, South Australia, 2004/05

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	1,696,640	447,718.0	106**
Northern sub-region	761,585	468,300.9	111**
Western sub-region	500,681	470,622.8	111**
Central East sub-region	434,374	395,105.9	93**
Southern Adelaide	676,324	417,319.5	99**
Urban Beaches District	291,813	425,863.1	101**
Hills District	138,802	368,966.9	87**
Outer Southern District	245,709	439,377.9	104**
Metropolitan Adelaide (excl. Gawler)	2,372,964	438,612.0	104**
Hills Mallee Southern	239,194	391,267.7	92**
South East	97,439	309,678.5	73**
Wakefield	213,586	404,368.7	95**
Mid North	66,747	412,312.1	97**
Riverland	58,791	345,717.0	82**
Eyre	66,975	380,219.0	90**
Northern & Far Western	110,028	448,320.9	106**
Country South Australia (incl. Gawler)	852,760	386,269.1	91**

¹ Rate is the number of GP services per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The number of GP services received by males was above the State average rate in the north-west SLAs of Playford - Elizabeth (SR of 140**, 74,364 services), - West Central (135**, 34,577), - East Central (132**, 51,577) and - West (118**, 21,428); Salisbury - Inner North (137**, 66,356) and - Central (122**, 65,305); Port Adelaide Enfield - Park (132**, 42,132) and - Coast (116**, 68,825); and Charles Sturt - North-East (122**, 65,305) and - Inner East (115**, 53,348) (Map 4.14). Services were also higher in the SLAs of Adelaide (117**, 36,499) and Onkaparinga - North Coast (115**, 44,449).

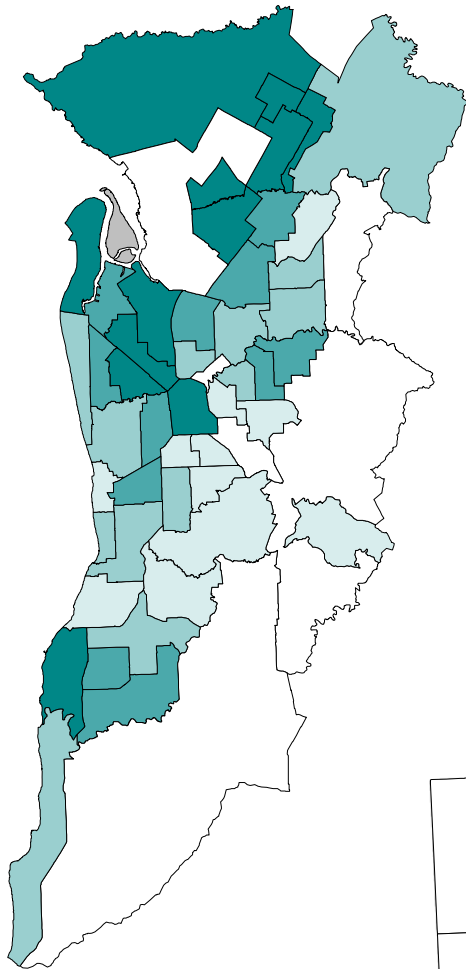
Lower than expected ratios were recorded in Burnside - South-West and - North-East, Walkerville, Tea Tree Gully - Hills, Salisbury Balance, Onkaparinga - Hills, Adelaide Hills - Ranges and Mitcham - North-East.

Country SA

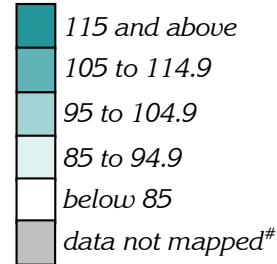
There were elevated ratios of GP services to males in Unincorporated Riverland (an SR of 159**, 470 services), Unincorporated Lincoln (133, 38), Le Hunte (121**, 3,651), Coober Pedy (119**, 6,468), Port Augusta (118**, 33,814) and Whyalla (117**, 52,466) (Map 4.15).

A number of SLAs in the Northern & Far Western Health Region had fewer GP services to males than expected, including, Unincorporated Pirie, Unincorporated Flinders Ranges, Roxby Downs, Unincorporated Far North, Flinders Ranges, Northern Areas and Unincorporated Whyalla in the northern parts of the State. In the south east, Grant, Robe, Kingston, Mount Gambier, Wattle Range - West, Naracoorte and Lucindale, and Kangaroo Island also had lower than expected ratios. Other areas with low ratios included Karoonda East Murray, Loxton Waikerie - West and - East, Renmark Paringa - Renmark and - Paringa, Ceduna, Streaky Bay, Lower Eyre Peninsula, Mid Murray, Yorke Peninsula - South, Unincorporated West Coast, Adelaide Hills - North and Balance, Mount Barker Balance, and Light.

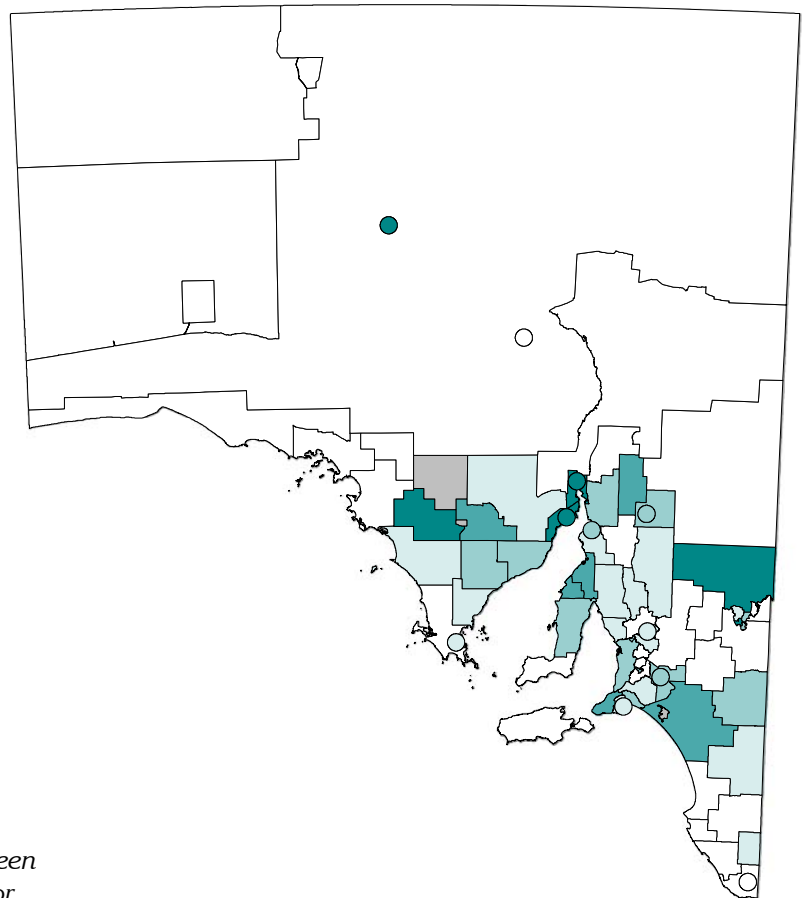
Map 4.14 and Map 4.15: General medical practitioner services, males, Metropolitan Adelaide and country SA, 2004/05



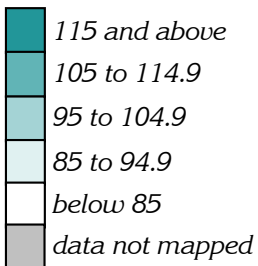
Standardised ratio (as an index)*, by SLA



Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

45 Year Old Health Check

The 45 Year Old Health Check was introduced in November 2006, as part of the Australian Better Health Initiative (ABHI) announced by the Council of Australian Governments (COAG) in February 2006. ABHI aims to enhance the capacity of the health system to promote good health and reduce the burden of chronic disease.

The health check is available to men and women aged 45 to 49 years, and is undertaken by general medical practitioners and funded as an item under the Medical Benefits Schedule.

The aim of this once-only health check is to assist with the prevention of chronic disease and to enable early intervention strategies to be put in place where appropriate. A health check at this stage of life can assist patients to make the necessary behavioural changes to prevent or delay the onset of chronic disease.

Although there was a 23% higher uptake of this health check in the lowest SES areas in Metropolitan Adelaide, the rates varied markedly, with the lowest rate in the fourth SES group, and the highest rate in the middle group (Figure 4.24). Rates in all SES areas were lower in country SA than in Metropolitan Adelaide, and there was no clear association with socioeconomic status.

Uptake of the health check decreased sharply with remoteness (Figure 4.25), with the rate in the Very Remote areas 52% below that in the Major Cities areas. By far the lowest rate for this health check was for people in the Remote areas.

Note re lack of separate data for men:

Data were not available to examine differences in the geographic distribution of uptake of this service by sex, whether in SES groupings, by remoteness, or mapped by SLA.

The regional data that were available are therefore presented for persons. While the overall rate of health checks for men and women was similar, with 6.0% of men having a health check and 6.4% of women, the situation was not uniform when examined geographically. For example, there were marked differences between the health regions, with the greatest differences recorded in some country health regions (Table 4.16, overleaf).

45 Year Old Health Check, South Australia, November 2006 to June 2007

Figure 4.24: Health check by socioeconomic status of area

Rate ratio: Adelaide 1.23, Country SA 1.05

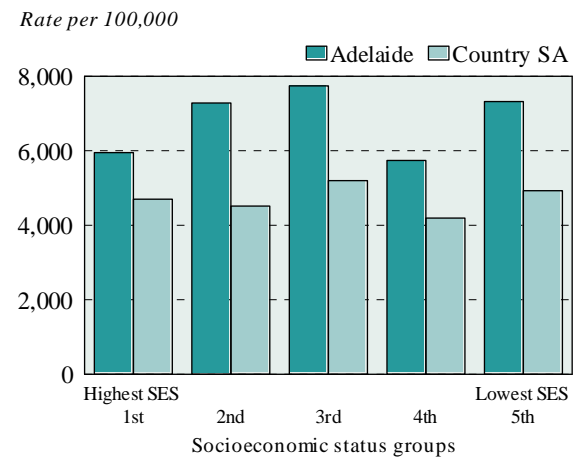
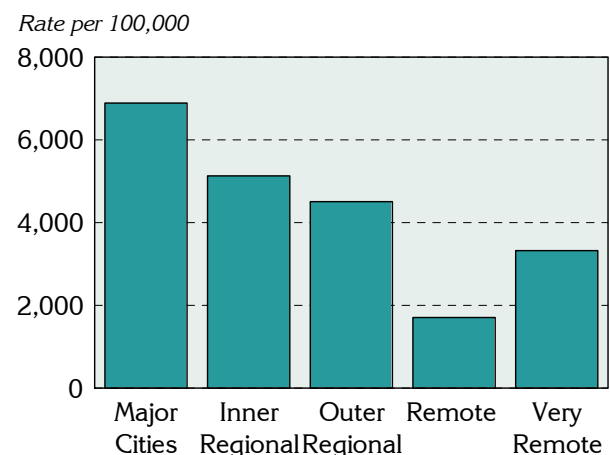


Figure 4.25: Health check by remoteness

Rate ratio: 0.48



45 Year Old Health Check, males, November 2006 to June 2007

In Metropolitan Adelaide, men living in the Southern Adelaide Health Region had the highest rate of uptake for the 45 Year Old Health Check (7.6% of the population aged 45 to 49 years), compared with 6.1% of men in Central Northern. The same pattern was evident for women, although the proportions were higher.

In country SA, the highest proportions of the male population having this health check were in Wakefield (6.6% of men aged 45 to 49 years), Northern & Far Western (5.4%) and Hills Mallee Southern (5.3%). The lowest rates were in Eyre and Riverland. For women, there was a different distribution, with the highest proportions in Northern & Far Western (8.1%) and Wakefield (7.3%). Also of note are the large variations in the rate of uptake by men and women, as illustrated by the rate ratios in the table. In South East Health Region, the health checks were provided to 57% more men than women, although the numbers were small. The differential in Hills Mallee Southern was 31%. In contrast, men in both Northern & Far Western and Eyre had around two thirds the rate of health checks compared with women.

Table 4.16: 45 Year Old Health Check, by region and sex, South Australia, 2006/07¹

Health Region	Males		Females		RR M:F ²
	No.	Rate ²	No.	Rate ²	
Central Northern	1,140	6.1	1,242	6.4	0.95
Southern Adelaide	620	7.6	730	8.3	0.92
Metropolitan Adelaide (excl. Gawler)	1,760	6.6	1,972	7.0	0.94
Hills Mallee Southern	166	5.3	123	4.0	1.31
Wakefield	183	6.6	200	7.3	0.90
Mid North	20	2.5	19	2.5	1.00
Riverland	15	1.7	20	2.5	0.68
South East	70	4.2	43	2.7	1.57
Eyre	15	1.7	16	1.9	0.89
Northern and Far Western	73	5.4	91	8.1	0.67
Country South Australia (incl. Gawler)	542	4.7	512	4.7	1.01
Total	2,302	6.0	2,484	6.4	0.95

¹ Data cover the period from 1 November 2006 (when this item was introduced) to 30 June 2007

² RR M:F is the ratio of the rate for males to that for females

³ Rate is the number of services per 100 male or female population aged 45 to 49 years

Metropolitan Adelaide

In reading the following text and viewing the maps, readers should bear in mind that geographic distribution of this health check at the regional level varied considerably for men and women.

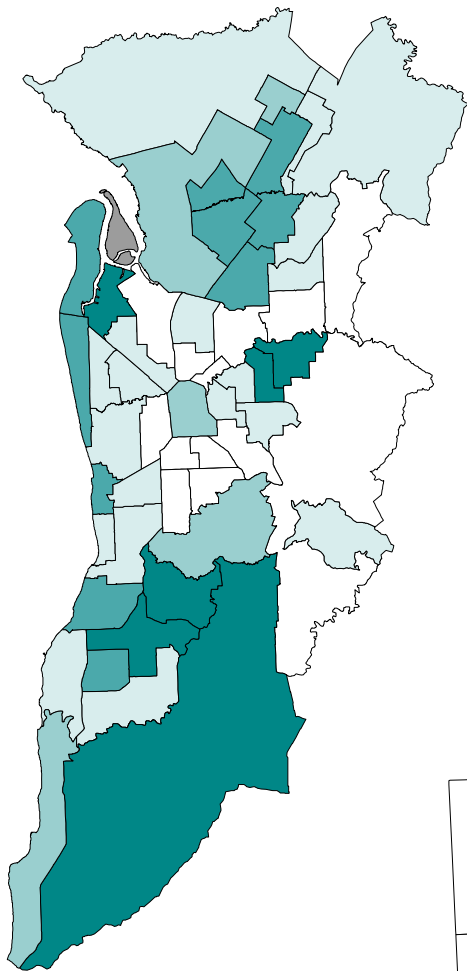
In Metropolitan Adelaide, SLAs with the highest uptake of this health check were located in three distinct areas. These were, in the north-west, Port Adelaide Enfield - Port (rate 170.7, 103 patients); in the north-east, in the Campbelltown SLAs of - East (163.2, 225) and - West (113.9, 96); and in the outer south, the Onkaparinga SLAs of - Reservoir (165.2, 257), - Woodcroft (143.0, 262) and - Hills (110.1, 74) (Map 4.16).

SLAs with at least 70% fewer men than expected having this health check included Tea Tree Gully - Hills, Port Adelaide Enfield - East, Mitcham - West and - North-East, Burnside - South-West and Unley - East.

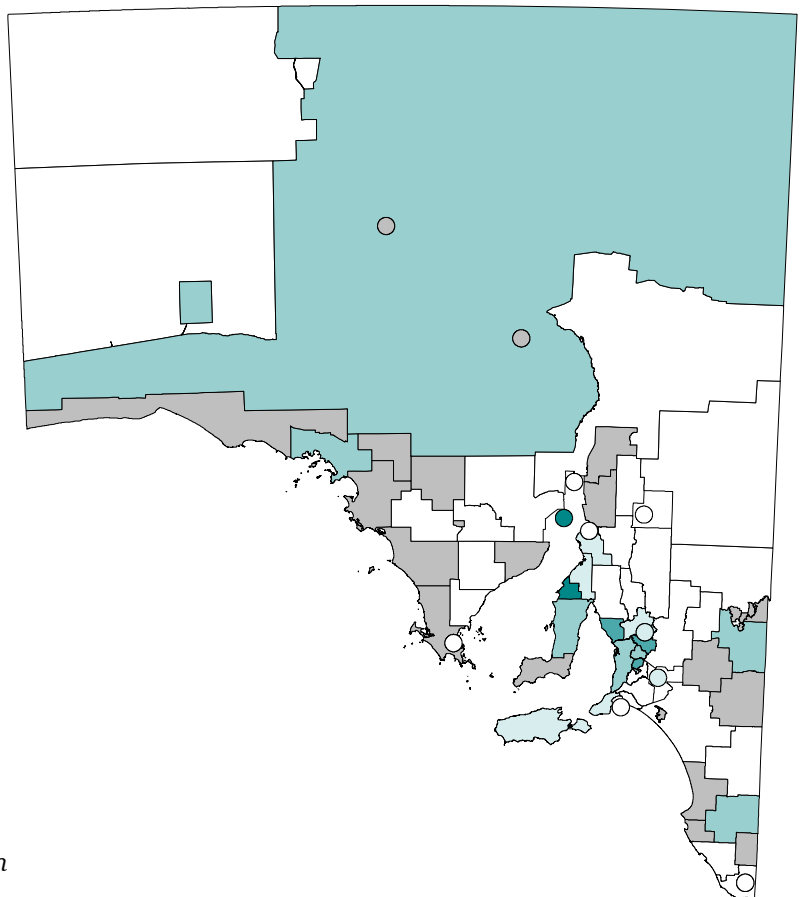
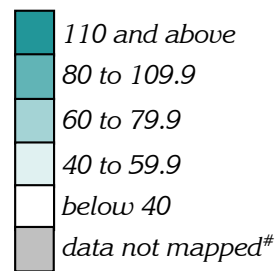
Country SA

Only in Copper Coast, Whyalla and Gawler were the number of 45 Year Old Health Checks above the level expected from the State rate (Map 4.17). All of the other SLAs had fewer of these services than expected, around half had at least 70% fewer, and a number had none.

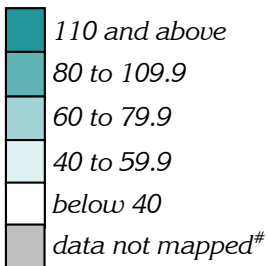
Map 4.16 and Map 4.17: 45 Year Old Health Check, persons, Metropolitan Adelaide and country SA, 2006/2007



Standardised ratio (as an index)*, by SLA



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Accident and Emergency Department attendances

Accident and Emergency Departments are provided in major public acute hospitals in Metropolitan Adelaide. They are open 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.

These data were not available for services in country South Australia on a basis consistent with that for Metropolitan Adelaide.

Rates of attendance at Accident and Emergency Departments were higher for males in all age groups, other than in the 15 to 24 and 25 to 34 year age groups, where female rates were higher (Figure 4.26). Attendances for both men and women decreased with age, before increasing in the 55 to 74 year age group, and even more sharply in the 75 years and over age group.

A clear socioeconomic gradient is apparent in rates of attendance at Accident and Emergency Departments, with attendances increasing for both men and women with increasing disadvantage (Figure 4.27). In the two highest socioeconomic status groups, male rates were slightly higher than for females, while in the lowest socioeconomic status groups, female rates were slightly above those for males.

Accident and Emergency Department attendances, Metropolitan Adelaide, 2005/06

Figure 4.26: Attendances by age and sex

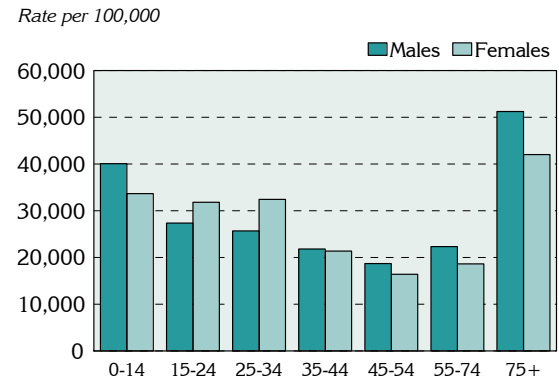
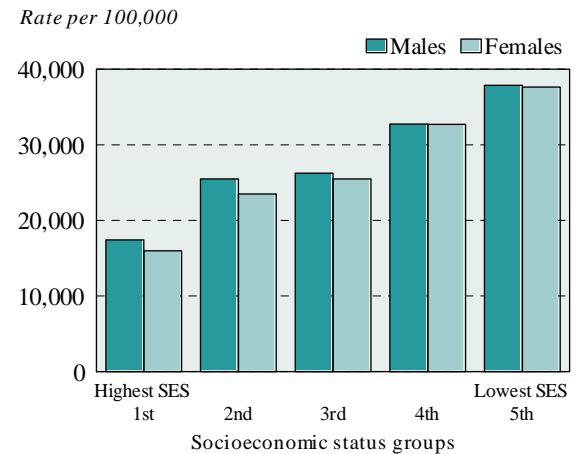


Figure 4.27: Attendances by socioeconomic status and sex

Rate ratio: Male 2.17; Female 2.36



Accident and Emergency Department attendances, males, 2005/06

Metropolitan Adelaide

Males in the Central Northern Adelaide Health Region had 6% fewer Accident & Emergency Department attendances than expected (a standardised ratio (SR) of 94**, 101,117 attendances). However, attendances of males living in the Southern Adelaide Health Region were 15% higher than expected (an SR of 115**, 2,386 attendances), with over one and a half times the expected number of attendances in the Outer Southern District (an SR of 177**, 28,505 attendances). Males in Central East sub-region had 39% fewer attendances at these services than were expected from the State rate.

Table 4.17: Accident and Emergency Department attendances of males, by Health Region, Metropolitan Adelaide, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	101,117	26,196.7	94**
Northern sub-region	51,414	30,147.8	108**
Western sub-region	27,631	26,313.4	94**
Central East sub-region	22,071	19,984.6	71**
Southern Adelaide	52,386	32,328.7	115**
Urban Beaches District	16,077	23,875.6	85**
Hills District	7,804	20,951.4	75**
Outer Southern District	28,505	49,612.3	177**
Metropolitan Adelaide (excl. Gawler)	153,503	28,009.8	100

¹ Rate is the number of attendances per 100,000 population

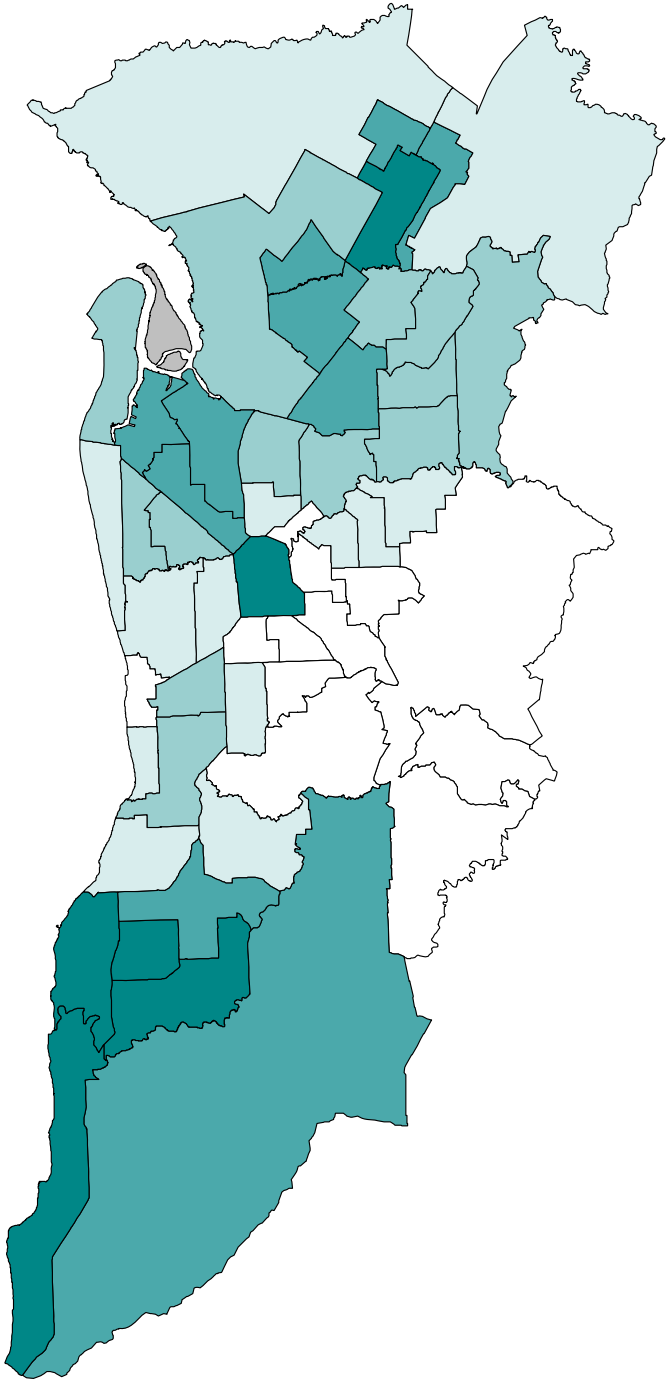
² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

Highly elevated attendance ratios were recorded in three areas: in the outer south in the Onkaparinga SLAs of - Hackham (242**, 4,683), - North Coast (239**, 5,929), - South Coast (175**, 6,204) and Morphett (167**, 5,486); in the outer north, in Playford - Elizabeth (145**, 5,252); and in the SLA of Adelaide (176**, 4,019) (Map 4.18). The high rate in the SLA of Adelaide is likely to reflect the greater use of these services by indigent men, in particular those living in boarding houses, hostels and other supported accommodation, as well as the homeless.

SLAs with lower than expected ratios included Adelaide Hills - Central and - Ranges; Burnside - South-West and North-East; Mitcham - North-East and - Hills; Unley - East and - West; Walkerville; Norwood Payneham St Peters - West; and Holdfast Bay - North.

Map 4.18: Accident and Emergency Department attendances of males, Metropolitan Adelaide, 2005/06



Standardised ratio (as an index)*, by SLA

- 130 and above
- 110 to 129
- 90 to 109
- 70 to 89
- below 70
- data not mapped#

* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Hospital admissions

Males had an overall admission rate that was 14% lower than that for females (a rate ratio of 0.86, Table 4.18). Of the selected causes shown in the table, the rate of admission for tonsillectomy was similarly lower in males (0.82): rates of admission for diseases of the musculoskeletal system and connective tissue and mental and behavioural disorders were in the same direction, although the differentials were smaller.

Of the conditions and causes reported in the table, males had markedly higher rates of admission for circulatory system diseases (a rate ratio of 1.27) and injury (1.22).

Note: These data exclude admissions of same day patients for renal dialysis, as these tend to be geographically concentrated in locations with ready access to the facilities providing these services.

Table 4.18: Hospital admissions by principal diagnosis/procedure, age and sex, South Australia, 2005/06

Admissions	Males		Females		RR M:F ¹
	No.	Rate ²	No.	Rate ²	
Total					
0 to 14 years	23,985	16,338.8	17,603	12,544.7	1.30
15 to 24 years	14,320	13,208.4	24,237	23,475.9	0.56
25 to 34 years	15,268	15,064.8	36,718	37,216.5	0.40
35 to 44 years	21,772	19,218.0	33,540	29,647.8	0.65
45 to 54 years	29,396	26,859.3	34,940	31,187.0	0.86
55 to 74 years	79,028	54,794.2	73,602	48,457.3	1.13
75+ years	51,888	110,269.8	60,060	85,183.0	1.29
All ages	235,657	30,581.8	280,700	35,541.4	0.86
Cancer					
0 to 14 years	502	342.0	496	337.9	1.01
15 to 24 years	338	311.8	594	547.9	0.57
25 to 34 years	419	413.4	992	978.8	0.42
35 to 44 years	964	850.9	1,922	1,696.5	0.50
45 to 54 years	2,371	2,166.4	3,374	3,082.8	0.70
55 to 74 years	10,837	7,513.8	7,935	5,501.7	1.37
75+ years	7,843	16,667.6	6,098	12,959.2	1.29
All ages	23,274	3,020.3	21,411	2,778.6	1.09
Mental & behavioural disorders					
0 to 14 years	103	70.2	148	100.8	0.70
15 to 24 years	1,308	1,206.5	1,255	1,157.6	1.04
25 to 34 years	1,740	1,716.8	1,490	1,470.2	1.17
35 to 44 years	1,795	1,584.4	1,768	1,560.6	1.02
45 to 54 years	1,273	1,163.1	1,449	1,324.0	0.88
55 to 74 years	1,275	884.0	1,672	1,159.3	0.76
75+ years	753	1,600.2	1,227	2,607.6	0.61
All ages	8,247	1,070.2	9,009	1,169.1	0.92
Circulatory system diseases					
0 to 14 years	125	85.2	99	67.4	1.26
15 to 24 years	221	203.8	210	193.7	1.05
25 to 34 years	453	447.0	386	380.9	1.17
35 to 44 years	1,239	1,093.7	892	787.4	1.39
45 to 54 years	2,609	2,383.9	1,491	1,362.3	1.75
55 to 74 years	8,955	6,209.0	5,474	3,795.4	1.64
75+ years	6,987	14,848.4	7,630	16,214.9	0.91
All ages	20,589	2,671.9	16,182	2,100.0	1.27

...cont'd

Table 4.18: Hospital admissions by principal diagnosis/procedure, age and sex, South Australia, 2005/06
...cont'd

Admissions	Males		Females		RR M:F ¹
	No.	Rate ²	No.	Rate ²	
Respiratory system diseases					
0 to 14 years	5,157	3,513.0	3,657	2,491.2	1.41
15 to 24 years	981	904.8	1,434	1,322.7	0.68
25 to 34 years	852	840.7	1,061	1,046.9	0.80
35 to 44 years	1,021	901.2	1,039	917.1	0.98
45 to 54 years	1,185	1,082.7	1,372	1,253.6	0.86
55 to 74 years	3,560	2,468.3	3,272	2,268.6	1.09
75+ years	3,749	7,967.2	3,714	7,892.8	1.01
All ages	16,505	2,141.9	15,549	2,017.8	1.06
Diseases of the musculoskeletal system and connective tissue					
0 to 14 years	313	213.2	261	177.8	1.20
15 to 24 years	1,198	1,105.0	801	738.8	1.50
25 to 34 years	1,867	1,842.1	1,088	1,073.5	1.72
35 to 44 years	2,630	2,321.5	2,019	1,782.2	1.30
45 to 54 years	3,369	3,078.3	3,295	3,010.7	1.02
55 to 74 years	6,324	4,384.8	7,549	5,234.1	0.84
75+ years	2,305	4,898.5	4,002	8,504.9	0.58
All ages	18,006	2,336.7	19,015	2,467.6	0.95
Injury, poisoning and certain other consequences of external causes					
0 to 14 years	2,649	1,804.5	1,534	1,045.0	1.73
15 to 24 years	3,762	3,470.0	1,701	1,569.0	2.21
25 to 34 years	2,862	2,823.9	1,413	1,394.2	2.03
35 to 44 years	2,485	2,193.5	1,589	1,402.6	1.56
45 to 54 years	2,082	1,902.3	1,686	1,540.5	1.23
55 to 74 years	3,165	2,194.5	3,122	2,164.6	1.01
75+ years	2,444	5,193.9	4,881	10,372.9	0.50
All ages	19,449	2,523.9	15,926	2,066.8	1.22
Tonsillectomy					
0 to 14 years	971	661.5	906	617.2	1.07
15 to 24 years	224	206.6	597	550.7	0.38
25 to 34 years	109	107.5	188	185.5	0.58
35 to 44 years	88	77.7	56	49.4	1.57
45 to 54 years	54	49.3	30	27.4	1.80
55 to 74 years	23	15.9	22	15.3	1.04
75+ years	0	0.0	2	4.3	0.00
All ages	1,469	190.6	1,801	233.7	0.82

¹ RR M:F is the ratio of the rate for males to that for females

² Rate is the number of admissions per 100,000 population

Hospital admissions – Total admissions

As noted above, overall admission rates for males were 14% lower than for females: male rates were also lower across the age groups from 15 to 54 years (Figure 4.28). At younger (0 to 14 years) and older (55 to 74, and 75 years and over) ages, however, the reverse was the case. The higher rates in the 75 year and over age group largely reflect admissions for cancer, circulatory system diseases and respiratory system diseases (see previous table).

There is a gradient in admission rates for both males and females when viewed by socioeconomic status, with the lowest rates in higher SES areas (although not the highest – first quintile – areas) and the highest rates in the lowest SES areas: the differential in rates was greater for females (15%, a rate ratio of 1.15) than for males (7%, 1.07) (Figure 4.29).

Admission rates for males were below those for females in all remoteness classes, and the differential in rates between the Very Remote and Major Cities areas was also lower (6% for males, and 13% for females) (Figure 4.30). The highest rates for males were in the Outer Regional remoteness class.

Hospital admissions, South Australia, 2005/06

Figure 4.28: Total admissions by age and sex

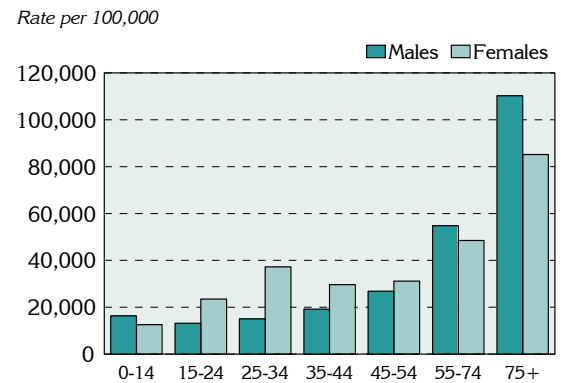


Figure 4.29: Total admissions: by socioeconomic status and sex

Rate ratio: Male 1.07; Female 1.15

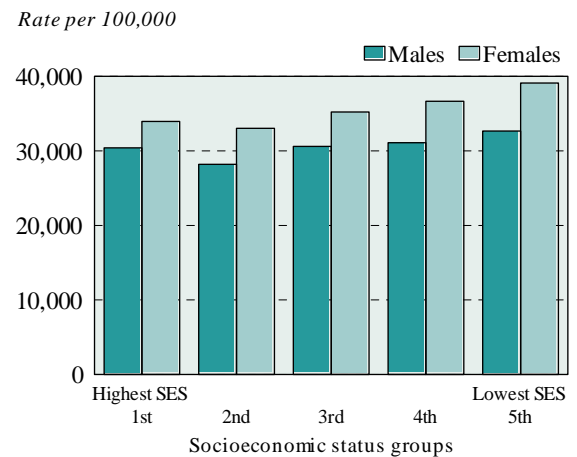
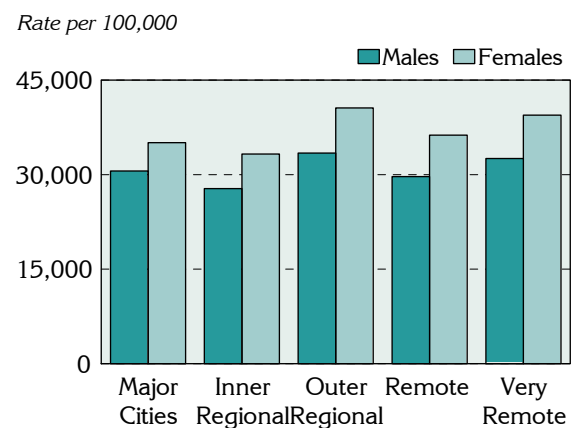


Figure 4.30: Total admissions: by remoteness and sex

Rate ratio: Male 1.06; Female 1.13



Hospital admissions – Total admissions of males, 2005/06

The number of admissions of males living in Central Northern Adelaide Health Region was 2% below the level expected from the State rate (a standardised ratio (SR) of 98**, 113,487 admissions). However, there were 6% more admissions than expected of males from Southern Adelaide Health Region (an SR of 106**, 52,846 admissions). In country SA, admissions of males from Hills Mallee Southern were below the level expected; the SR in Eyre was at the level expected (and close to it in South East, Wakefield and Riverland); and Mid North and Northern & Far Western had elevated ratios.

Table 4.19: Hospital admissions – Total male admissions by Health Region, South Australia, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	113,487	29,832.5	98**
Northern sub-region	48,132	30,890.6	101*
Western sub-region	33,245	30,125.1	99**
Central East sub-region	32,110	28,106.8	92**
Southern Adelaide	52,846	32,505.0	106**
Urban Beaches District	23,908	33,559.7	110**
Hills District	11,672	30,930.9	101
Outer Southern District	17,266	32,211.4	105**
Metropolitan Adelaide (excl. Gawler)	166,333	30,632.7	100
Hills Mallee Southern	17,918	27,671.7	90
South East	9,477	30,095.5	98
Wakefield	16,593	30,188.3	99
Mid North	5,978	34,421.6	113**
Riverland	5,503	31,801.0	104**
Eyre	5,430	30,445.7	100
Northern & Far Western	8,425	35,288.6	115**
Country South Australia (incl. Gawler)	69,324	30,460.3	100

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The most highly elevated ratio of admissions of males was in Playford - Hills (an SR of 137**, 638 admissions), 37% above the number expected from the State rate (Map 4.19). Elevated ratios were also recorded in the SLAs of Adelaide Hills - Ranges (an SR of 129**, 1,992 admissions), Salisbury Balance (123**, 1,510), Marion - North (113**, 5,079), Holdfast Bay - South (121**, 3,029), Playford - Elizabeth (121**, 4,607) and Adelaide (118**, 2,874).

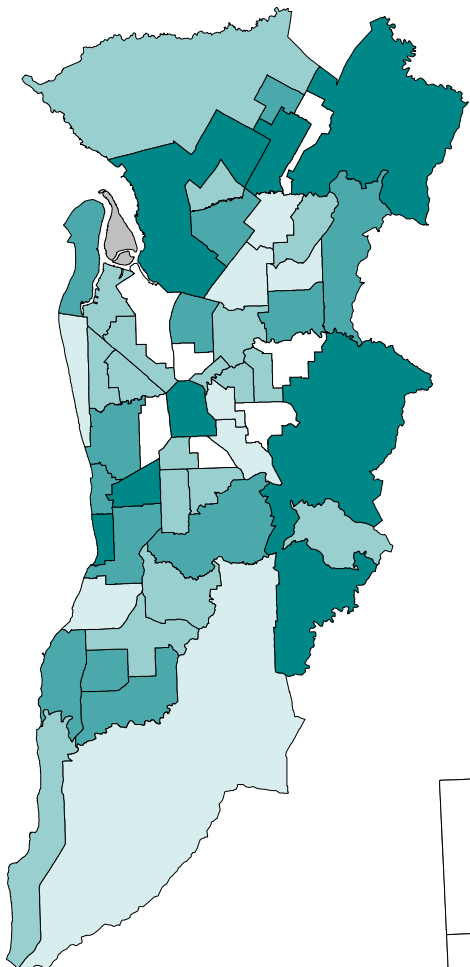
Ratios were lowest for men in Burnside - North-East, Playford - East Central, Prospect, Unley - East, Port Adelaide Enfield - Park, West Torrens - East and Campbelltown - East.

Country SA

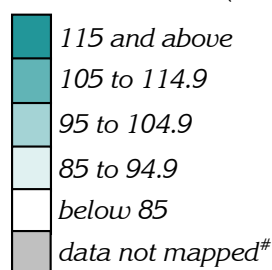
Unincorporated West Coast had more than two and half times the expected number of admissions of males (an SR of 280**, 184 admissions), and Unincorporated Riverland also had more than twice the expected number (203**, 40) (Map 4.20). Other SLAs with elevated ratios included Tatiara (an SR of 142**, 1,547 admissions), Southern Mallee (140**, 526), Port Augusta (139**, 2,877), Port Pirie Districts Balance (128**, 766), Peterborough (128**, 470), Orroroo/Carrieton (127**, 227), The Coorong (126**, 1,194), Unincorporated Far North (124**, 350), Ceduna (124**, 689) and Elliston (123**, 227).

SLAs with the lowest number of male admissions (when compared with the State rate) included Karoonda East Murray, Yankalilla, Franklin Harbour, Roxby Downs, Streaky Bay, Grant, Mount Barker Balance, Unincorporated Pirie and Anangu Pitjantjatjara.

Map 4.19 and Map 4.20: Hospital admissions – Total admissions of males, Metropolitan Adelaide and country SA, 2005/06

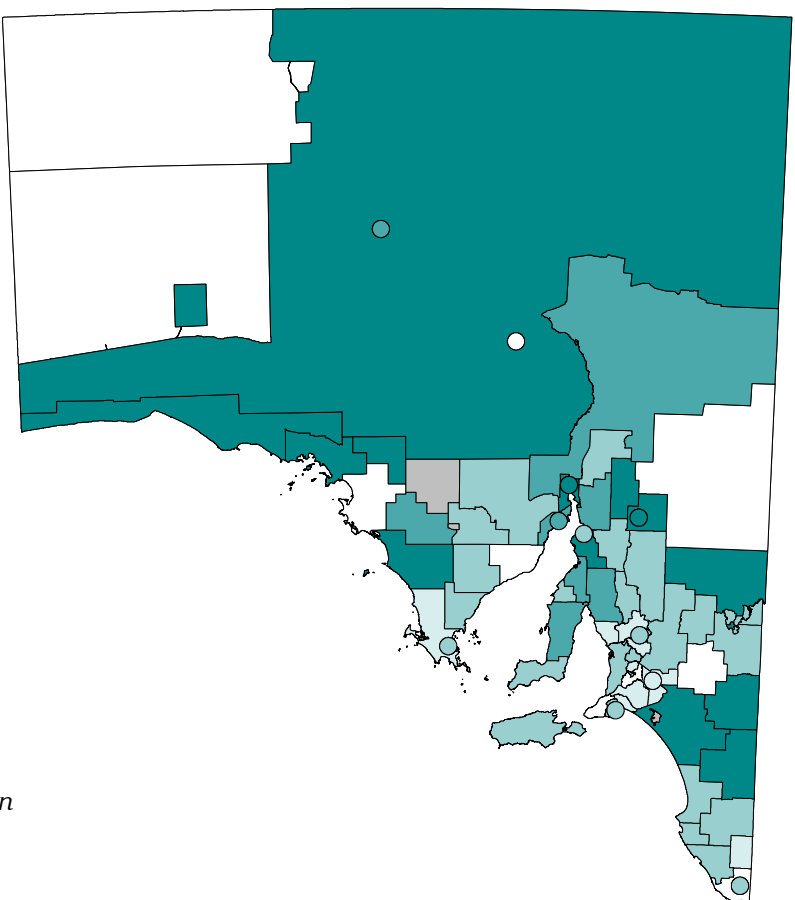


Standardised ratio (as an index)*, by SLA

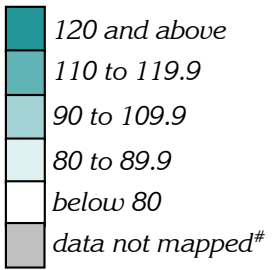


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Hospital admissions – Admissions for cancer

Rates of admission to hospital for cancer are very low in the younger age groups, and gradually increase with age (Figure 4.31). In the 15 to 24 through to the 45 to 54 year age groups, male rates were lower than those for females. However, in the two oldest age groups shown, male rates were above those for females.

When analysed by socioeconomic status, admissions from cancer for both males and females generally decreased with increasing disadvantage: this was the opposite of the pattern seen for total admissions (Figure 4.32). Admission rates for males were 22% lower in the lowest SES group than in the highest SES group; similarly, rates for females were 21% lower. Male rates of admission were higher than those for females in each SES group.

Admission rates for cancer declined with remoteness, with rates in the Very Remotes areas being 32% below those in the Major City areas for males (Figure 4.33). For females, the gap was larger (49%). Male rates were higher than those for females in each remoteness class.

Hospital admissions for cancer, South Australia, 2005/06

Figure 4.31: Admissions by age and sex

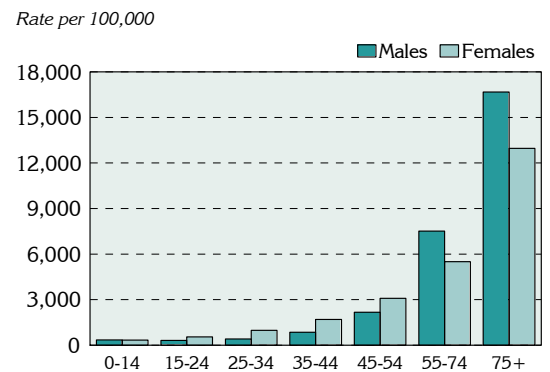


Figure 4.32: Admissions: by socioeconomic status and sex

Rate ratio: Male 0.78; Female 0.79

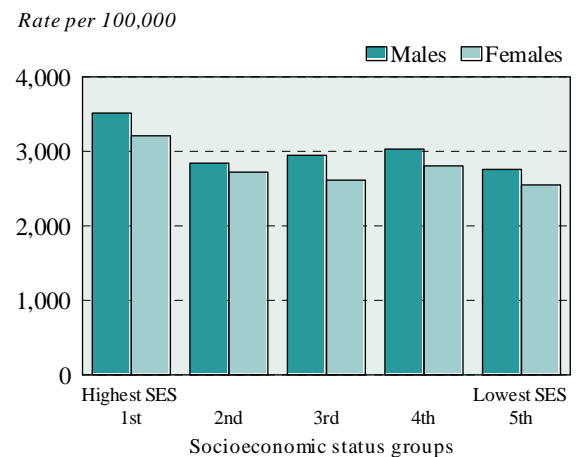
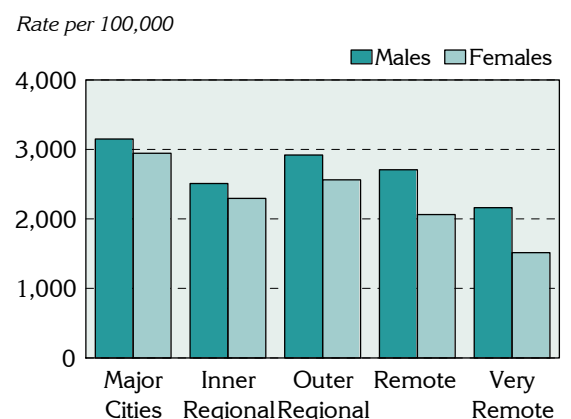


Figure 4.33: Admissions: by remoteness and sex

Rate ratio: Male 0.68; Female 0.51



Hospital admissions – Admissions of males for cancer, 2005/06

There were 19% more admissions of males from cancer in Southern Adelaide Health Region than expected from the State rate (a standardised ratio (SR) of 119**, 5,848 admissions): this compared with 1% fewer admissions in Central Northern Adelaide Health Region (an SR of 99, 11,235 admissions). Within Southern Adelaide, both Urban Beaches District and Hills District had highly elevated ratios.

Rates of admission of males in country SA health regions were all below the State average.

Table 4.20: Hospital admissions – Male admissions for cancer, by Health Region, South Australia, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	11,235	2,991.3	99
Northern sub-region	4,140	2,858.4	95**
Western sub-region	3,556	3,091.6	102
Central East sub-region	3,539	3,057.9	101
Southern Adelaide	5,848	3,586.4	119**
Urban Beaches District	2,881	3,861.3	128**
Hills District	1,383	3,671.8	122**
Outer Southern District	1,584	3,119.3	103
Metropolitan Adelaide (excl. Gawler)	17,083	3,171.4	105**
Hills Mallee Southern	1,686	2,472.6	82**
South East	888	2,911.8	96
Wakefield	1,516	2,647.4	88**
Mid North	503	2,696.4	89*
Riverland	480	2,735.7	91*
Eyre	506	2,853.1	94
Northern & Far Western	612	2,776.3	92*
Country South Australia (incl. Gawler)	6,191	2,669.4	88**

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The most highly elevated standardised admission ratios for cancer of males living in Metropolitan Adelaide (Map 4.21) were found in Holdfast Bay - North (an SR of 158**, 560 admissions) and - South (134**, 372); Mitcham - Hills (145**, 572); Tea Tree Gully - Hills (140**, 242); Adelaide Hills - Ranges (134**, 196) and - Central (131**, 233); and Marion - North (130**, 567).

Onkaparinga - Reservoir (with an SR of 124**, 380 admissions), Burnside - South-West (124**, 451) Marion - Central (124**, 735) and Charles Sturt - Inner East (124**, 450) each had 24% more admissions than expected. Males in the SLAs of Adelaide (122**, 267), Unley - West (122**, 290), Port Adelaide Enfield - Coast (120**, 519), West Torrens - West (118**, 638) and Tea Tree Gully - South (116**, 600) had similarly elevated numbers of admissions.

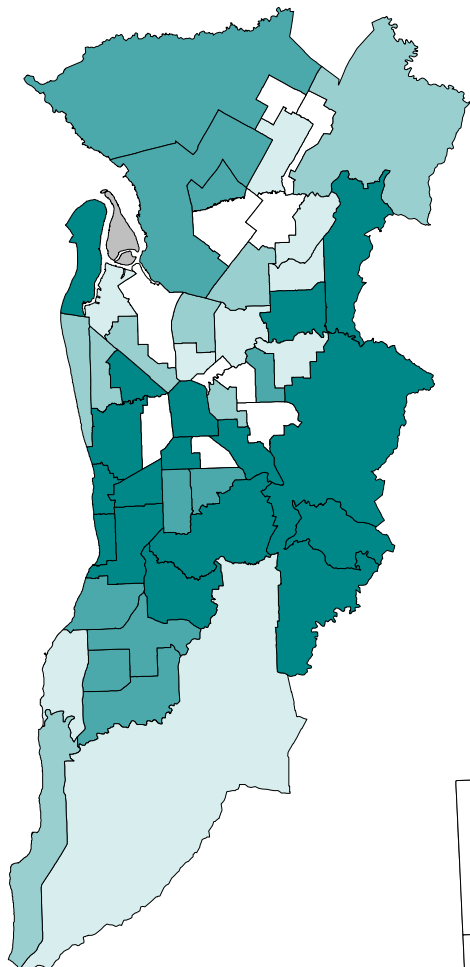
Fewer males were admitted than expected from the SLAs of Port Adelaide Enfield - Park; Salisbury - North-East; Playford - East Central and - West Central; West Torrens - East; Burnside - North-East; Unley - East; Norwood Payneham St Peters - East; Salisbury - Central; and Walkerville.

Country SA

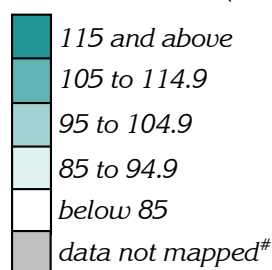
The most highly elevated ratio for males in country SA was recorded for Renmark Paringa - Paringa, with 66% more admissions than expected (an SR of 166**, 48 admissions) (Map 4.22). Other SLAs with elevated ratios included Unincorporated West Coast (151, 7) Kimba (146*, 30), Kingston (137*, 59), Tatiara (128**, 132), Robe (127, 34), Franklin Harbour (123, 30), Yorke Peninsula - North (123**, 215), Copper Coast (119**, 296), Port Augusta (118*, 224), Unincorporated Flinders Ranges (116, 16) and Southern Mallee (116, 44).

SLAs with the lowest male admission ratios for cancer were Coober Pedy, Flinders Ranges, Unincorporated Far North, Orroroo/Carrieton, Northern Areas, Adelaide Hills - North, Mount Barker Balance, Barossa - Barossa, Light, Mallala, Goyder, Clare and Gilbert Valleys, Berri & Barmera - Berri, Murray Bridge, Unincorporated Riverland, Grant, Cleve and Lower Eyre Peninsula.

Map 4.21 and Map 4.22: Hospital admissions – Admissions of males for cancer, Metropolitan Adelaide and country SA, 2005/06



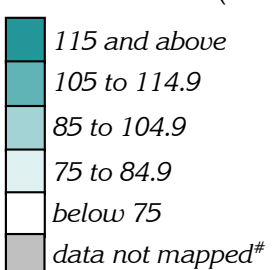
Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

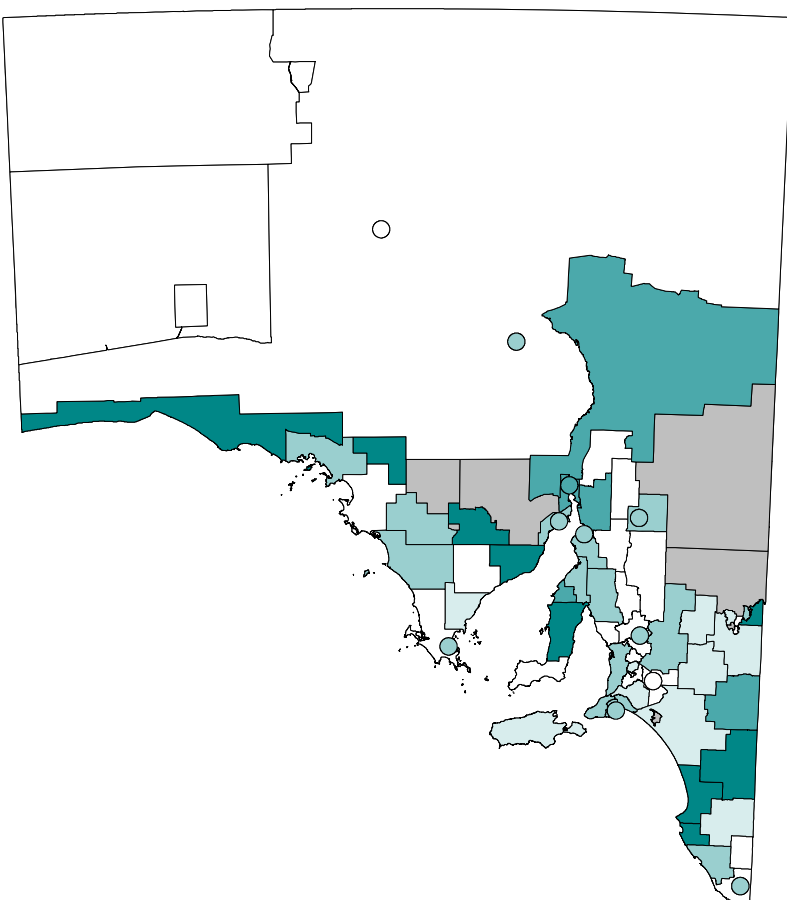
Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Hospital admissions – Admissions for mental and behavioural disorders

The rates of admission for mental and behavioural disorders increased markedly between the 15 to 24 and 25 to 34 year age groups (with a greater increase for males than for females), then declined over the next three age groups (Figure 4.34). Rates then increased substantially in the 75 years and over age group, with a larger increase evident for women.

For both males and females, rates of admission for mental and behavioural disorders increased with increasing socioeconomic disadvantage, although not continuously, as rates were lower in the second SES group (Figure 4.35). Overall, the rate of admission of males was 66% higher in the lowest SES areas, compared with the highest SES areas (a rate ratio of 1.66). Female rates were 41% higher in the lowest SES areas. Males had lower rates of admission, other than in the lowest SES areas.

Admissions for mental and behavioural disorders of males living in the Very Remote areas were almost twice the rates in the Major Cities areas (a rate ratio of 1.95) (Figure 4.36). Admissions of females were similarly higher in the Very Remote areas (1.77). With the exception of the Very Remote areas, where rates were consistent, males had lower rates of admission than females.

Hospital admissions for mental and behavioural disorders, South Australia, 2005/06

Figure 4.34: Admissions by age and sex

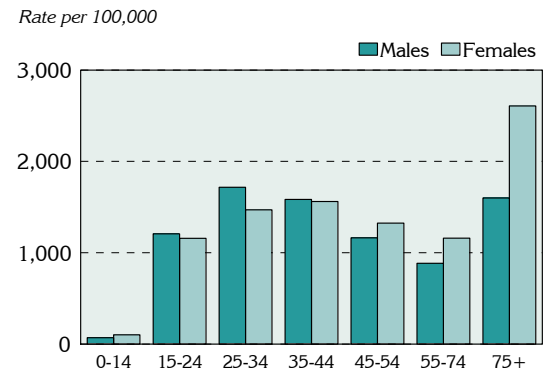


Figure 4.35: Admissions: by socioeconomic status and sex

Rate ratio: Male 1.66; Female 1.41

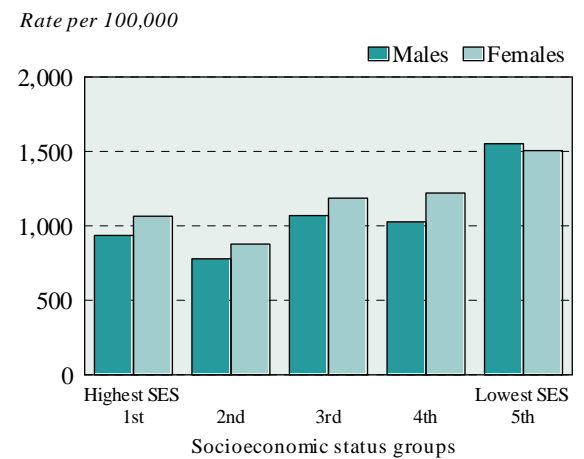
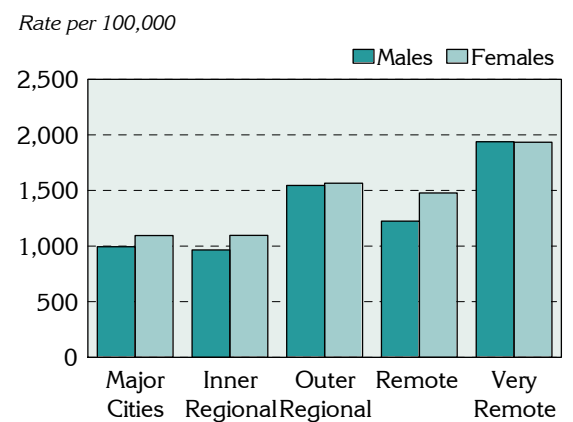


Figure 4.36: Admissions: by remoteness and sex

Rate ratio: Male 1.95; Female 1.77



Hospital admissions – Admissions of males for mental and behavioural disorders, 2005/06

Both Central Northern Adelaide and Southern Adelaide Health Regions (with standardised ratios (SRs) of 94** and 89**, respectively) had fewer admissions of males for mental and behavioural disorders than expected. At the sub-region/district level, the lowest ratios were recorded for males in Hills District (68**) and the Northern sub-region (87**).

In country SA, the Northern & Far Western and Mid North Health Regions had close to twice the expected number of admissions. Riverland and Eyre also had higher than expected ratios.

Table 4.21: Hospital admissions – Male admissions for mental and behavioural disorders, by Health Region, South Australia, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	3,971	1,007.8	94**
Northern sub-region	1,570	934.7	87**
Western sub-region	1,226	1,127.9	105
Central East sub-region	1,175	1,001.2	94*
Southern Adelaide	1,551	954.7	89**
Urban Beaches District	677	977.6	91*
Hills District	271	728.9	68**
Outer Southern District	603	1,076.1	101
Metropolitan Adelaide (excl. Gawler)	5,522	992.3	93**
Hills Mallee Southern	582	996.9	93
South East	314	989.0	92
Wakefield	512	1,023.6	96
Mid North	294	1,964.3	184**
Riverland	276	1,693.1	158**
Eyre	220	1,279.0	120**
Northern & Far Western	527	2,068.5	193**
Country South Australia (incl. Gawler)	2,725	1,272.8	119**

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The most highly elevated number of admissions of males for mental and behavioural disorders was in the SLA of Adelaide (an SR of 275**, 332 admissions), where there were nearly three times the expected numbers of male admissions for mental and behavioural disorders (Map 4.23). Elevated ratios were also recorded in Onkaparinga - North Coast (an SR of 172**, 162 admissions); Playford - Elizabeth (172**, 220); Port Adelaide Enfield - Port (167**, 100) and - Coast (140**, 208); Charles Sturt - North-East (142**, 205); and Marion - North (141**, 195).

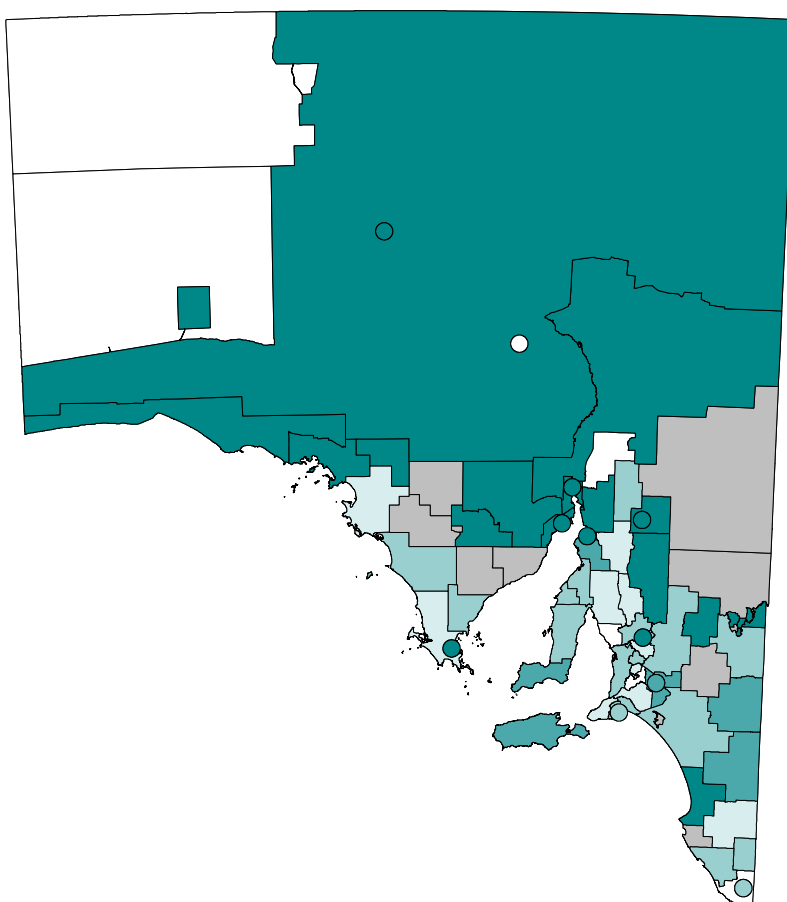
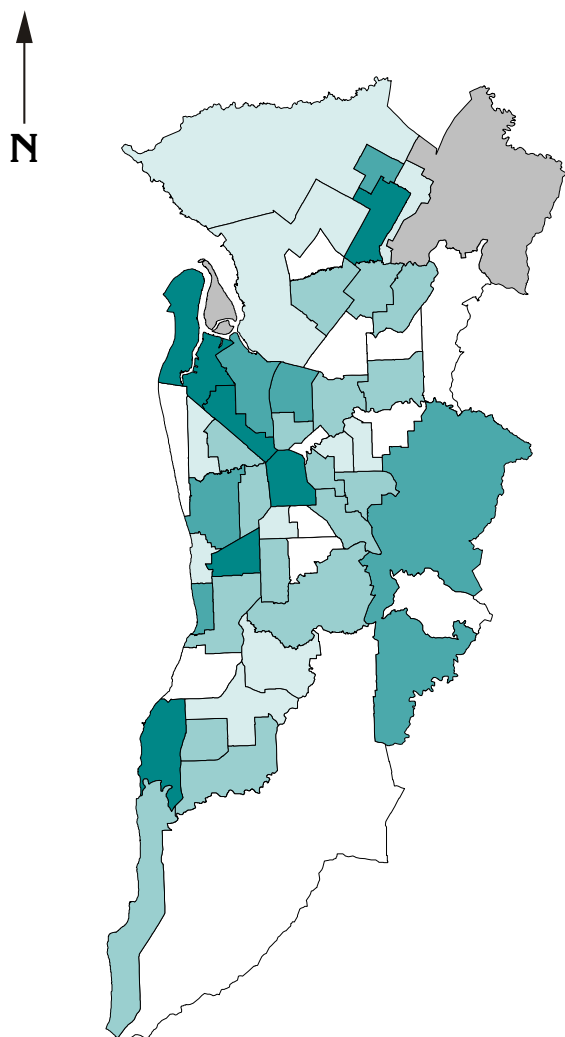
SLAs with low ratios were Walkerville; Tea Tree Gully - Central and - Hills; Salisbury - Inner North and - South-East; Marion - South; Campbelltown - East and - West; Onkaparinga - Hills; Charles Sturt - Coastal; Unley - East; Adelaide Hills - Central; and Mitcham - North East.

Country SA

Towns in country SA with elevated admission ratios for males included Peterborough (an SR of 444**, 45 admissions), Coober Pedy (268**, 32), Port Pirie Districts - City (217**, 152), Port Augusta (214**, 163), Whyalla (206**, 241) and Port Lincoln (163**, 121) (Map 4.24). Other SLAs with significantly elevated ratios were Unincorporated Whyalla, Unincorporated Far North; Unincorporated West Coast; Goyder; Loxton Waikerie - West; Mount Remarkable; Unincorporated Flinders Ranges; Renmark Paringa - Renmark and - Paringa; Berri & Barmera - Berri and - Barmera; and Barossa - Tanunda.

SLAs with fewer admissions than expected included Mallala, Roxby Downs, Cleve, Robe, Le Hunte, Grant, Flinders Ranges and Mount Barker Balance.

Map 4.23 and Map 4.24: Hospital admissions of males for mental and behavioural disorders, Metropolitan Adelaide and country SA, 2005/06



Hospital admissions – Admissions for circulatory system diseases

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 (49).

Admission to hospital for one of these conditions may be the result of the acute onset of a stroke for example, or to manage a chronic condition such as worsening heart failure more intensively.

Admission rates of males for circulatory system diseases more than doubled in each subsequent age group shown: the increases for females were even greater between the age groups (Figure 4.37). Rates for males were higher than for females, other than in the oldest age group.

When examined by socioeconomic status, rates of admission of males for circulatory system diseases were 39% higher for those living in the lowest SES areas than in the highest SES areas: for females, the differential was 36%. Male rates were much higher than those for females in each SES group (Figure 4.38).

Admission rates for males for circulatory system diseases also increased with increasing remoteness, with rates in the Very Remote areas 40% above the rate of those in the Major Cities areas: for females, rates decreased with increasing remoteness, with a differential of 21% (Figure 4.39).

Hospital admissions for circulatory system diseases, South Australia, 2005/06

Figure 4.37: Admissions by age and sex

Rate per 100,000

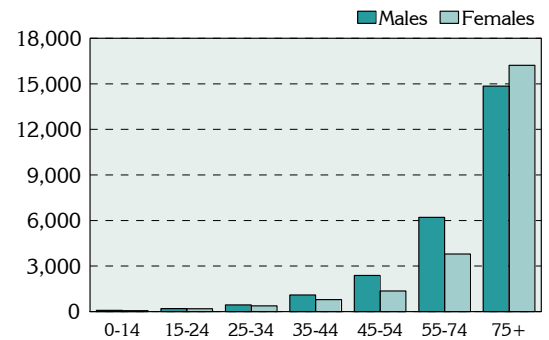


Figure 4.38: Admissions: by socioeconomic status and sex

Rate ratio: Male 1.39; Female 1.36

Rate per 100,000

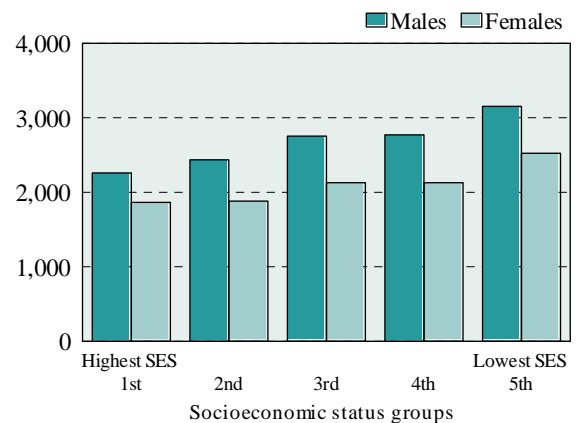
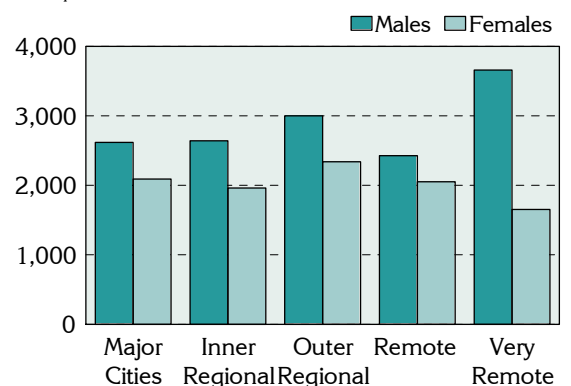


Figure 4.39: Admissions: by remoteness and sex

Rate ratio: Male 1.40; Female 0.79

Rate per 100,000



Hospital admissions – Admissions of males for circulatory system diseases, 2005/06

There were 4% fewer admissions of males for circulatory system diseases in Central Northern Adelaide Health Region than expected from the State rate (a standardised ratio (SR) of 96**, 9,662 admissions); and in Southern Adelaide Health Region, the ratio was just above the level expected (an SR of 101, 4,434 admissions). At the sub-region/district level, there were notably fewer male admissions from Central East sub-region (83**) and Hills District (86**); and more from Outer Southern District (112**).

Across country SA, all health regions had ratios above the expected level, with the exception of Hills Mallee Southern (96, 1,734) and Eyre (98, 462). The most highly elevated ratio was in Northern & Far Western, an SR of 126**.

Table 4.22: Hospital admissions – Male admissions for circulatory system diseases, by Health Region, South Australia, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	9,662	2,568.1	96**
Northern sub-region	4,143	2,868.0	107**
Western sub-region	2,953	2,559.7	96*
Central East sub-region	2,566	2,204.3	83**
Southern Adelaide	4,434	2,711.1	101
Urban Beaches District	2,043	2,723.7	102
Hills District	865	2,292.2	86**
Outer Southern District	1,526	3,003.8	112**
Metropolitan Adelaide (excl. Gawler)	14,096	2,611.4	98*
Hills Mallee Southern	1,734	2,564.1	96
South East	920	3,012.2	113**
Wakefield	1,565	2,749.8	103
Mid North	563	3,040.6	114**
Riverland	507	2,896.0	108
Eyre	462	2,613.1	98
Northern & Far Western	742	3,370.6	126**
Country South Australia (incl. Gawler)	6,493	2,813.3	105**

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The most highly elevated ratios of male admissions for circulatory system diseases were in the northern SLAs of Salisbury Balance (an SR of 158**, 125 admissions), - Central (137**, 416) and - Inner North (123**, 250); and Playford - Elizabeth (148**, 492) and - West Central (144**, 182) (Map 4.25). Other SLAs with elevated ratios included Onkaparinga - Hackham (an SR of 138**, 192 admissions), Adelaide Hills - Ranges (128**, 167) and Marion - North (116**, 454).

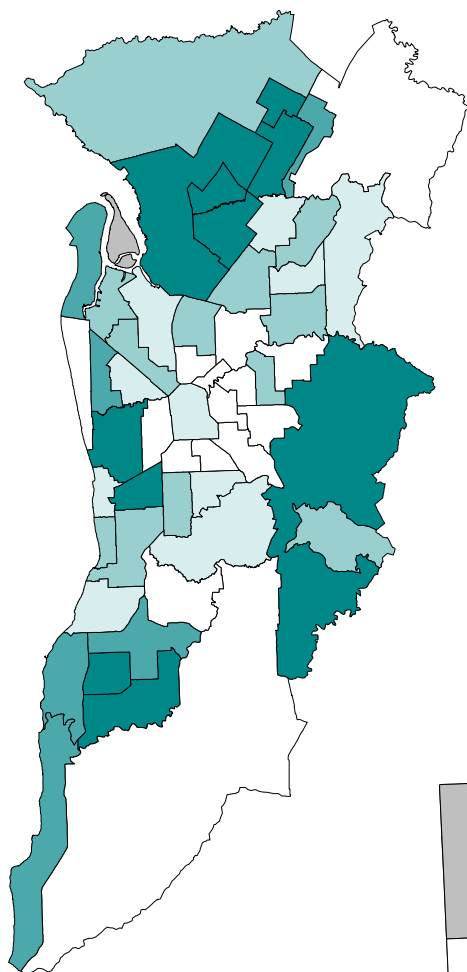
The lowest ratios of were found in SLAs across the inner and eastern suburbs, including Walkerville; Burnside - North-East and - South-West; Unley - East and - West; Norwood Payneham St Peters - East and - West; and Campbelltown - East. Onkaparinga - Hills and - Reservoir; Charles Sturt - Coastal; Playford - Hills; Prospect; West Torrens - East; and Port Adelaide Enfield - East also had lower than expected ratios.

Country SA

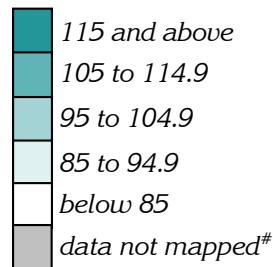
There were 6,493 male admissions in country South Australia for circulatory system diseases, with the most highly elevated ratio recorded for Unincorporated West Coast (an SR of 446**, 19 admissions) (Map 4.26). Other SLAs with elevated ratios included Ceduna (199**, 91), Orroroo/Carrieton (185**, 33), Port Augusta (174**, 292), Port Pirie Districts Balance (170**, 92), Southern Mallee (170**, 57), Robe (162**, 38) Coober Pedy (152**, 57) and Unincorporated Far North (149**, 34).

The lowest ratios were recorded for Kimba, Roxby Downs, Karoonda East Murray, Mount Barker Balance, Tumby Bay, Yankalilla, Renmark Paringa - Paringa, Streaky Bay and Franklin Harbour.

Map 4.25 and Map 4.26: Hospital admissions of males for circulatory system diseases, Metropolitan Adelaide and country SA, 2005/06

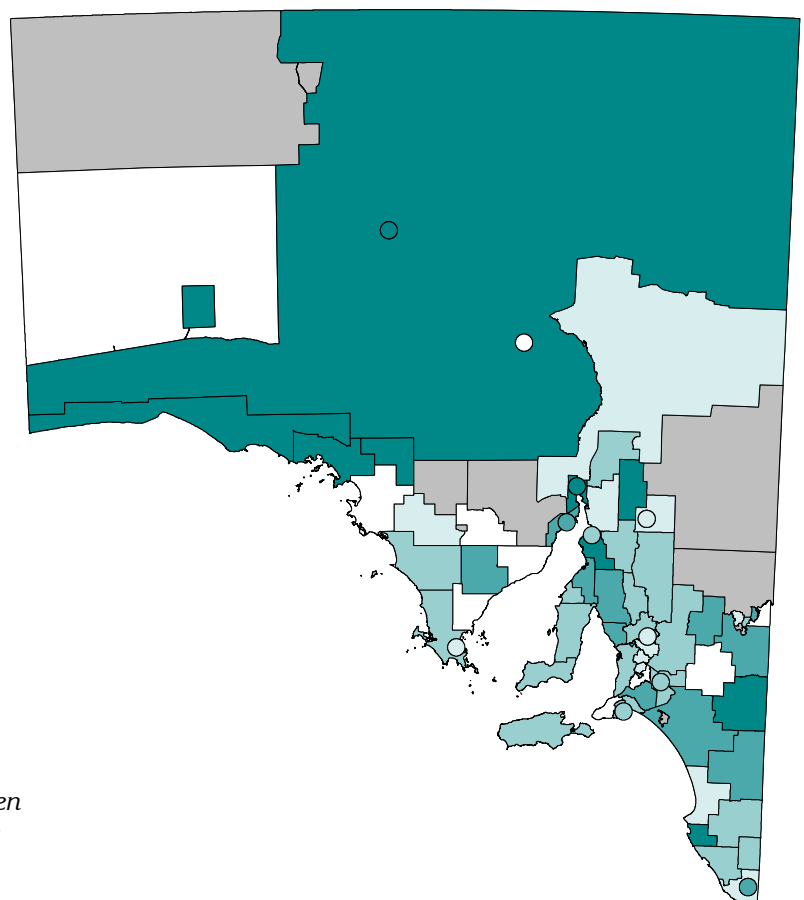


Standardised ratio (as an index)*, by SLA

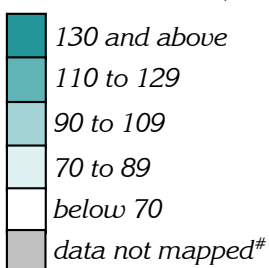


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

[#] Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

[#] Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Hospital admissions – Admissions for respiratory system diseases

Respiratory system diseases include conditions such as influenza, pneumonia, asthma, chronic bronchitis and emphysema.

Respiratory system diseases represent a significant burden of ill-health and hospitalisation among Aboriginal people, particularly among very young and older people (50). The development of these diseases is dependent on a number of contributing factors, including poor environmental conditions, socioeconomic disadvantage, risky behaviour (particularly cigarette smoking), and existing medical conditions such as diabetes mellitus and chronic renal disease (51).

Admission rates for respiratory system diseases were highest in the youngest and oldest age groups for both males and females (Figure 4.40). Male rates were higher than those for females in the 0 to 14 and 55 to 74 year age groups; lower in 15 to 24, 25 to 34 and 45 to 54 year age groups; and similar in the 35 to 44 and 75 year and over age groups.

Male admission rates were higher than those for females in all socioeconomic status groups (Figure 4.41). The rate of male admissions in the lowest SES group was 48% higher than the rate in the highest SES group: for females, the differential was 39%.

When analysed by remoteness, admission rates were higher for males than for females in the Major Cities and Very Remote areas (Figure 4.42). The Very Remote areas also had rates almost one and a half times those in Major Cities for both males and females.

Hospital admissions for respiratory system diseases, South Australia, 2005/06

Figure 4.40: Admissions by age and sex

Rate per 100,000

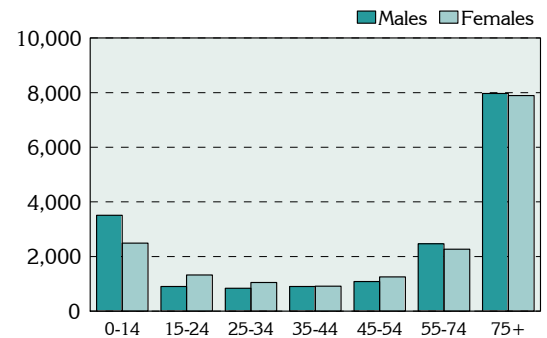


Figure 4.41: Admissions: by socioeconomic status and sex

Rate ratio: Male 1.48; Female 1.39

Rate per 100,000

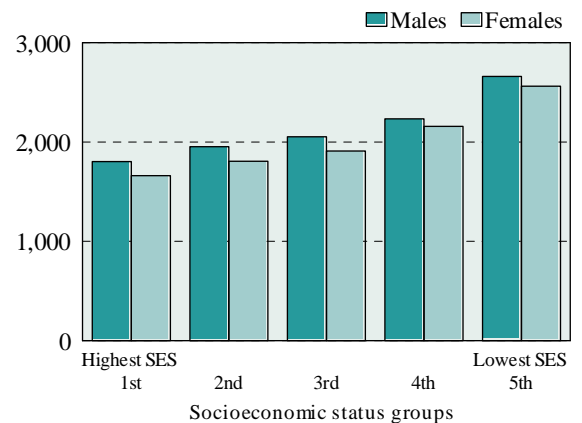
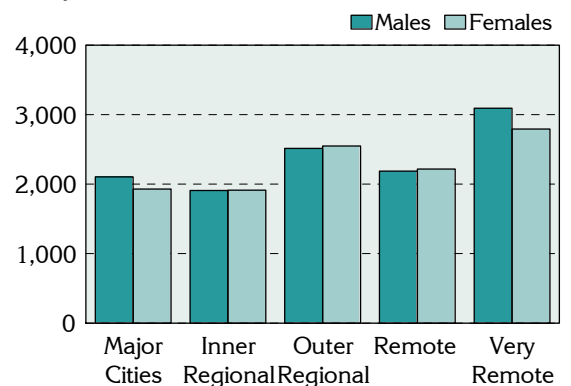


Figure 4.42: Admissions: by remoteness and sex

Rate ratio: Male 1.47; Female 1.45

Rate per 100,000



Hospital admissions – Admissions of males for respiratory system diseases, 2005/06

In both Central Northern Adelaide (a standardised ratio (SR) of 98, 8,019 admissions) and Southern Adelaide (98, 3,397) Health Regions, the number of admissions of males for respiratory system diseases was consistent with the level expected from the State rate. At the sub-region/district level, the lowest ratios were recorded for males in the Central East sub-region (an SR of 78**) and Hills District (81**).

In country South Australia, South East and Hills Mallee Southern had lower than expected ratios, while Mid North, Northern & Far Western and Eyre had ratios that were higher than expected.

Table 4.23: Hospital admissions – Male admissions for respiratory system diseases, by Health Region, South Australia, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	8,019	2,104.0	98
Northern sub-region	4,003	2,480.0	116**
Western sub-region	2,152	1,982.6	93**
Central East sub-region	1,864	1,676.5	78**
Southern Adelaide	3,397	2,096.1	98
Urban Beaches District	1,500	2,138.3	100
Hills District	641	1,737.3	81**
Outer Southern District	1,256	2,282.8	107*
Metropolitan Adelaide (excl. Gawler)	11,416	2,101.6	98*
Hills Mallee Southern	1,257	1,988.1	93**
South East	610	1,891.8	88**
Wakefield	1,178	2,165.8	101
Mid North	533	3,100.5	145**
Riverland	377	2,151.1	100
Eyre	432	2,376.7	111*
Northern & Far Western	702	2,851.1	133**
Country South Australia (incl. Gawler)	5,089	2,238.1	104**

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The SLAs with the most highly elevated ratios of male admissions for respiratory system diseases were Salisbury Balance (an SR of 150**, 147 admissions) and - Inner North (133**, 310); Playford - Elizabeth (144**, 408) and - West Central (137**, 187); Tea Tree Gully - Hills (134**, 160) and - South (127**, 441); Marion - North (125**, 366); Onkaparinga - Hackham (123**, 164); and Port Adelaide Enfield - East (120**, 402) (Map 4.27).

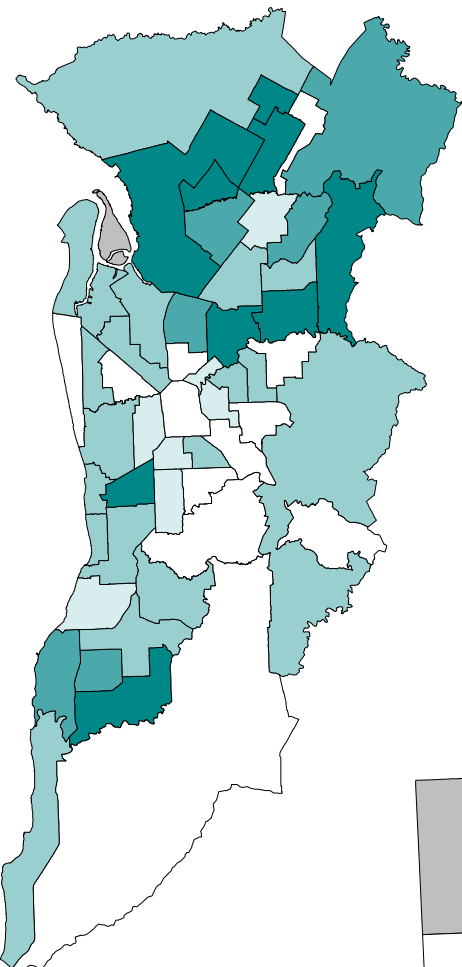
Lower than expected ratios were recorded for the SLAs of Burnside - South-West and - North-East; Campbelltown - East; Prospect; Adelaide Hills - Central; Playford - East Central; Mitcham - North-East and - Hills; Onkaparinga - Hills; Charles Sturt - Coastal and - Inner East; and Adelaide.

Country SA

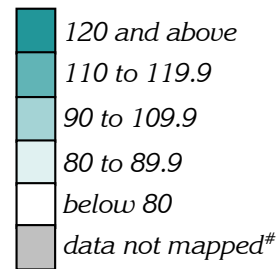
There were six times the numbers of male admissions for respiratory system diseases in Unincorporated West Coast than expected (an SR of 605**, 29 admissions) (Map 4.28). Highly elevated ratios were also recorded in Coober Pedy (an SR of 221**, 54 admissions), Mount Remarkable (213**, 76), Tatiara (193**, 150), Orroroo/Carrieton (181**, 22), Ceduna (180**, 75), The Coorong (180**, 117), Southern Mallee (178**, 47), Flinders Ranges (176**, 39), Port Augusta (168**, 250), Unincorporated Flinders Ranges (167**, 20), Port Pirie Districts - City (157**, 249) and Wakefield (137**, 105). Barunga West and Northern Areas also had slightly elevated rates.

The lowest ratios were in the south-east of the State, in the SLAs of Grant, Robe, Wattle Range - East and Kingston. Other areas with lower than expected ratios included Kimba, Mount Barker Balance, Yankalilla, Alexandrina - Strathalbyn and Unincorporated Far North.

Map 4.27 and Map 4.28: Hospital admissions of males for respiratory system diseases, Metropolitan Adelaide and country SA, 2005/06



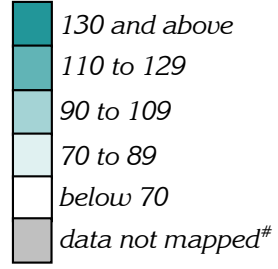
Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

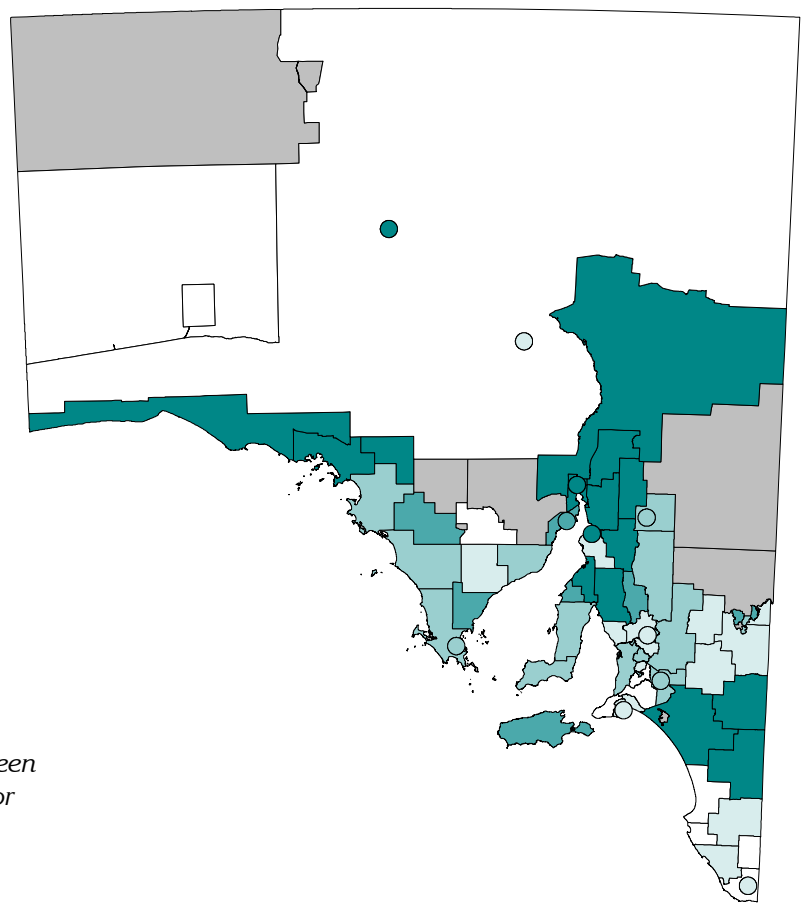
Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Hospital admissions – Admissions for diseases of the musculoskeletal system and connective tissue

Diseases of the musculoskeletal system and connective tissue include conditions of the muscles and the skeleton such as bones, joints and tendons. Such diseases include osteoporosis and various types of arthritis. Physical inactivity has been identified as a behavioural risk factor for osteoarthritis, but not for rheumatoid arthritis. Lack of physical exercise has also been identified as a risk factor for osteoporosis, particularly during growth and adolescence. However, females who exercise excessively are also at risk due to oestrogen loss and mechanical stress on the skeleton (52).

Arthritis is a condition most prevalent in older Australians, affecting 49% of both Indigenous and non-Indigenous people aged 65 years and over in 2004–05 (53). Although similar rates of arthritis were reported for older Indigenous and non-Indigenous Australians in 2004–05, arthritis was more prevalent among Indigenous people in younger age groups (53).

Rates of admission for diseases of the musculoskeletal system and connective tissue increase with age for both men and women, although much more steeply for men in the younger age groups and for women at older ages (Figure 4.43). This greater rate of increase, in particular in the 75 year and over age group, is largely a result of osteoporosis and associated bone fragility. The gap in rates for men and women at younger ages (higher rates for men) almost disappears in the 45 to 54 year age group, and is reversed at older ages (higher rates for women).

There was little variation by socioeconomic status, with rates in the lowest SES group slightly lower than those in the highest SES group for both males and females (Figure 4.44). Across all groups, female rates were slightly higher than those for males.

The pattern of admissions by remoteness showed the lowest rates occurring in the Very Remote areas; however, rates in the other remoteness classes were all higher than expected in the Major Cities areas, with the highest occurring in the Outer Regional areas (Figure 4.45).

Hospital admissions for diseases of the musculoskeletal system and connective tissue, South Australia, 2005/06

Figure 4.43: Admissions by age and sex

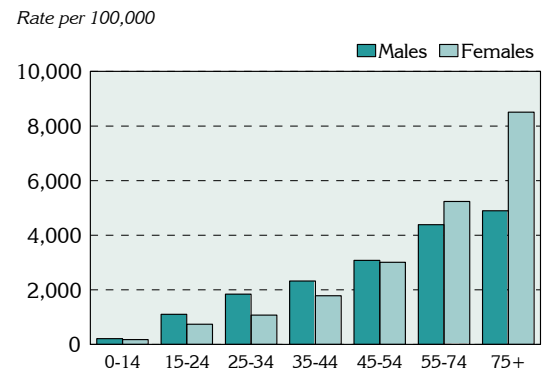


Figure 4.44: Admissions: by socioeconomic status and sex

Rate ratio: Male 0.97; Female 0.94

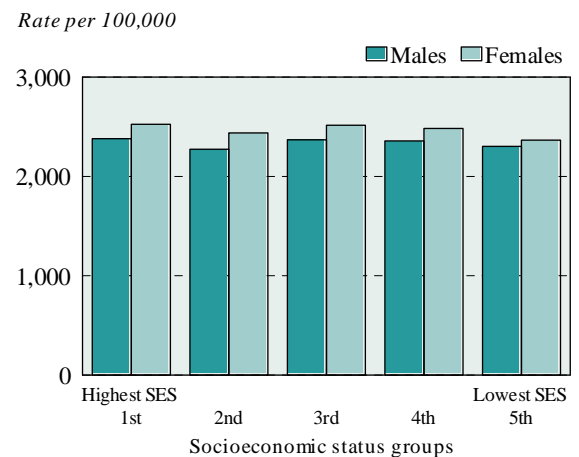
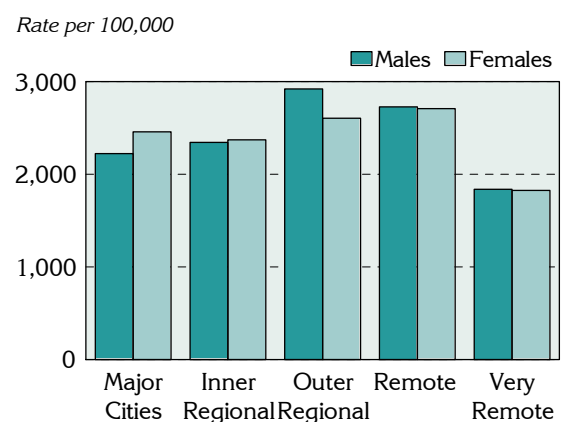


Figure 4.45: Admissions: by remoteness and sex

Rate ratio: Male 0.82; Female 0.74



Hospital admissions – Admissions of males for diseases of the musculoskeletal system and connective tissue, 2005/06

There were 10% fewer admissions of males for diseases of the musculoskeletal system and connective tissue in Central Northern Adelaide Health Region (a standardised ratio (SR) of 90**, 8,070 admissions) than expected from the State rate. In Southern Adelaide, there were 7% more admissions than expected (an SR of 107**, 4,046 admissions).

All health regions in county SA had more admissions of males for these diseases than expected, with the exception of Hills Mallee Southern, with a number consistent with the State rate. The most highly elevated ratio was in Riverland, an SR of 132** and 529 admissions.

Table 4.24: Hospital admissions – Male admissions for diseases of the musculoskeletal system and connective tissue, by Health Region, South Australia, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	8,070	2,112.8	90**
Northern sub-region	3,465	2,177.0	93**
Western sub-region	2,312	2,137.4	91**
Central East sub-region	2,293	2,000.4	86**
Southern Adelaide	4,046	2,493.7	107**
Urban Beaches District	1,678	2,417.0	103
Hills District	980	2,557.5	109**
Outer Southern District	1,388	2,546.5	109**
Metropolitan Adelaide (excl. Gawler)	12,116	2,226.3	95**
Hills Mallee Southern	1,478	2,307.8	99
South East	837	2,636.0	113**
Wakefield	1,481	2,732.5	117**
Mid North	431	2,566.9	110
Riverland	529	3,095.3	132**
Eyre	452	2,542.9	109
Northern & Far Western	682	2,759.4	118**
Country South Australia (incl. Gawler)	5,890	2,601.9	111**

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

Playford - Hills had the most highly elevated admission ratio for males with diseases of the musculoskeletal system and connective tissue, with more than twice the number of admissions than expected (an SR of 228**, 88 admissions) (Map 4.29). Elevated ratios were also recorded in the SLAs of Adelaide Hills - Ranges (an SR of 140**, 176) and - Central (129**, 192); Holdfast Bay - South (126**, 230); Mitcham - North-East (121**, 223); and Playford - West (120*, 121).

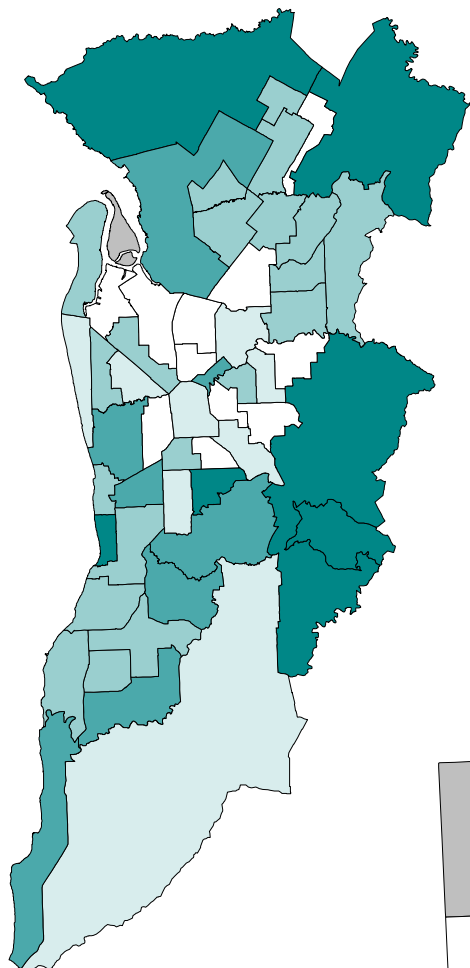
Lower than expected ratios were recorded for Port Adelaide Enfield - Park, - Inner and - Port; Playford - East Central; West Torrens - East; Unley - East; Prospect; Norwood Payneham St Peters - West; Burnside - North-East; Campbelltown - East; and Salisbury - South-East.

Country SA

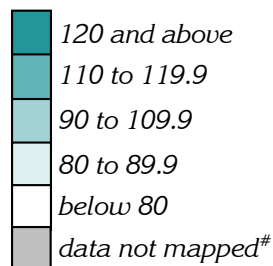
In country SA (Map 4.30), elevated ratios for admissions of males for these diseases covered a wide area, including Unincorporated West Coast (an SR of 271**, 16 admissions); Port Pirie Districts Balance (213**, 96); Lower Eyre Peninsula (199**, 113); Tatiara (175**, 148); Unincorporated Far North (172**, 41); Renmark Paringa - Paringa (161**, 38); Berri & Barmera - Barmera (157**, 83) and - Berri (148**, 117); The Coorong (155**, 113); Barossa - Tanunda (150**, 84); Southern Mallee (145*, 41); Loxton Waikerie - West (142**, 83); and Yorke Peninsula - North (142**, 154). Other areas with high ratios were Whyalla, Peterborough, Grant, Wakefield, and Yankalilla.

Lower than expected ratios were recorded in the SLAs of Ceduna (an SR of 60, 25 admissions), Coober Pedy (56, 18), Streaky Bay (54, 15) and Unincorporated Flinders Ranges (49, 7).

Map 4.29 and Map 4.30: Hospital admissions of males for diseases of the musculoskeletal system and connective tissue, Metropolitan Adelaide and country SA, 2005/06

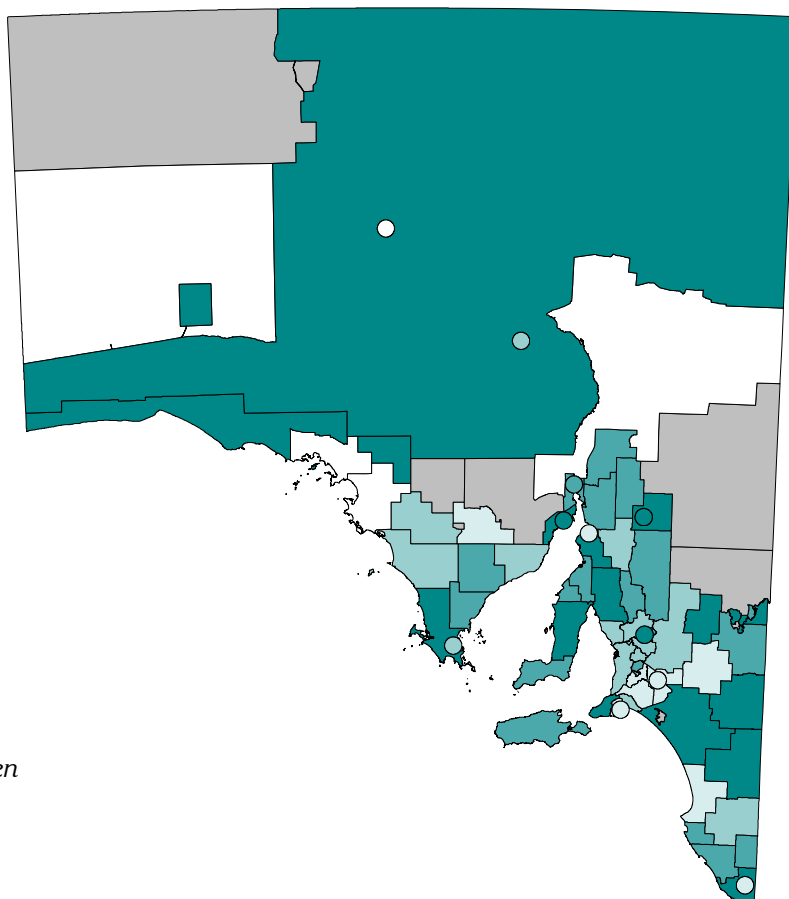


Standardised ratio (as an index)*, by SLA

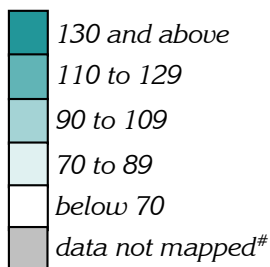


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

[#] Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

[#] Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Hospital admissions – Admissions for injuries, poisoning and other consequences of external injury

This category of hospital admissions for injuries includes falls, transport accidents, exposure to mechanical forces, other external causes of injury, assault, self harm, and other causes of injury. Further details are provided in Table A1, in the Appendix.

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 may seriously affect the quality of life of injured people and their families. Significant health costs are also attributable to injury, accounting for approximately 8% of the total direct costs of all diseases annually (4).

Males had a 22% higher rate of injury admissions (2,524 admissions per 100,000 population) than females (2,067 admissions per 100,000 population) (Table 4.18). This higher rate was evident at all but the oldest ages (Figure 4.46): below the 55 to 74 year age group, men had higher rates (and, in some cases, substantially higher), and above this age group, rates for women were substantially higher. The high incidence of falls is likely to be the cause of the substantial increase (almost five times) in the rate for women in the oldest group over that in the 55 to 74 year age group.

Males had a 30% higher rate of admission for injuries in the lowest SES areas than in the highest SES areas (a rate ratio of 1.30), while for females, the difference was 13% (Figure 4.47). The rates across all SES groups were higher for males than for females.

Admission rates increased strongly with remoteness, with the rate of injury admissions for males twice as high in the Very Remote areas as in the Major Cities areas (Figure 4.48): female rates were more than one and a half times higher. Across all remoteness areas, male rates of admission for injuries were notably higher compared with those for females.

Hospital admissions for injury, poisoning and other consequences of external causes, South Australia, 2005/06

Figure 4.46: Admissions by age and sex

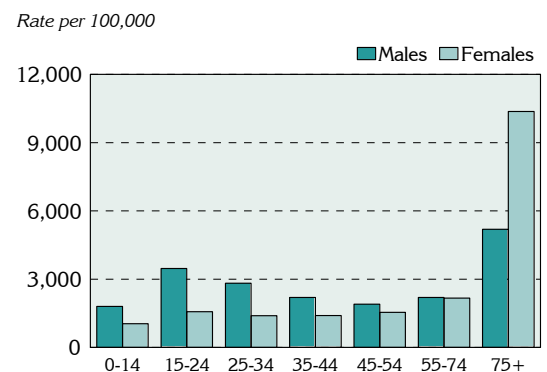


Figure 4.47: Admissions: by socioeconomic status and sex

Rate ratio: Male 1.30; Female 1.13

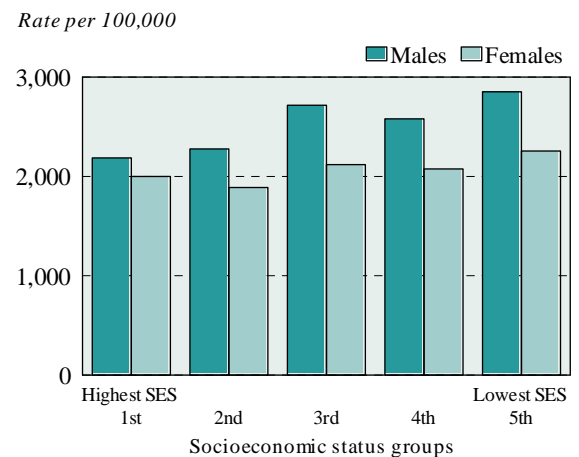
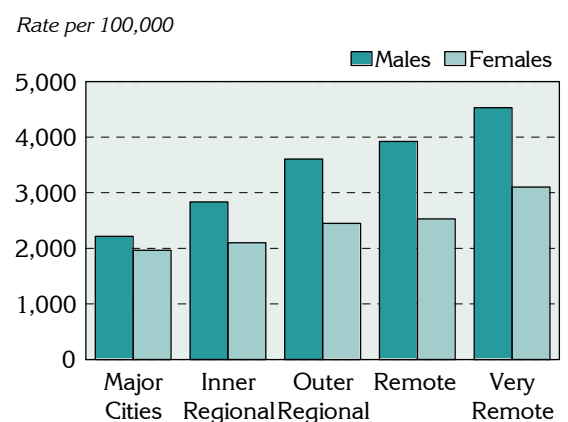


Figure 4.48: Admissions: by remoteness and sex

Rate ratio: Male 2.05; Female 1.58



Hospital admissions – Admissions of males for injury, poisoning and other consequences of external causes

There were fewer admissions of males living in Metropolitan Adelaide for injury, poisoning and other consequences of external causes than were expected from the State rate, and fewer in both Central Northern Adelaide and Southern Adelaide Health Regions (SRs of 87 and 90, respectively).

In country South Australia, all health regions had elevated ratios, with the overall ratio in country SA being 31% higher than expected (an SR of 131**, 7,229 admissions). It is pertinent to note that the data refer to the location of the usual address of the person admitted, and not to the location of the event leading to the admission (which may be the same).

Table 4.25: Hospital admissions – Male admissions for injury, poisoning and other consequences of external causes, by Health Region, South Australia, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	8,513	2,185.0	87**
Northern sub-region	3,909	2,339.1	93**
Western sub-region	2,239	2,091.1	83**
Central East sub-region	2,365	2,049.0	81**
Southern Adelaide	3,707	2,272.7	90**
Urban Beaches District	1,586	2,298.8	91**
Hills District	758	2,002.9	79**
Outer Southern District	1,363	2,422.0	96
Metropolitan Adelaide (excl. Gawler)	12,220	2,210.9	88**
Hills Mallee Southern	1,823	3,053.2	121**
South East	1,111	3,486.1	138**
Wakefield	1,575	3,066.6	122**
Mid North	527	3,380.5	134**
Riverland	544	3,266.9	129**
Eyre	723	4,131.8	164**
Northern & Far Western	926	3,677.3	146**
Country South Australia (incl. Gawler)	7,229	3,318.2	131**

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The most highly elevated ratio, indicating 67% more admissions of males for injuries than expected from the State rate, was in Walkerville (an SR of 167**, 152 admissions): in the adjacent SLA of Adelaide, there were 18% more admissions than expected (an SR of 118**, 298) (Map 4.31). Other areas with higher than expected ratios were largely in the outer north in Playford - Hills (an SR of 127, 54 men) - Elizabeth (124**, 388) and - West Central (114, 183); and in Salisbury Balance (119*, 155).

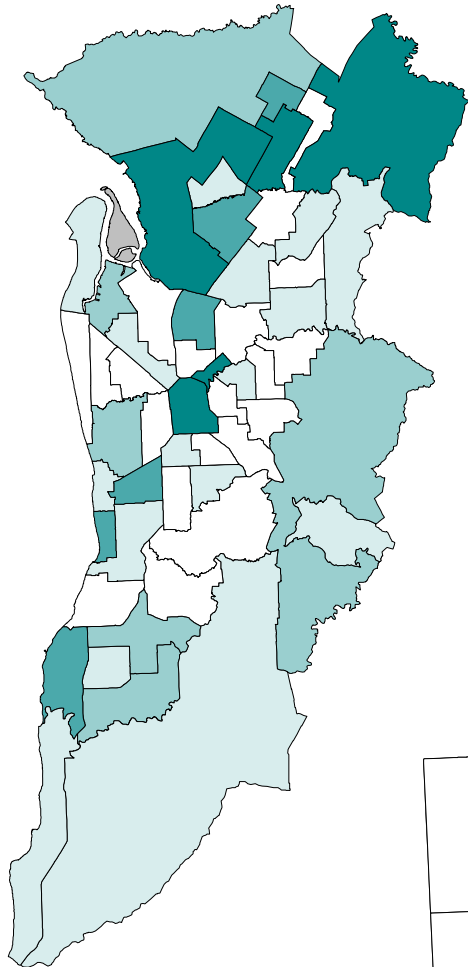
SLAs with ratios more than 30% lower than expected included Unley - East, West Torrens - East, Prospect, Burnside - North-East, Campbelltown - East and Tea Tree Gully - Central.

Country SA

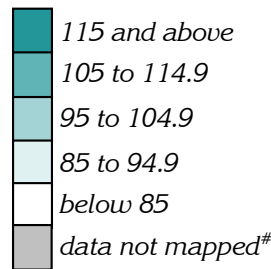
Injury admissions for males were high throughout a majority of country SLAs (Map 4.32), including Unincorporated West Coast (an SR of 391**, 26 admissions), Elliston (361**, 53), Unincorporated Riverland (275*, 5), Peterborough (260**, 65), Le Hunte (230**, 41), Tatiara (224**, 208), Coober Pedy (218**, 59), The Coorong (216**, 158), Ceduna (213**, 99), Southern Mallee (207**, 60), Orroroo/Carrieton (193**, 24), Port Augusta (193**, 344), Kangaroo Island (190**, 106), Port Pirie Districts Balance (180**, 82), Flinders Ranges (180**, 82), Unincorporated Flinders Ranges (176**, 27), Tumby Bay (173**, 59), Barunga West (167**, 58) and Wattle Range - West (164**, 183).

Lower than expected ratios were recorded in Anangu Pitjantjatjara.

Map 4.31 and Map 4.32: Hospital admissions of males for injury, poisoning and other consequences of external causes, Metropolitan Adelaide and country SA, 2005/06



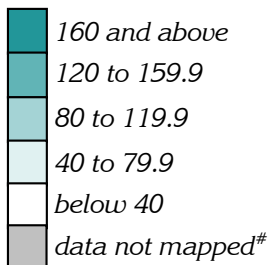
Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

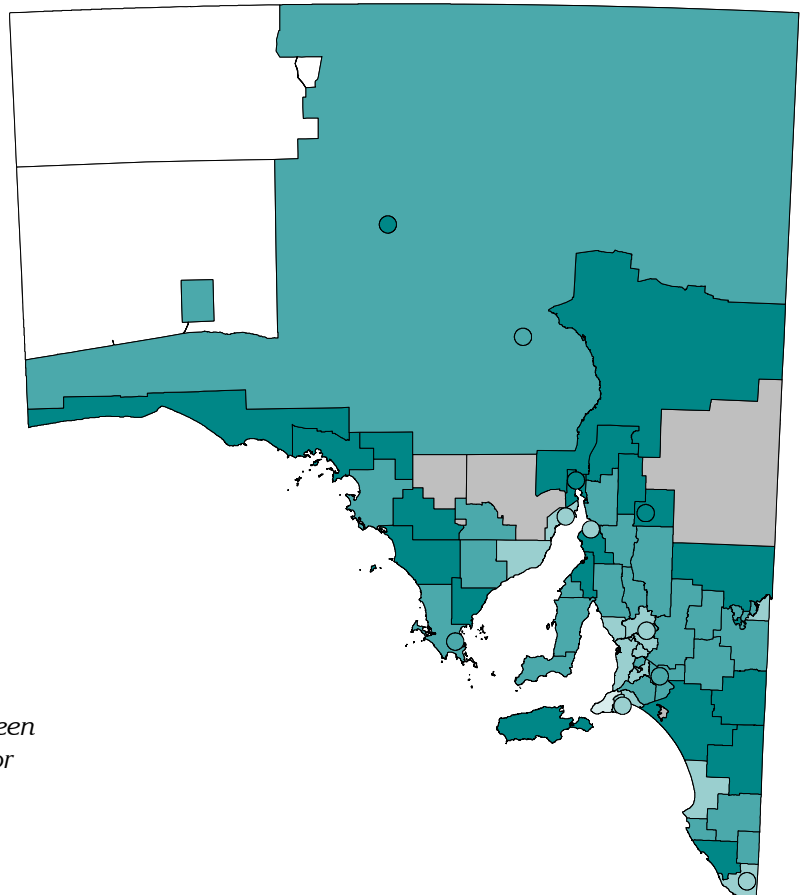
[#] Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

[#] Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Hospital admissions – Admissions for tonsillectomy

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.

The majority of admissions for tonsillectomy occur in children aged 0 to 14 years, with boys at these ages accounting for 66.1% all admissions of males for a tonsillectomy, and girls for 50.3% (Table 4.18). However, overall, males accounted for 44.9% of these admissions, compared with 55.1% for females. For males, admissions were generally at younger ages (66.1% at ages 0 to 14 years) than for females (50.3% at ages 0 to 14 years), with females more likely than males to be aged 15 to 24 years (18.3% of these admissions for females, and 6.9% for males) (Figure 4.49). At older ages, there was little difference in the rates of admission.

When examined by socioeconomic status, the rates in the lowest SES areas were only slightly higher than in the highest SES areas for both males and females (Figure 4.50). Male rates were lower when compared with females in all SES groups.

Rates also varied by remoteness, although the variations were different for males and females (Figure 4.51). For males, rates were 15% lower in the Very Remote areas than in the Major City areas (a rate ratio of 0.85), although the lowest rates were recorded in the Outer Regional areas. For females, there was only a marginal difference in rates between the Major Cities and Very Remote areas, with the highest rate in the Remote areas.

Hospital admissions for tonsillectomy, South Australia, 2005/06

Figure 4.49: Admissions by age and sex

Rate per 100,000

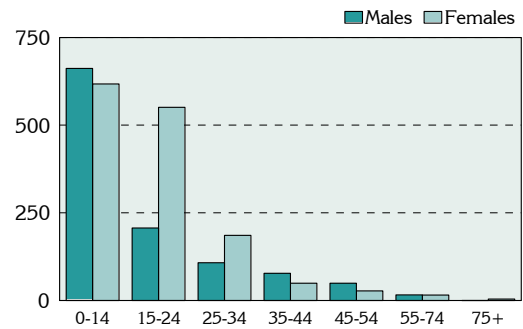


Figure 4.50: Admissions: by socioeconomic status and sex

Rate ratio: Male 1.07; Female 1.06

Rate per 100,000

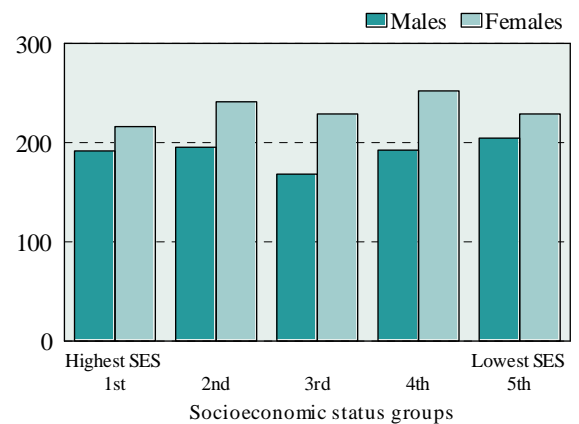
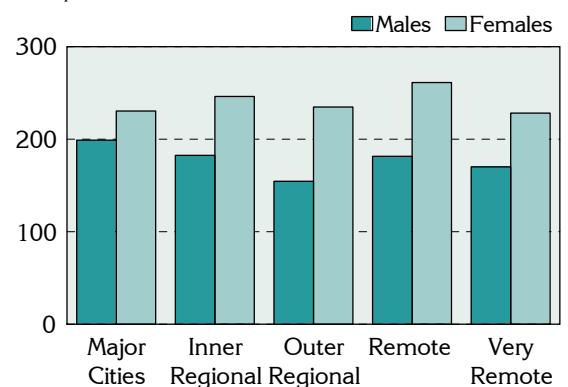


Figure 4.51: Admissions: by remoteness and sex

Rate ratio: Male 0.85; Female 0.99

Rate per 100,000



Hospital admissions – Admissions of males for tonsillectomy, 2005/06

Both Central Northern Adelaide (with a standardised ratio (SR) of 104, 759 admissions) and Southern Adelaide (an SR of 105, 319 admissions) Health Regions had more than the expected number of admissions from the State rate. In country SA, South East (an SR of 63, 42 admissions), Riverland (54, 18) and Northern & Far Western (84, 46) all had fewer admissions than expected.

Table 4.26: Hospital admissions – Male admissions for tonsillectomy, by Health Region, South Australia, 2005/06

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	759	198.2	104
Northern sub-region	380	205.9	108
Western sub-region	184	192.6	101
Central East sub-region	195	189.5	99
Southern Adelaide	319	199.3	105
Urban Beaches District	114	187.1	98
Hills District	78	206.6	108
Outer Southern District	127	206.9	109
Metropolitan Adelaide (excl. Gawler)	1,078	198.5	104
Hills Mallee Southern	113	190.1	100
South East	42	120.8	63**
Wakefield	100	191.1	100
Mid North	32	202.8	106
Riverland	18	102.2	54**
Eyre	40	209.9	110
Northern & Far Western	46	160.9	84
Country South Australia (incl. Gawler)	391	171.8	90*

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The most highly elevated ratios were in the SLAs of Walkerville (an SR of 194*, although only 11 admissions); Norwood Payneham St Peters - East (172**, 23); Salisbury Balance (164*, 20); Playford - Hills (160, 6) and - West (135, 13); Tea Tree Gully - Hills (148, 17) and - Central (131, 36); Onkaparinga - Hackham (147, 22); Port Adelaide Enfield - Park (145, 21); Mitcham - North-East (136, 18) and Adelaide Hills - Ranges (128, 13) (Map 4.33).

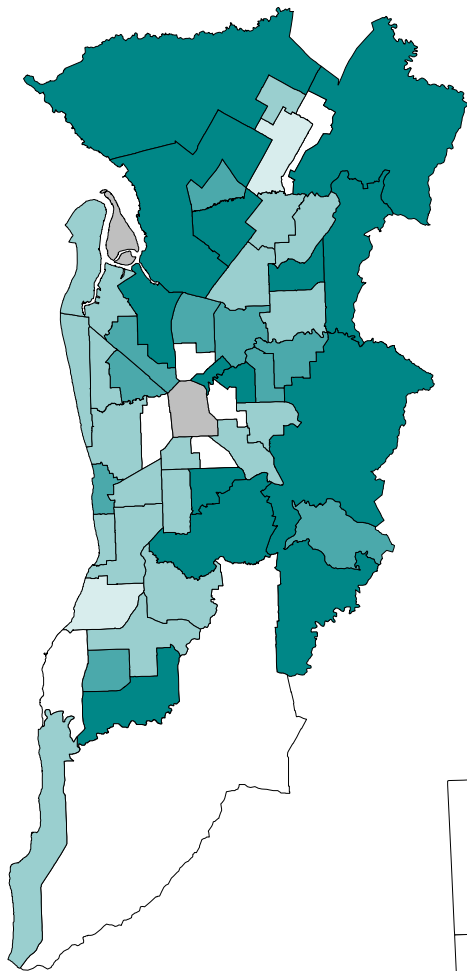
Lower than expected ratios were recorded in Playford - East Central; Onkaparinga - Hills and - North Coast; West Torrens - East; Unley - East; Norwood Payneham St Peters - West; and Prospect.

Country SA

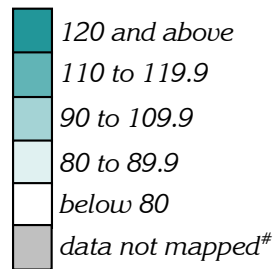
In country SA (Map 4.34), the highest ratios of admission for men for a tonsillectomy were in Victor Harbor (an SR of 163, 14 admissions), Ceduna (161, 7), Goyder (153, 6), Mid Murray (146, 10), Wakefield (141, 9), The Coorong (138, 8), Clare and Gilbert Valleys (137, 11) and Port Pirie Districts - City (136, 19).

The lowest ratios were in the SLAs of Wattle Range - West, Murray Bridge, Mount Barker - Balance, Naracoorte and Lucindale, Copper Coast, Adelaide Hills - North and Alexandrina - Coastal.

Map 4.33 and Map 4.34: Hospital admissions of males for tonsillectomy, Metropolitan Adelaide and country SA, 2005/06

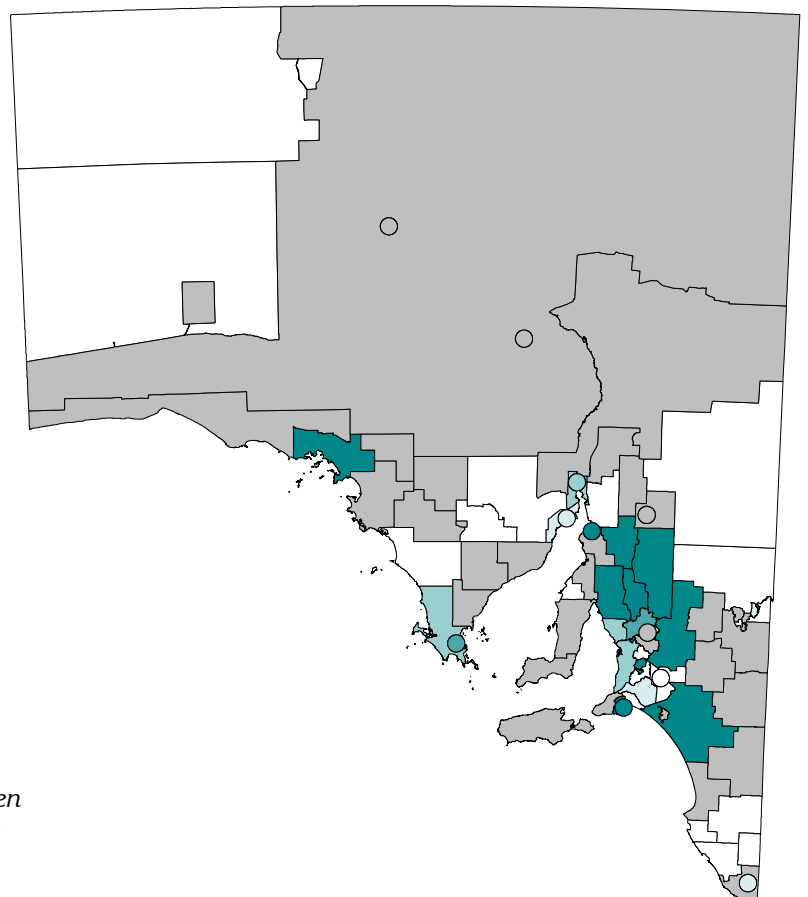


Standardised ratio (as an index)*, by SLA

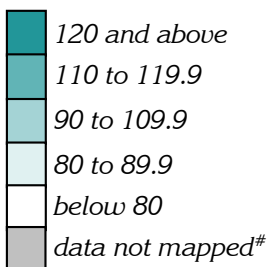


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

[#] Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

[#] Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Hospital admissions – Aboriginal population

Aboriginal males continue to suffer mortality and morbidity at much higher rates than non-Indigenous males, and have a reduced quality of life and high rates of illness and premature death (16).

Aboriginal men are seldom involved with the planning and delivery of health services, which can result in a lack of focus on men's health in services and programs (2). Aboriginal men's health is also different to that for women, and is seen as a whole male community issue, rather than an individual issue (2).

Note: References to 'Aboriginal' in the text should be read as including Torres Strait Islander peoples.

In this section, information is provided of hospital admission rates for Aboriginal males. A comparison of admission rates by age and sex for Aboriginal and other Australians is shown below in Table 4.27 (showing numbers and rates) and Table 4.28 (showing rate ratios).

Overall, there is little difference in admission rates for males by Indigenous status, with rates for Indigenous males 4% higher (Table 4.28). However, when examined by age group, there are marked differences, with the greatest being in the 35 to 44 year age group, where the Indigenous rate is nearly three times that of non-Indigenous men (a rate ratio of 2.87). For females, the overall difference is 11%, with the greatest difference in the 35 to 44 (1.90) and 15 to 24 (1.87) year age groups.

For Aboriginal males, those at the youngest and oldest ages have higher rates of admission than Aboriginal females, with around half the number at ages 15 to 24 and 25 to 34 years (Table 4.28).

Table 4.27: Hospital admissions by Indigenous status, age and sex, South Australia, 2005/06-2006/07
Number and Rate

Age (years)	Males				Females			
	Indigenous		Non-Indigenous		Indigenous		Non-Indigenous	
	No.	Rate ¹	No.	Rate ¹	No.	Rate ¹	No.	Rate ¹
0 - 14	1,715	18,421.1	22,270	16,197.8	1,324	14,403.8	16,279	12,414.4
15 - 24	931	18,687.3	13,389	12,944.5	2,132	42,067.9	22,105	22,516.1
25 - 34	933	28,119.3	14,335	14,622.9	2,104	57,707.1	34,614	36,430.2
35 - 44	1,639	52,364.2	20,133	18,276.2	1,904	54,681.2	31,636	28,852.9
45 - 54	1,209	54,118.2	28,187	26,291.3	1,246	51,149.4	33,694	30,743.3
55-64	930	82,010.6	38,717	44,474.7	860	68,580.5	36,998	41,312.9
65+	510	74,561.4	90,759	88,622.7	750	69,962.7	95,054	72,829.4
Total	7,867	31,732.0	227,790	30,543.6	10,320	39,464.6	270,380	35,407.0

¹ Rate is the number of admissions per 100,000 population

Table 4.28: Hospital admissions by Indigenous status, age and sex, South Australia, 2005/06-2006/07
Rate ratio

Age (years)	RR Indigenous: non-Indigenous ¹		RR Males: Females ¹	
	Males	Females	Indigenous	Non-Indigenous
	0 - 14	1.14	1.16	1.28
15 - 24	1.44	1.87	0.44	0.57
25 - 34	1.92	1.58	0.49	0.40
35 - 44	2.87	1.90	0.96	0.63
45 - 54	2.06	1.66	1.06	0.86
55-64	1.84	1.66	1.20	1.08
65+	0.84	0.96	1.07	1.22
Total	1.04	1.11	0.80	0.86

¹ RR is the ratio of the rates for the stated variables

Indigenous admissions – total admissions

Admission rates for Aboriginal males were higher than those for Aboriginal females for all age groups other than the 15 to 24 and 25 to 34, which also had the largest differentials in the male and female rates, and the 35 to 44 year age groups (Figure 4.52).

Admissions of Aboriginal males living in the lowest SES areas were substantially higher than those in the highest SES areas (almost one and a half times, a rate ratio of 1.45) (Figure 4.53). For Aboriginal females, the differential was over two times (a rate ratio of 2.12). For both males and females, the gradient in rates was broken by lower rates in the middle SES areas.

The pattern of admission rates across the remoteness classes for Aboriginal males showed the highest rates were in the Outer Regional areas, where the rate was 80% higher than in the Major Cities areas (a rate ratio of 1.80), with the next highest rates in the Remote and Very Remote areas (Figure 4.54). The differential in rates between the extremes of this remoteness classification was a much lower 31% (a rate ratio of 1.31). Admission rates for females followed these same patterns, but were higher in each remoteness class.

Admissions of Aboriginal people, South Australia, 2005/06-2006/07

Figure 4.52: Admissions, by age and sex
Rate per 100,000

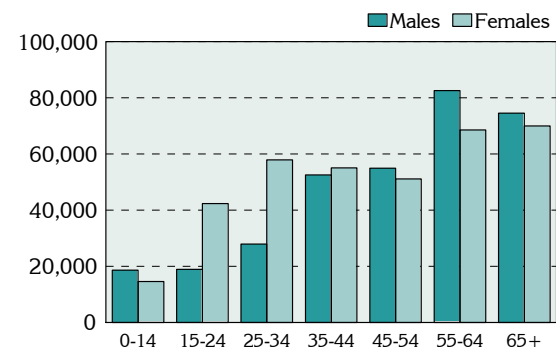


Figure 4.53: Admissions, by socioeconomic status

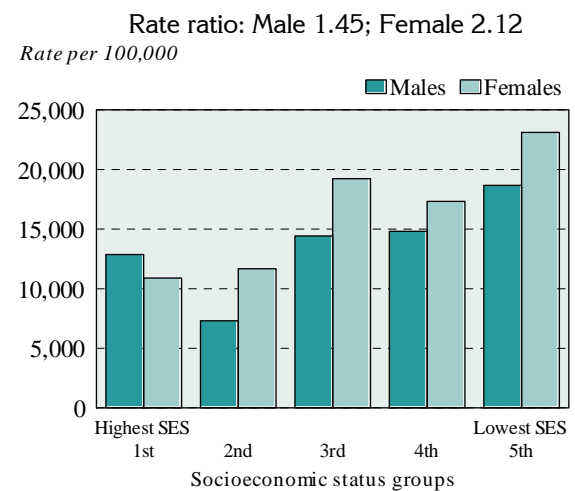
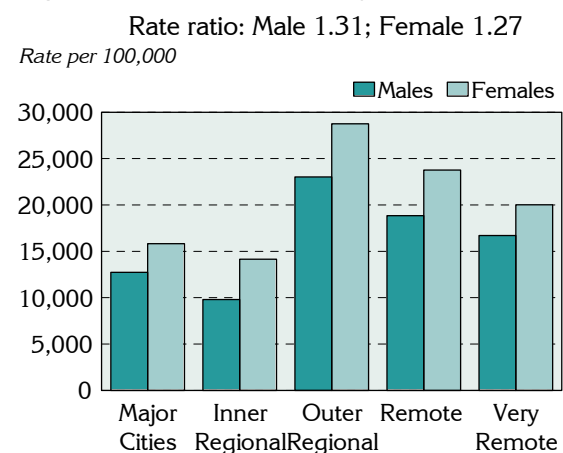


Figure 4.54: Admissions, by remoteness



Hospital admissions: Aboriginal males, all admissions, 2005/06-2006/07

In both Central Northern Adelaide and Southern Adelaide Health Regions, there were fewer admissions of Aboriginal males than expected from the State rate (standardised ratios (SRs) of 88** and 54**, respectively). In Southern Adelaide, Hills District had a very low admission ratio, almost 75% below the State average (an SR of 28**).

There were 16% more admissions of Aboriginal males than expected in country SA (an SR of 116**, 4,916 admissions). Eyre had the most highly elevated ratio, with 94% more admissions than expected (an SR of 194**, 1,077 admissions), and there were 23% more than expected in Northern & Far Western (123**, 2,340). South East had 47% fewer admissions than expected (an SR of 53**, 132 admissions).

Table 4.29: Hospital admissions – Aboriginal males, all admissions, by Health Region, South Australia, 2005/06-2006/07

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	2,463	13,904.3	88**
Northern sub-region	1,295	13,120.1	83**
Western sub-region	807	14,782.8	93*
Central East sub-region	361	15,139.4	95
Southern Adelaide	432	8,508.3	54**
Urban Beaches District	180	9,470.1	60**
Hills District	25	4,482.8	28**
Outer Southern District	227	8,667.5	55**
Metropolitan Adelaide (excl. Gawler)	2,895	12,702.2	80**
Hills Mallee Southern	521	12,862.4	81**
South East	132	8,336.8	53**
Wakefield	399	14,419.3	91
Mid North	150	12,007.9	76**
Riverland	297	18,097.3	114*
Eyre	1,077	30,832.8	194**
Northern & Far Western	2,340	19,486.5	123**
Country South Australia (incl. Gawler)	4,916	18,348.3	116**

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

Hospital admissions of Aboriginal males were highest in the metropolitan SLAs of Adelaide (an SR of 209**, 158 admissions), Adelaide Hills - Central (194**, 25), Salisbury Balance (171**, 43), and Port Adelaide Enfield - Park (155**, 161) and - Inner (149**, 171) (Map 4.35).

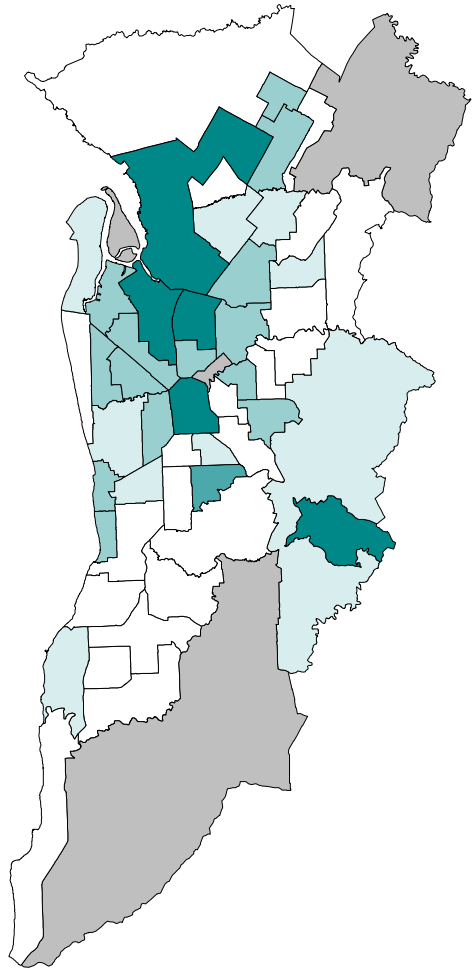
SLAs with admission ratios in the lowest range were Marion - South and - Central; Onkaparinga - Reservoir, - Woodcroft, - South Coast and - Hackham; Tea Tree Gully - Hills, - North and - South; Unley - West; Mitcham - Hills and - West; Playford - East Central and - West; Charles Sturt - Coastal; Norwood Payneham St Peters - West; Campbelltown - West; Salisbury - Inner North; and Burnside - South-West.

Country SA

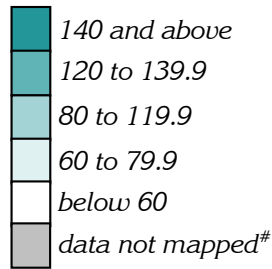
For country SA, SLAs with ratios elevated by 50% or more included Unincorporated West Coast (an SR of 523**, 273 admissions), Coober Pedy (309**, 291), Yorke Peninsula - North (268**, 237), The Coorong (189**, 184), Port Augusta (186**, 1,388), Ceduna (183**, 449), Unincorporated Far North (174**, 88), Whyalla (169**, 365), Renmark Paringa - Renmark (164**, 53), Port Lincoln (159**, 322) and Berri & Barmera - Berri (150**, 112) (Map 4.36).

The majority of the remaining SLAs (with five or more admissions) had ratios in the lowest range.

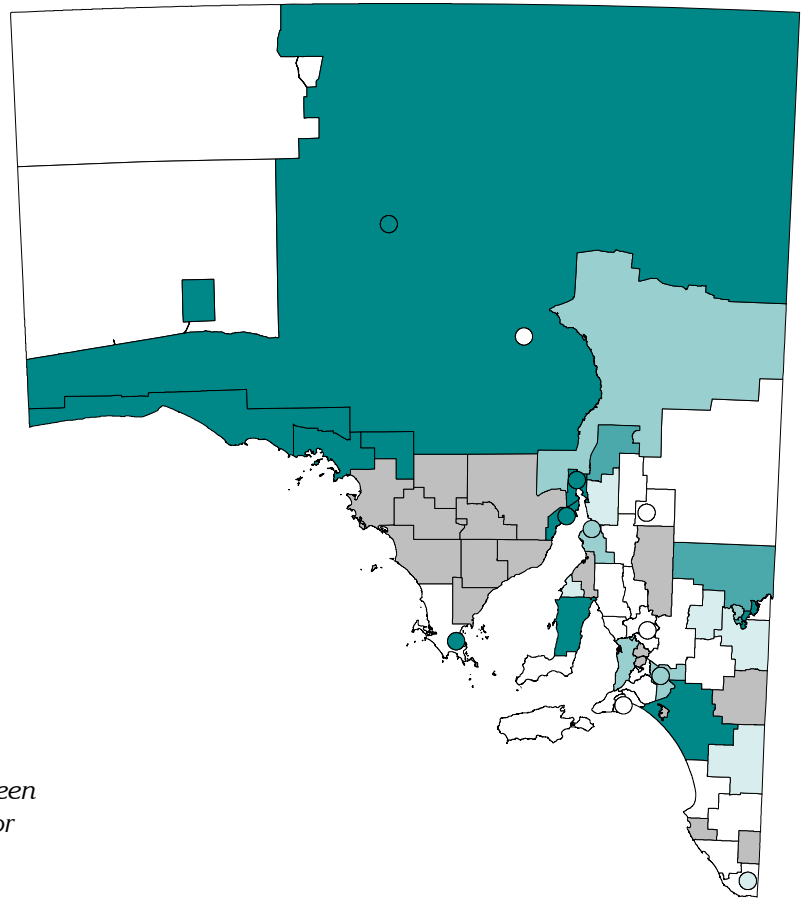
Map 4.35 and Map 4.36: Hospital admissions: Aboriginal males, total admissions, Metropolitan Adelaide and country SA, 2005/06-2006/07



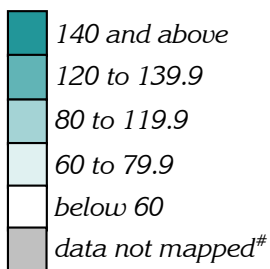
Standardised ratio (as an index)*, by SLA



Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals
 # Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Indigenous admissions – diabetes mellitus

Diabetes mellitus (generally referred to as diabetes) is a disease that significantly affects the Indigenous population. It manifests in two main forms: Type 1 and Type 2. There are a number of risk factors associated with diabetes, including obesity, poor nutrition and physical inactivity. Its longer term consequences include renal failure, blindness and limb amputation. Hospital admissions for diabetes understate the true prevalence of this disease, but do provide some information on its impact on Aboriginal communities (5).

Aboriginal males were admitted for diabetes at a slightly lower rate than for females in all but the 45 to 55 and 55 to 64 year age groups (Figure 4.55). Admissions increased with age, with the highest rates for men occurring in the 55 to 64 year age groups. The rate of admissions was lower in the 65 year and over age group for men; however, female rates remained high.

Admission rates for Aboriginal males with diabetes increased with increasing socioeconomic disadvantage, with the rate of admissions in the lowest SES areas almost three times higher than for those living in the highest SES areas (a rate ratio of 2.83) (Figure 4.56). Female rates were almost six times higher in the lowest SES group (a rate ratio of 5.77).

Aboriginal males in the most remote areas had admission rates for diabetes of over one and a half times those in the Major Cities remoteness class (a rate ratio of 1.56) (Figure 4.57). Female rates were also higher in the Very Remote areas (a rate ratio of 1.91); however for both males and females, the highest admissions rates occurred in the Outer Regional areas. Across all areas, rates for males were lower than those for females.

Admissions of Aboriginal people for diabetes mellitus, South Australia, 2005/06-2006/07

Figure 4.55: Admissions, by age

Rate per 100,000

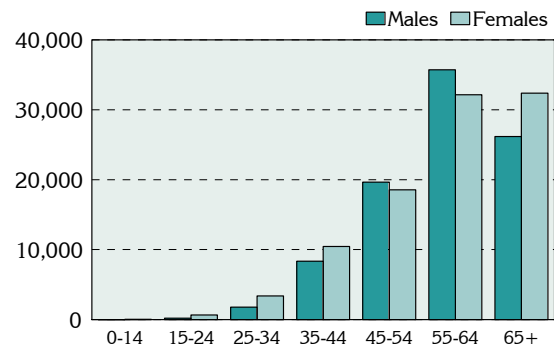


Figure 4.56: Admissions, by socioeconomic status and sex

Rate ratio: Male 2.83; Female 5.77

Rate per 100,000

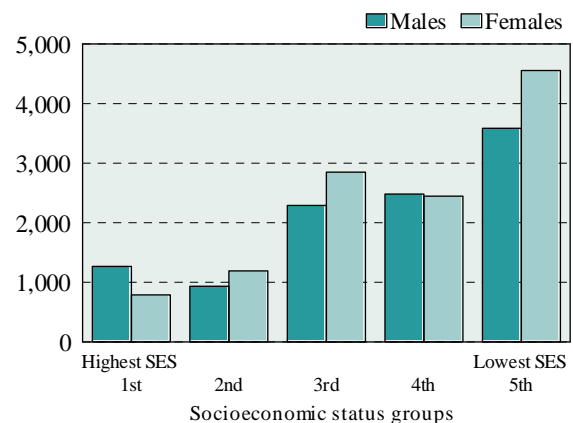
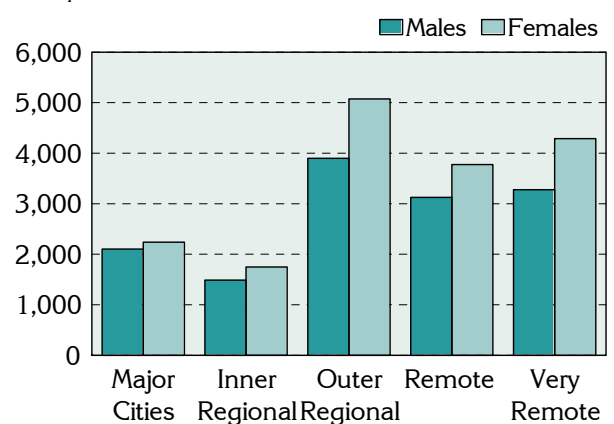


Figure 4.57: Admissions, by remoteness and sex

Rate ratio: Male 1.56; Female 1.91

Rate per 100,000



Hospital admissions: Aboriginal males, for diabetes, 2005/06-2006/07

In Southern Adelaide Health Region, there were 75% fewer admissions of Aboriginal males for diabetes than expected from the State rate (an SR of 25**, 33 admissions). Central Northern Adelaide Health Region also had fewer than the expected number of admissions (an SR of 92, 416 admissions). Overall, there were 23% fewer admissions for diabetes of Aboriginal males living in Metropolitan Adelaide than were expected from the State rate.

In country South Australia, admission rates in Eyre and Northern & Far Western Health Regions were highly elevated (SRs of 204** and 132** respectively). Health regions with fewer admissions than expected included Riverland, South East, Mid North and Wakefield.

Table 4.30: Hospital admissions – Aboriginal males, diabetes admissions, by Health Region, South Australia, 2005/06-2006/07

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	416	2,509.9	92
Northern sub-region	220	2,631.3	96
Western sub-region	148	2,618.4	96**
Central East sub-region	48	1,874.1	69**
Southern Adelaide	33	692.2	25**
Urban Beaches District	19	968.6	35**
Hills District	2	360.0	13**
Outer Southern District	12	533.3	20**
Metropolitan Adelaide (excl. Gawler)	449	2,103.8	77
Hills Mallee Southern	99	2,334.4	86
South East	12	708.1	26**
Wakefield	79	2,158.5	79*
Mid North	24	1,677.0	61*
Riverland	62	3,610.4	13*
Eyre	186	5,567.5	204**
Northern & Far Western	438	3,602.7	132**
Country South Australia (incl. Gawler)	900	3,186.7	117**

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

Although numbers were small at the SLA level, the data have been mapped to these areas to allow comparison with other indicators in this report (Map 4.37). SLAs with the largest number of admissions for Aboriginal males for diabetes were Port Adelaide Enfield - Inner (SR 266**, 53 admissions), - Park (200**, 40), and - Port (167**, 27); Adelaide (246**, 26); Charles Sturt - Inner East (165, 13); Playford - Elizabeth (164**, 45) and - West Central (148*, 37); and Norwood Payneham St Peters - East (160, 7).

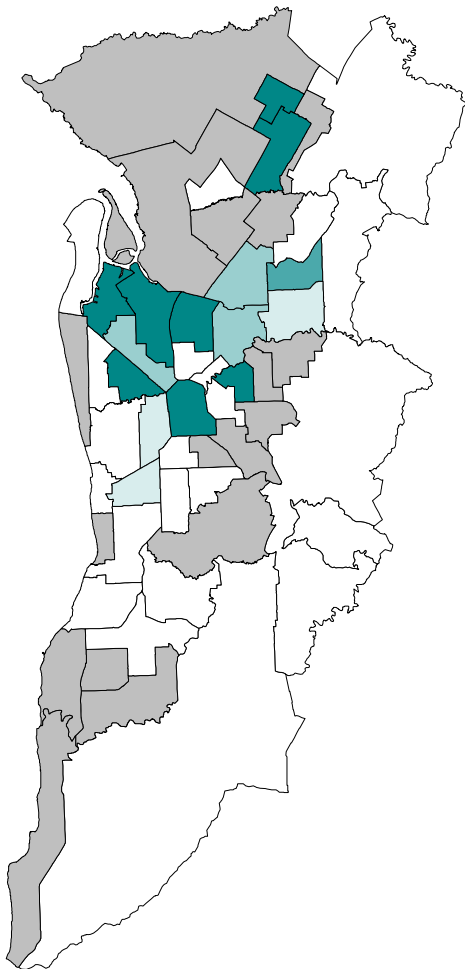
Lower than expected ratios were recorded for a majority of the remaining SLAs (with five or more admissions).

Country SA

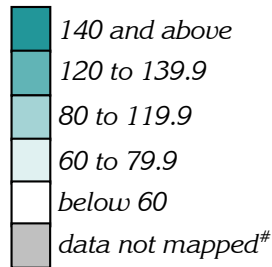
In country SA, elevated ratios for diabetes admissions were recorded for Aboriginal males living in Unincorporated West Coast (SR 586**, 54 admissions), Yorke Peninsula - North (375**, 60), Victor Harbor (363**, 5), Coober Pedy (299**, 55), Berri & Barmera - Berri (249**, 34), Unincorporated Riverland (239**, 15), Unincorporated Far North (222**, 23), Ceduna (199**, 77), Port Augusta (197**, 254), Unincorporated Flinders Ranges (172**, 30), Whyalla (171**, 55), The Coorong (169**, 36), Port Lincoln (157**, 53), Port Pirie Districts - City (141, 22), and Renmark Paringa - Renmark (140, 6).

Lower than expected ratios were recorded for a majority of the remaining SLAs (with five or more admissions).

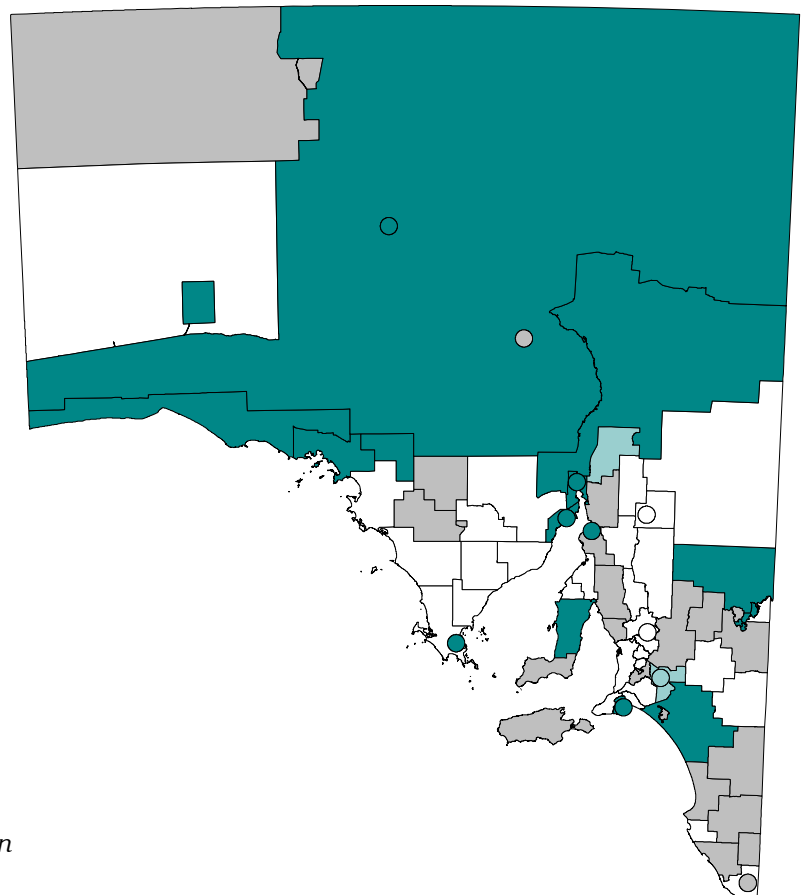
Map 4.37 and Map 4.38: Hospital admissions: Aboriginal males, diabetes, Metropolitan Adelaide and country SA, 2005/06-2006/07



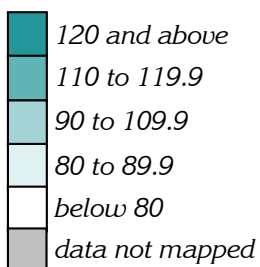
Standardised ratio (as an index)*, by SLA



Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Indigenous admissions – alcohol-related conditions

While Indigenous people in Australia are less likely to be current drinkers compared to the general population, those who do drink are more likely to do so at risky levels (17).

Alcohol-related conditions which require hospital admission may be acute or chronic. Those listed as chronic are generally those which result from long-term misuse of alcohol (e.g., liver cancer); and those listed as acute tend to result from bouts of intoxication (e.g., assault) (18).

These data were originally published by the SA Aboriginal Health Partnership and PHIDU undertook to update them.

The rates of admission for alcohol-related conditions were higher for Aboriginal males than for females in all age groups. The highest rate of male admissions occurred in the 35 to 44 year age group, with rates decreasing from the 45 to 54 year age group onwards. Similarly, female admission rates were highest in the 35 to 44 year age group before decreasing again from the 45 to 54 year age group. However, the rate in the 65 year and over age group was substantially below that for males (Figure 4.58).

Admissions of males showed a strong association with socioeconomic status, with admissions in the lowest SES areas occurring at more than one and a half times the rate of the highest SES areas (a rate ratio of 1.54) (Figure 4.59). For females, although rates were lower than those for males in each SES group, the differential was even greater with rates in the lowest SES group nearly three times those in the highest SES group (a rate ratio of 2.72).

Figure 4.60 shows admissions by remoteness and sex. The highest rates of admission for both males and females were in the Outer Regional areas: and rates for males were higher than for females across all remoteness classes. Overall, the rate of admissions for males was 29% higher in the Very Remote areas compared with the Major Cities; the differential for females was greater, at 71%.

Admissions of Aboriginal people for alcohol-related conditions, South Australia, 2005/06-2006/07

Figure 4.58: Admissions by age and sex
Rate per 100,000

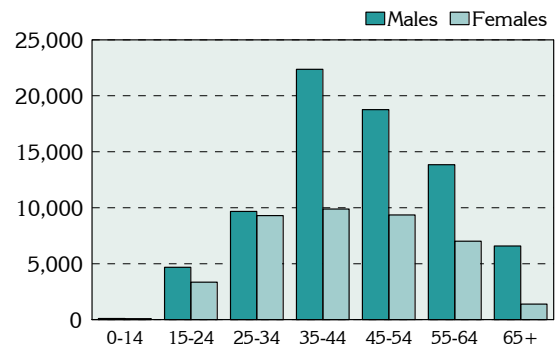


Figure 4.59: Admissions by socioeconomic status and sex

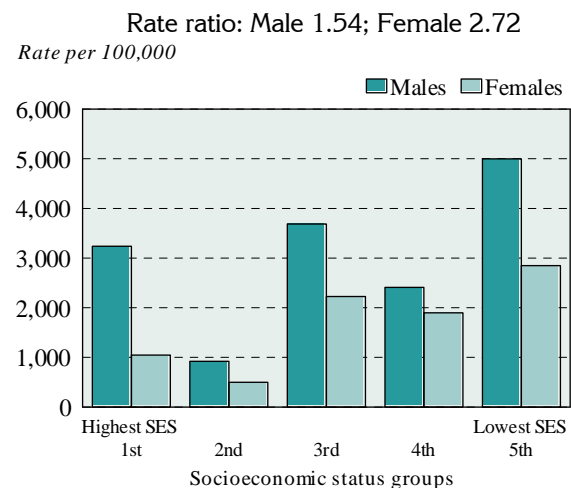
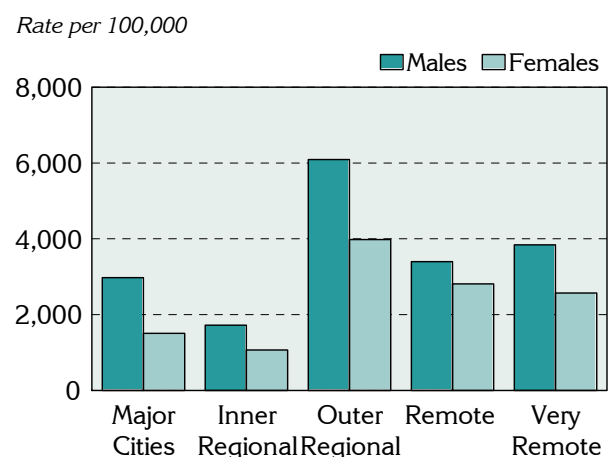


Figure 4.60: Admissions by remoteness and sex
Rate ratio: Male 1.29; Female 1.71



Hospital admissions: Aboriginal males, alcohol-related conditions, 2005/06-2006/07

In Metropolitan Adelaide, admissions of Aboriginal males for alcohol-related conditions were 22% below the State average (an SR of 78**, 666 admissions). Both Central Northern Adelaide (with a standardised ratio (SR) of 89**, 591 admissions) and Southern Adelaide (39**, 75) Health Regions also had fewer admissions than expected.

In country SA, highly elevated ratios were recorded for Aboriginal males living in Northern & Far Western (an SR of 143**, 673 admissions) and Eyre (160**, 217), while South East had an SR of 9**, 91% fewer admissions than expected.

Table 4.31: Hospital admissions – Aboriginal males, alcohol-related conditions, by Health Region, South Australia, 2005/06-2006/07

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	591	3,375.9	89**
Northern sub-region	266	2,850.7	75**
Western sub-region	202	3,765.4	99
Central East sub-region	123	4,376.3	115
Southern Adelaide	75	1,483.2	39**
Urban Beaches District	33	1,666.9	44**
Hills District	0	0.0	0**
Outer Southern District	42	1,723.8	45**
Metropolitan Adelaide (excl. Gawler)	666	2,951.8	78**
Hills Mallee Southern	104	2,564.0	67**
South East	5	341.8	9**
Wakefield	114	4,168.1	110
Mid North	33	2,636.5	69*
Riverland	46	2,984.8	79
Eyre	217	6,082.3	160**
Northern & Far Western	673	5,424.6	143**
Country South Australia (incl. Gawler)	1,192	4,411.4	116**

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

Substantially higher than expected numbers of admissions were recorded for Aboriginal males with alcohol-related conditions in the SLAs of Adelaide (an SR of 330**, 87 admissions); Port Adelaide Enfield - Park (227**, 50) and - Inner (185**, 49); and Playford - Elizabeth (157**, 66) (Map 4.39).

SLAs with lower than expected ratios included Salisbury - South-East, - Central, - North-East and - Inner North; Tea Tree Gully - South; Playford - East Central; Mitcham - West; Marion - Central; Campbelltown - West; Charles Sturt - Inner West; and Onkaparinga - North Coast.

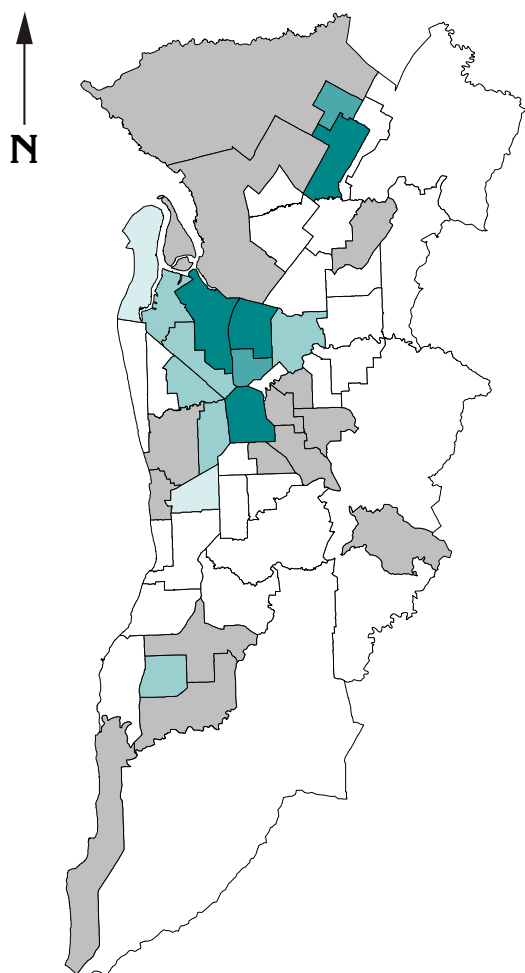
There were no admissions recorded in the following SLAs: Adelaide Hills - Ranges; Campbelltown - East; Charles Sturt - Coastal; Holdfast Bay - South; Marion - South; Mitcham - Hills and - North-East; Onkaparinga - Hills and - Reservoir; Playford - Hills; Tea Tree Gully - Central and - Hills; Unley - West; and Walkerville.

Country SA

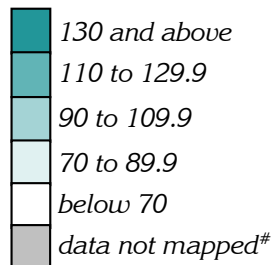
In country SA, highly elevated ratios were recorded for Aboriginal males in Yorke Peninsula - North (an SR of 436**, 95 admissions), Unincorporated West Coast (344**, 51), Coober Pedy (341**, 80), Port Augusta (224**, 423), Whyalla (204**, 109), Ceduna (176**, 101), Loxton Waikerie - East (175*, 13), Unincorporated Far North (168*, 23) and Renmark Paringa - Renmark (141, 10).

Lower than expected ratios were recorded for a majority of the remaining SLAs (with five or more admissions).

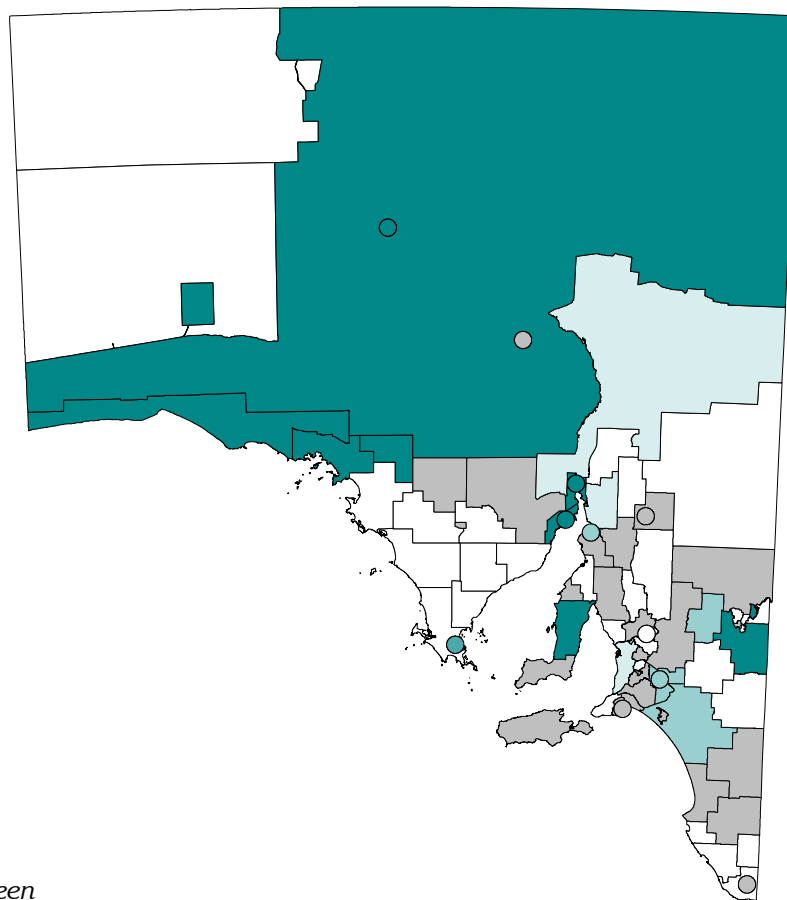
Map 4.39 and Map 4.40: Hospital admissions: Aboriginal males, alcohol-related conditions, Metropolitan Adelaide and country SA, 2005/06-2006/07



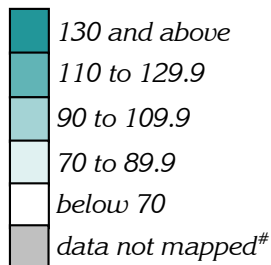
Standardised ratio (as an index)*, by SLA



Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Indigenous admissions – smoking-related conditions

Smoking causes the greatest burden of disease experienced by all Australians and significantly, Aboriginal and Torres Strait Islander peoples (5). Smoking tobacco is influenced by a combination of health and social determinants and individual risk and protective factors. The highly addictive nature of tobacco contributes significantly to ongoing use.

The knowledge of the health effects of tobacco use amongst Indigenous people is generally good, but there is a lack of knowledge about specific harmful effects: tobacco's link to diabetes, tobacco-causing cancers apart from lung cancer; and issues around the harmful effects of environmental tobacco smoke, especially during pregnancy (19, 20).

Admission rates for females were higher than those for males in the 15 to 24 and 25 to 34 year age groups, with rates for men higher in all other age groups, other than at 55 to 64 years, where rates were almost the same (Figure 4.61). For both men and women, rates were highest in the 55 to 64 year age group.

Admissions for smoking-related conditions varied strongly by socioeconomic status (Figure 4.62). For both males and females, there was a marked socioeconomic gradient, with rates for males in the lowest socioeconomic group more than two times higher than in the highest socioeconomic group (a rate ratio of 2.25); for females, the differential was higher, at 3.42.

When analysed by remoteness, admissions for smoking-related conditions (Figure 4.63) showed higher rates in the Very Remote areas: one and a half times the rate in the Major Cities areas for males, and almost two and a half times for females. However, the highest rates for males were found in the Outer Regional areas.

Admissions of Aboriginal people for smoking-related conditions, South Australia, 2005/06-2006/07

Figure 4.61: Admissions, by age and sex

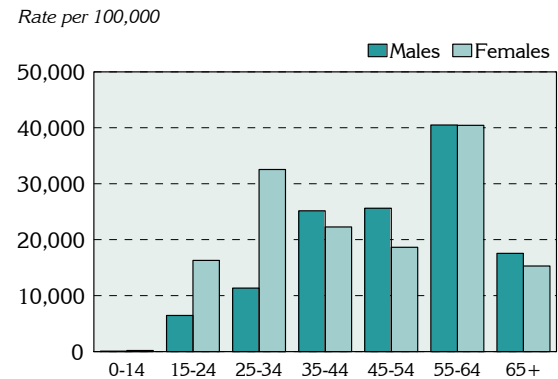


Figure 4.62: Admissions, by socioeconomic status

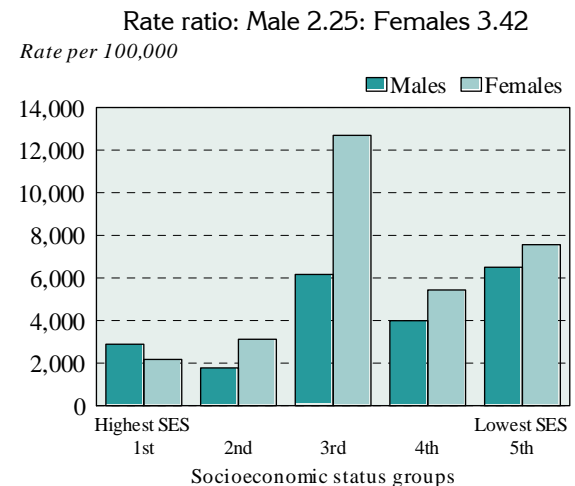
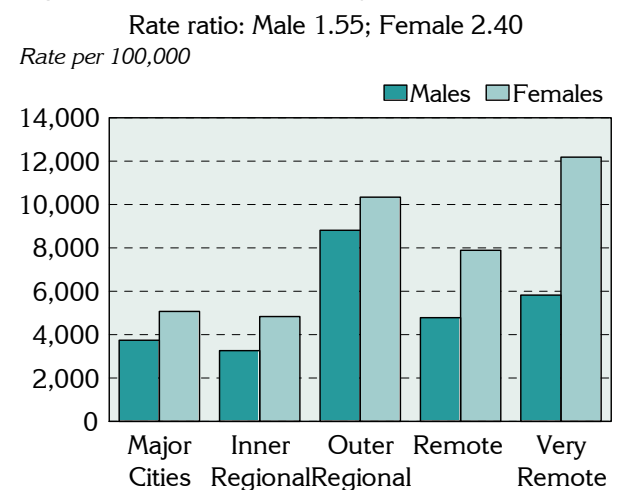


Figure 4.63: Admissions, by remoteness



Hospital admissions: Aboriginal males, smoking-related conditions, 2005/06-2006/07

In Metropolitan Adelaide, there were 30% fewer admissions of Aboriginal males for smoking-related conditions than expected from the State rate (an SR of 70**, 831 admissions). Central Northern Adelaide and Southern Adelaide Health Regions also had ratios below the State average (with SRs of 78** and 44**, respectively).

Overall, there were 23% more admissions in country SA than expected (an SR of 123**, 1,794 admissions). Eyre had more than twice the expected number of admissions (an SR of 231**, 440 admissions), while ratios in Northern & Far Western and Wakefield were also elevated.

Table 4.32: Hospital admissions – Aboriginal males, smoking-related conditions, by Health Region, South Australia, 2005/06-2006/07

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	716	4,149.3	78**
Northern sub-region	380	4,107.6	77**
Western sub-region	239	4,403.0	83**
Central East sub-region	97	3,764.7	71**
Southern Adelaide	115	2,324.1	44**
Urban Beaches District	44	2,256.1	42**
Hills District	2	320.7	6**
Outer Southern District	69	2,906.2	54**
Metropolitan Adelaide (excl. Gawler)	831	3,742.6	70**
Hills Mallee Southern	151	3,680.6	69**
South East	50	3,382.7	63**
Wakefield	191	6,307.7	118*
Mid North	55	4,375.6	82
Riverland	70	4,457.5	84
Eyre	440	12,331.8	231**
Northern & Far Western	837	6,763.1	127**
Country South Australia (incl. Gawler)	1,794	6,552.2	123**

¹ Rate is the number of admissions per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

SLAs with the most highly elevated numbers of admissions included Port Adelaide Enfield - Park (an SR of 171**, 56 admissions), Adelaide (171**, 54) and Playford - Elizabeth (149**, 91) (Map 4.41).

Fewer admissions than expected were recorded in Playford - East Central; Marion - Central and - North; Tea Tree Gully - South; Onkaparinga - Hackham, - South Coast and - Morphett; Salisbury - North-East, - Central, - Inner North and - South-East; Charles Sturt - Inner West and - Inner East; West Torrens - West and - East; Prospect; and Mitcham - West.

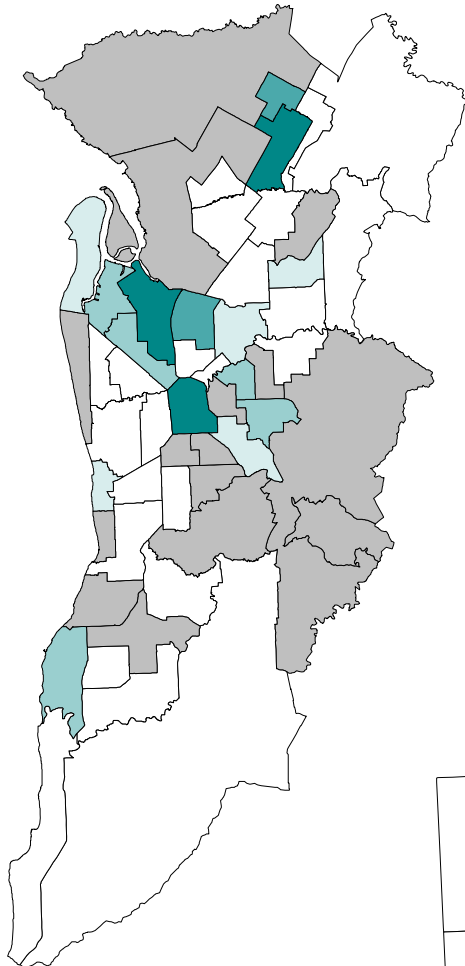
Areas with no admissions were Campbelltown - East; Onkaparinga - Hills and - Reservoir; Playford - Hills; Tea Tree Gully - Hills; and Walkerville.

Country SA

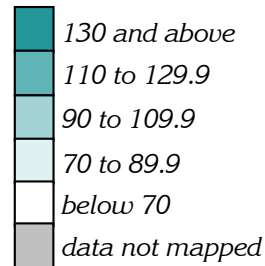
In country SA, highly elevated ratios for admissions of Aboriginal males for smoking-related conditions were recorded for Yorke Peninsula - North (an SR of 505**, 155 admissions), Unincorporated West Coast (445**, 97), Ceduna (313**, 248), Whyalla (243**, 174) and Port Augusta (212**, 559).

Ratios were lower than the expected in the SLAS of Anangu Pitjantjatjara, Mount Barker - Central, Mid Murray, Naracoorte and Lucindale, Lower Eyre Peninsula, Mallala, Copper Coast, Gawler and Wattle Range - West.

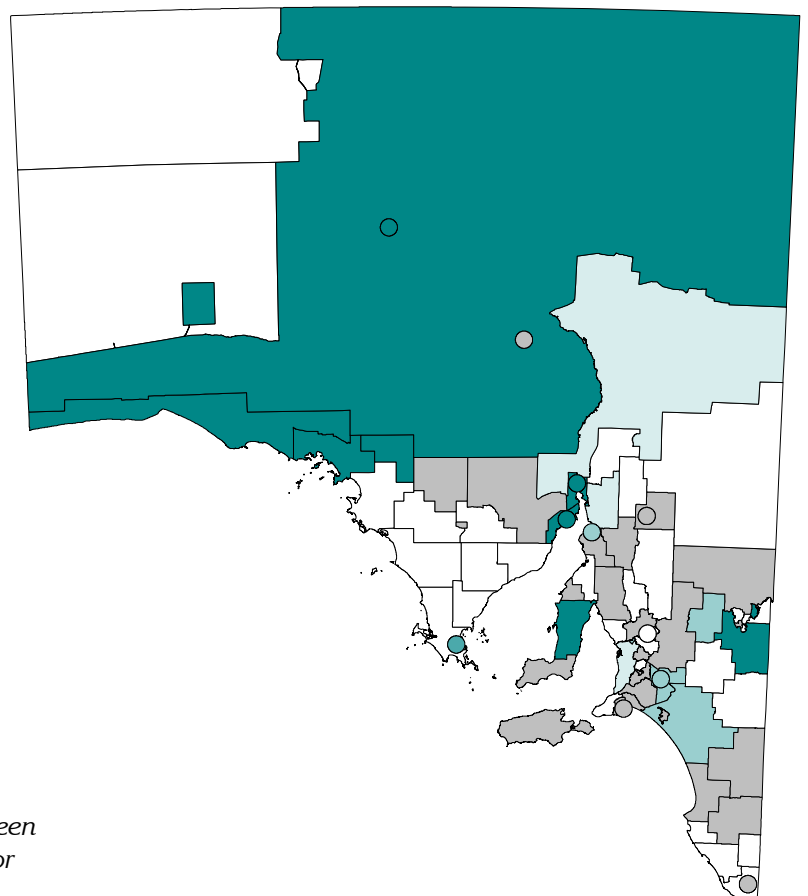
Map 4.41 and Map 4.42: Hospital admissions for smoking-related conditions: Aboriginal males, Metropolitan Adelaide and country SA, 2005/06-2006/07



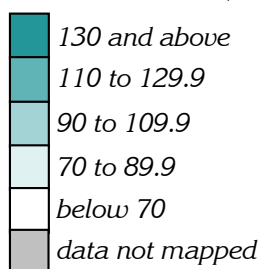
Standardised ratio (as an index)*, by SLA



Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Potentially avoidable hospitalisations

An indicator that is currently of interest to decision-makers in assessing the overall adequacy, efficiency and quality of primary health care within the broader health system is 'Potentially avoidable hospitalisations'. The term has been used to represent a range of conditions for which hospitalisation should be able to be avoided, because the disease or condition has been prevented from occurring, or because individuals have had access to timely and effective primary care, thus avoiding a hospital admission.

This report addresses the level and extent of regional variation in South Australia in a sub-set of potentially avoidable hospitalisations, namely those arising from Ambulatory Care-Sensitive (ACS) conditions. ACS conditions are those for which hospitalisation is considered potentially avoidable through preventive health care and early disease management, usually delivered in a primary care setting, for example by a general medical practitioner, or by staff at a community health centre.

Potentially avoidable hospitalisations accounted for a notably higher proportion of all admissions for males (11.0% of all admissions of males) than was the case for females (9.5%): however, the rate of avoidable admissions per 100,000 population was almost exactly the same for males and females, as shown by the rate ratio of 1.00 (Table 4.33).

The largest differentials in rates for males and females, and with large numbers of admissions, were for diabetes complications (32% higher admission rate for males), angina (27%), convulsions and epilepsy (25%) and cellulitis (26%). The admission rate for dehydration and gastroenteritis was markedly (31%) lower for males than for females.

In this section, data are shown for total potentially avoidable hospitalisations from ACS conditions, and for those for diabetes complications.

Table 4.33: Potentially avoidable hospitalisations¹ by sub-category, condition and sex, South Australia, 2005/06 and 2006/07

Sub-category and condition	Males		Females		RR M:F ⁴
	Number ²	Rate ³	Number ²	Rate ³	
Vaccine-preventable	573	74.0	432	54.4	1.36
Influenza and pneumonia	436	56.3	357	44.9	1.25
Other vaccine preventable diseases	140	18.1	75	9.4	1.91
Chronic	15,574	2,012.0	14,394	1,813.2	1.11
Iron deficiency anaemia	703	90.8	1,373	172.9	0.53
Diabetes complications	7,333	947.4	5,683	715.8	1.32
Nutritional deficiencies	4	0.5	2	0.3	2.05
Rheumatic heart disease	70	9.0	132	16.6	0.54
Hypertension	177	22.8	358	45.1	0.51
Congestive cardiac failure	1,976	255.2	1,861	234.4	1.09
Angina	1,670	215.7	1,344	169.3	1.27
Chronic obstructive pulmonary disease	2,871	370.8	2,682	337.9	1.10
Asthma	1,949	251.8	1,916	241.4	1.04
Acute	10,496	1,356.0	12,563	1,582.5	0.86
Dehydration and gastroenteritis	1,875	242.2	2,791	351.5	0.69
Convulsions and epilepsy	1,370	177.0	1,127	142.0	1.25
Ear, nose and throat infections	1,829	236.2	1,763	222.0	1.06
Dental conditions	2,286	295.3	2,417	304.5	0.97
Perforated/bleeding ulcer	262	33.8	205	25.8	1.31
Appendicitis (with generalised peritonitis)	139	17.9	115	14.5	1.24
Cellulitis	1,417	183.0	1,154	145.4	1.26
Pyelonephritis (includes urinary tract infections)	1,077	139.1	2,450	308.6	0.45
Pelvic inflammatory disease	382	48.1	..
Gangrene	252	32.5	166	20.8	1.56
Total avoidable hospitalisations	26,494	3,422.7	27,260	3,434.0	1.00

¹ Admissions resulting from ACS conditions

² Number is the average number of admissions over the two years 2005/06 and 2006/07

³ Rate per 100,000 population

⁴ RR M:F is the ratio of the rate for males to that for females

Potentially avoidable hospitalisations – all ACS conditions

Potentially avoidable hospitalisations for ACS conditions can be used as an indicator to assess the overall adequacy, efficiency and quality of primary health care within the broader health system.

Analyses at the area level may assist as a tool to monitor need; as a performance indicator of variations in access to, or the quality of, primary care; or in allocating limited resources among communities. The use of this concept in this way should be predicated by the recognition that many different factors contribute to hospitalisation rates. These include the age, ethnicity and sex of patients; patient-related socioeconomic factors (ethnicity, income and level of education); disease incidence, prevalence and severity; patient compliance with indicated treatment; perceived health need and care-seeking behaviour; access to care; availability of care including supply of primary care practitioners, hospital bed availability; physician practice style; and whether care at home is feasible for reasons unrelated to health status or provision.

Rates of potentially avoidable hospitalisations for ACS conditions were higher for males than for females at the youngest and oldest ages, with by far the highest rates in the two oldest age groups shown (Figure 4.64).

There were strong socioeconomic gradients evident for both males and females in rates of potentially avoidable hospitalisations, with rates just over 50% higher in the lowest SES areas compared with the highest SES areas (Figure 4.65).

Rates also varied substantially with remoteness, being 65% higher in the Very Remote areas compared with the Major Cities areas for males, and 93% higher for females (Figure 4.66).

Potentially avoidable hospitalisations – all conditions, 2005/06 and 2006/07

Figure 4.64: By age and sex

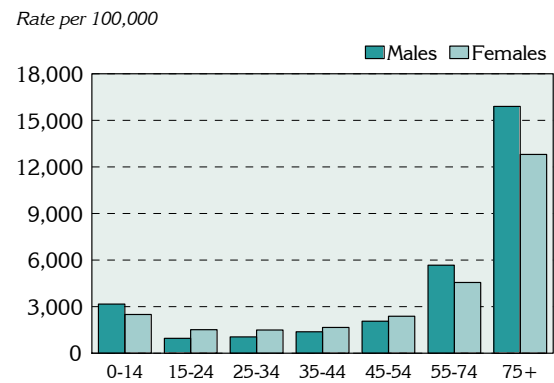


Figure 4.65: By socioeconomic status and sex

Rate ratio: Male 1.52; Female 1.56

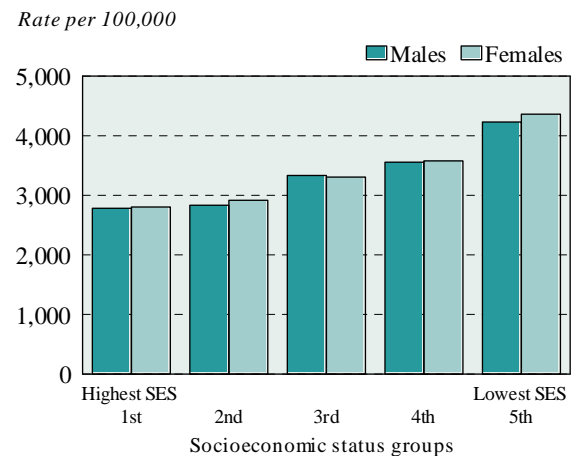
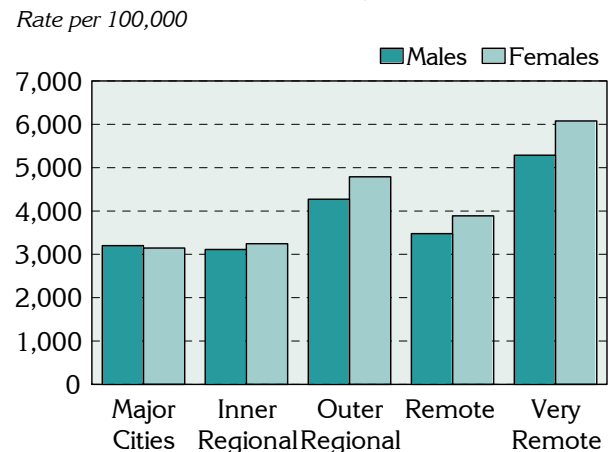


Figure 4.66: By remoteness and sex

Rate ratio: Male 1.65; Female 1.93



Potentially avoidable hospitalisations of males – all ACS conditions, 2005/06 and 2006/07

There were fewer male admissions for potentially avoidable hospitalisations from ACS conditions than were expected from the State rate in both Central Northern Adelaide and Southern Adelaide Health Regions (SRs of 92** and 95**, respectively). Overall, an estimated 17,352 admissions of males living in Metropolitan Adelaide were potentially avoidable.

There were 23% more admissions in country SA than expected (an SR of 123**, 1,794 admissions). Eyre had more than twice the expected number (an SR of 231**, 440 admissions).

Table 4.34: Potentially avoidable hospitalisations¹ of males – all conditions, by Health Region, South Australia, 2005/06 and 2006/07

Health Region	Number ²	Rate ³	SR ⁴
Central Northern Adelaide	12,057	3,166.0	92**
Northern sub-region	5,620	3,610.5	105**
Western sub-region	3,337	2,985.1	87**
Central East sub-region	3,100	2,734.1	80
Southern Adelaide	5,296	3,243.2	95**
Urban Beaches District	2,363	3,266.4	95
Hills District	1,022	2,745.5	80
Outer Southern District	1,911	3,556.7	104
Metropolitan Adelaide (excl. Gawler)	17,352	3,189.1	93
Hills Mallee Southern	2,011	3,047.2	89
South East	1,087	3,444.5	101
Wakefield	1,963	3,518.3	103
Mid North	884	4,962.6	145**
Riverland	703	4,007.7	117**
Eyre	695	3,869.2	113**
Northern & Far Western	1,198	5,138.5	150**
Country South Australia (incl. Gawler)	8,540	3,713.7	109**

¹ Admissions resulting from ACS conditions

² Average number of admissions over the two years 2005/06 and 2006/07

³ Rate is the age standardised rate per 100,000 population

Metropolitan Adelaide

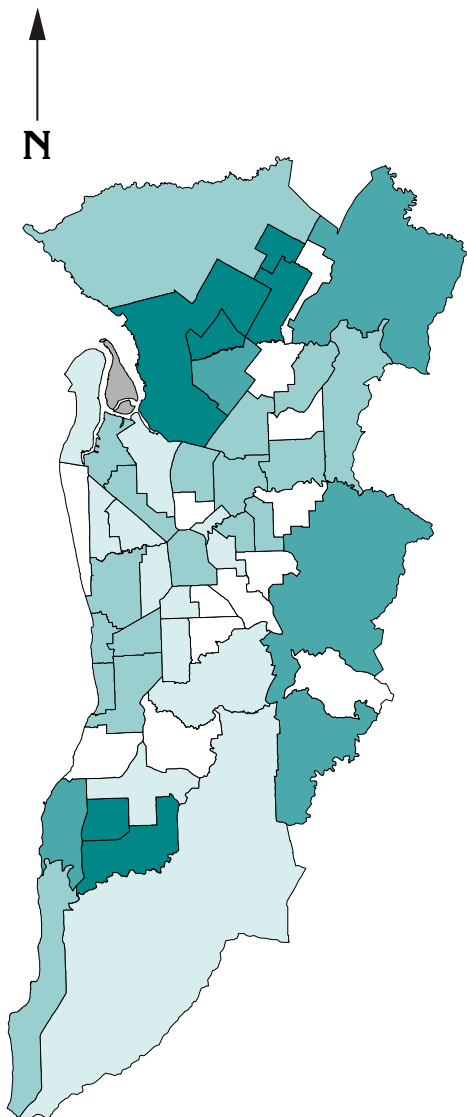
The distribution of potentially avoidable admissions (Map 5.43) reflects aspects of the pattern of socioeconomic disadvantage as shown by the IRSD (Map 4.43). Highly elevated ratios were in the outer north and south SLAs of Playford - Elizabeth (an SR of 148**, 655 admissions), - West Central (146**, 282) and - Hills (111, 55); Salisbury Balance (134**, 188), - Inner North (124**, 395) and - Central (110*, 465); Onkaparinga - Hackham (125**, 261), - Morphett (122**, 446) and - North Coast (113*, 359); and Adelaide Hills - Ranges (111).

The lowest ratios were in the more advantaged SLAs of Burnside - North-East (an SR of 57**, 223 admissions) and - South-West (62**, 246); Charles Sturt - Coastal (63**, 372); Prospect (63**, 199); Marion - South (71**, 205); Adelaide Hills - Central (73**, 149); Playford - East Central (75**, 212); Campbelltown - East (75**, 351); Unley - East (75**, 244); Mitcham - North-East (75**, 211); Tea Tree Gully - Central (76**, 288); and Onkaparinga - Reservoir (79**, 295).

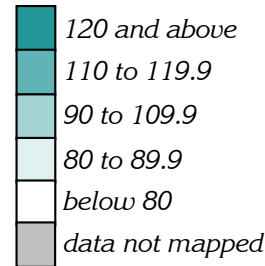
Country SA

The highest ratios were located in the north of the State (including all towns other than Roxby Downs) and in the Mallee/Upper South East. SLAs included Unincorporated West Coast, with nearly eight times the number of these admissions than expected (an SR of 755**, 44 admissions); Port Augusta (195**, 442); Ceduna (186**, 116); Coober Pedy (178**, 74); Unincorporated Far North (171**, 51); Orroroo/Carrieton (164**, 37); The Coorong (161**, 174); Peterborough (160**, 68); Mount Remarkable (157**, 97); Unincorporated Flinders Ranges (155*, 26); Port Pirie Districts - City (152**, 389) and Balance (140**, 96); Berri & Barmera - Berri (147**, 172); and Tatiara (141**, 171). SLAs with the lowest ratios were Anangu Pitjantjatjara (an SR of 22**, 7 admissions); Kimba (53*, 12); Grant (54**, 73); Wattle Range - East (56**, 31); Mount Barker Balance (56**, 74); Karoonda East Murray (59*, 14); Robe (60*, 17); and Yankalilla (62**, 57).

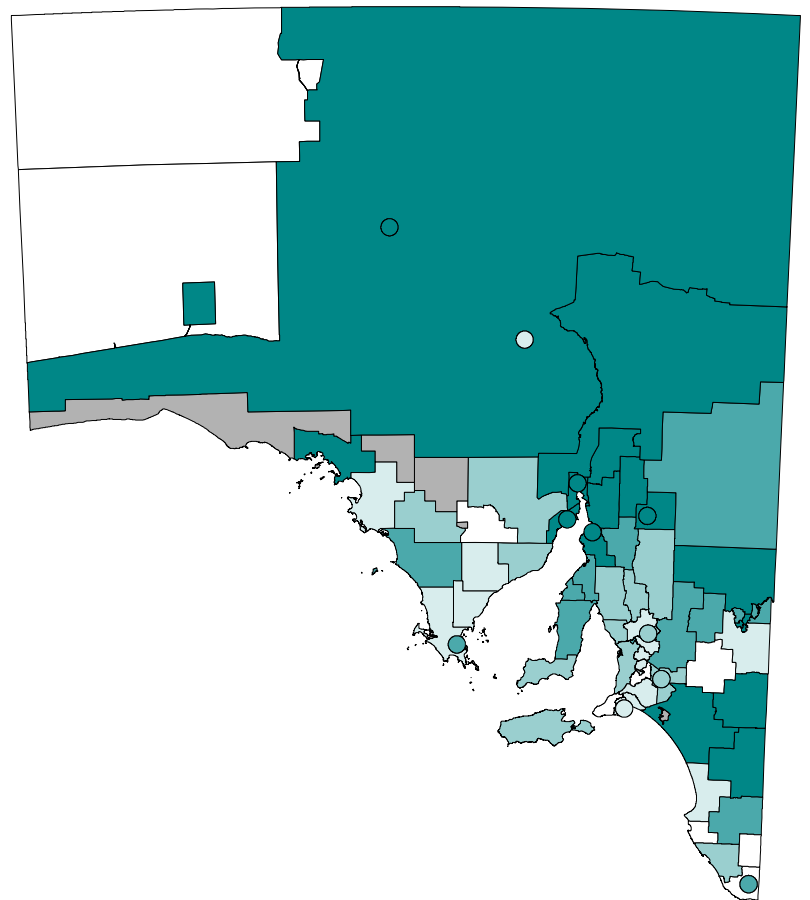
Map 4.43 and Map 4.44: Potentially avoidable hospitalisations, males, all conditions, Metropolitan Adelaide and country SA, 2005/06 and 2006/07



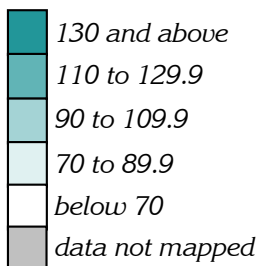
Standardised ratio (as an index)*, by SLA



Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Potentially avoidable hospitalisations – diabetes’ complications

Complications of diabetes mellitus can arise from poor blood glucose control, and may be broadly classified as resulting from small (microvascular) or large blood vessel (macrovascular) disease. Microvascular complications include neuropathy (nerve damage), nephropathy (kidney disease) and vision disorders (e.g., retinal damage, glaucoma, cataract and corneal disease). Macrovascular complications include heart disease, stroke and peripheral vascular disease (which can lead to ulcers, gangrene and amputation). Other complications of diabetes include infections, metabolic difficulties, and impotence in men.

Rates of potentially avoidable hospitalisations for diabetes’ complications were higher for males than for females across all ages except for the 15 to 24 year age group, with the highest rates for both men and women in the two oldest age groups shown (Figure 4.67).

There were strong socioeconomic gradients evident for both males and females, in rates of potentially avoidable hospitalisations for diabetes’ complications, with rates in the lowest SES areas more than twice those in the highest SES areas (Figure 4.68).

Rates varied with remoteness, although the gradient was not consistent, with rates 20% higher in the Very Remote areas compared with the Major Cities areas for males, and 14% higher for females (Figure 4.69).

Potentially avoidable hospitalisations – diabetes’ complications, 2005/06 and 2006/07

Figure 4.67: By age and sex

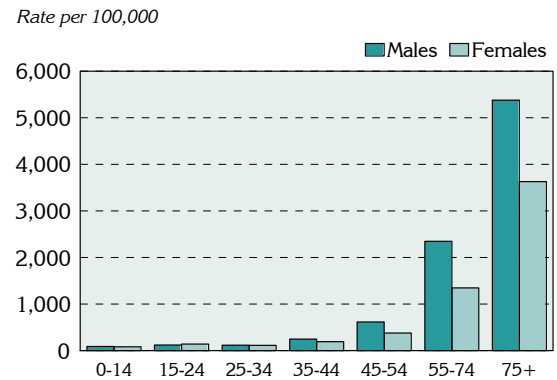


Figure 4.68: By socioeconomic status and sex

Rate ratio: Male 2.04; Female 2.28

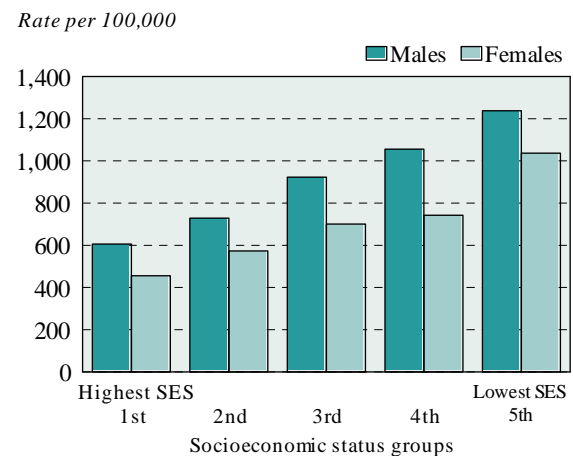
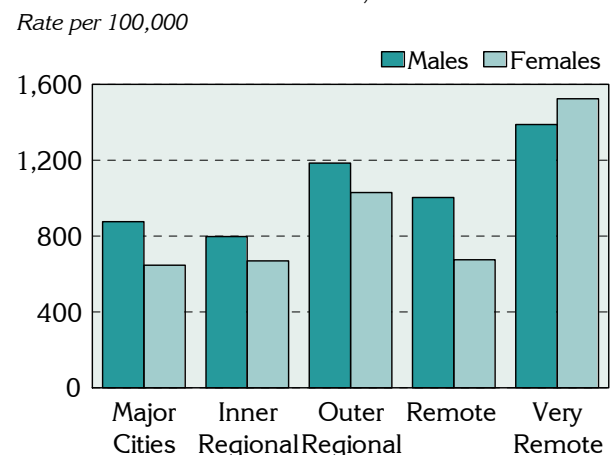


Figure 4.69: By remoteness and sex

Rate ratio: Male 1.20; Female 1.14



Potentially avoidable hospitalisations of males – diabetes’ complications, 2005/06 and 2006/07

There were fewer male admissions for potentially avoidable hospitalisations from diabetes’ complications than were expected from the State rate, in both the Central Northern Adelaide and Southern Adelaide Health Regions (with standardised ratios (SRs) of 92 and 90, respectively). Overall, an estimated 4,689 admissions of males with diabetes’ complications living in Metropolitan Adelaide were considered to be potentially avoidable.

In country SA, there were 6% more male admissions than expected from the State rate (an SR of 106**, 2,348 admissions). Males in Northern & Far Western Health Region had one and a third times the expected number of admissions (an SR of 167**, 345 admissions), while the ratio in the Mid North was elevated by 49%.

Table 4.35: Potentially avoidable hospitalisations¹ – diabetes complications, by Health Region, South Australia, 2005/06 and 2006/07

Health Region	Number ²	Rate ³	SR ⁴
Central Northern Adelaide	3,289	871.6	92
Northern sub-region	1,458	994.2	105
Western sub-region	1,045	905.6	96
Central East sub-region	786	681.7	72
Southern Adelaide	1,400	856.4	90
Urban Beaches District	638	855.4	90
Hills District	228	607.3	64
Outer Southern District	535	1,039.5	110*
Metropolitan Adelaide (excl. Gawler)	4,689	867.0	92
Hills Mallee Southern	524	755.8	80
South East	290	947.6	100
Wakefield	546	946.0	100
Mid North	264	1,407.6	149**
Riverland	187	1,062.4	112
Eyre	194	1,096.4	116*
Northern & Far Western	345	1,582.0	167**
Country South Australia (incl. Gawler)	2,348	1,006.2	106**

¹ Admissions resulting from ACS conditions

² Average number of admissions over the two years 2005/06 and 2006/07

³ Rate is the age standardised rate per 100,000 population

Metropolitan Adelaide

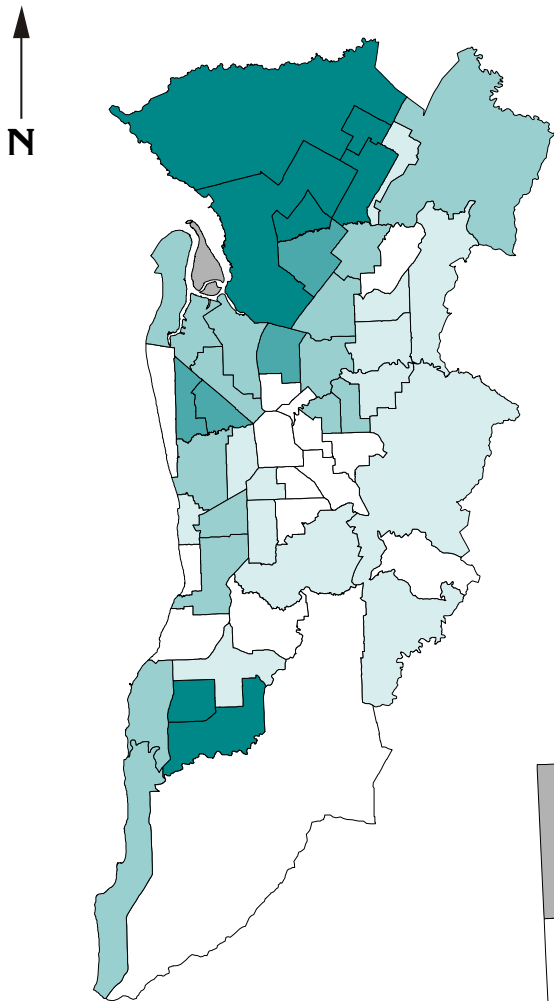
The distribution of potentially avoidable admissions for diabetes’ complications (Map 4.45) was highly consistent with the distribution of the socioeconomically disadvantaged population, as shown by the IRSD (Map 3.9), with highly elevated ratios in the outer north and outer south, and very low ratios in higher SES areas. The highest were in Playford - West Central (an SR of 180**, 82 admissions), - Elizabeth (153**, 183), and - West (134*, 51); Salisbury - Inner North (153**, 106) and Balance (138*, 40); and Onkaparinga - Morphett (145**, 141) and - Hackham (142**, 75). Rates were lower than expected in the SLA of Adelaide and in a number of SLAs immediately to the north, south, south-east, and in a number of middle and outer suburbs.

Country SA

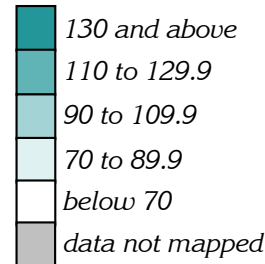
The highest ratios for males were predominantly found in northern and western SLAs. The highest rate was in Unincorporated West Coast, although the actual number of admissions was low (an SR of 873, 10 admissions) (Map 4.46). Other areas with higher than expected admissions were Peterborough (an SR of 224**, 29 admissions), Port Augusta (222**, 131), Orroroo/Carrieton (198*, 14), Ceduna (190**, 31), Unincorporated Far North (181*, 15), Unincorporated Flinders Ranges (176, 7), Whyalla (163**, 157), Port Pirie Districts Balance (163**, 32), Barunga West (161**, 29), Berri & Barmera - Berri (158**, 49), The Coorong (146*, 45), Elliston (144, 8), Le Hunte (141, 10), Roxby Downs (140, 10), Loxton Waikerie - West (139*, 36), Port Pirie Districts - City (137**, 100), Mount Gambier (136**, 143), Port Lincoln (134**, 84) and Gawler (132** 124).

Much lower than expected ratios were recorded for Mount Barker - Balance; Streaky Bay; Yankalilla; Adelaide Hills Balance and - North; Light; Wattle Range - East; Naracoorte and Lucindale; Grant; Barossa - Tanunda and - Angaston; Cleve; Loxton Waikerie - East; Alexandrina - Coastal; and Mid Murray.

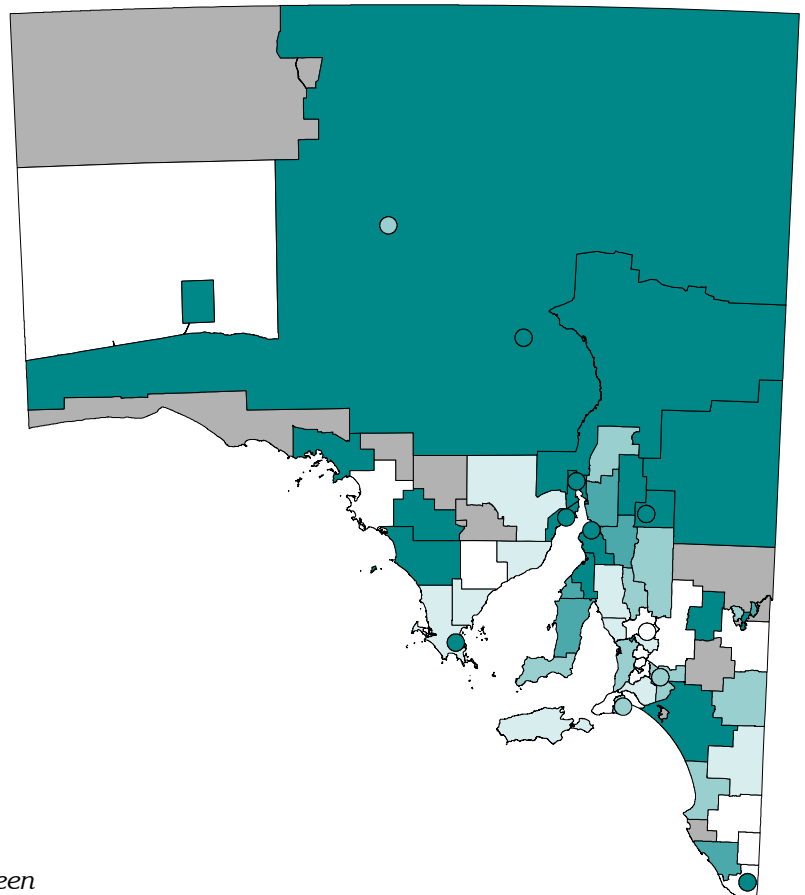
Map 4.45 and Map 4.46: Potentially avoidable hospitalisations of males, diabetes' complications, Metropolitan Adelaide and country SA, 2005/06 and 2006/07



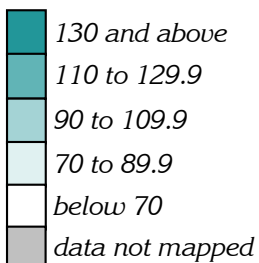
Standardised ratio (as an index)*, by SLA



Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

5. Prevalence of selected chronic diseases

Estimates (synthetic predictions) of the prevalence in the population of selected chronic diseases and associated risk factors (next section) have been produced for a majority¹ of Statistical Local Areas (SLAs) in South Australia, using data collected in the 2004-05 Australian Bureau of Statistics (ABS) National Health Survey (NHS). A description of the process used is in the box, opposite.

Remote areas were not included in the NHS, so estimates have not been made for the following remote SLA: Anangu Pitjantjatjara, Ceduna, Coober Pedy, Le Hunte, Maralinga Tjarutja, Streaky Bay, Unincorporated Yorke, Unincorporated Mallee, Unincorporated Lincoln, Unincorporated West Coast and Unincorporated Far North.

Synthetic predictions

A synthetic prediction can be interpreted as the likely value for a 'typical' area with those characteristics: the SLA is the area level of interest for this project. This work was undertaken by the ABS, as they hold the NHS unit record files: the small area data were compiled by PHIDU.

The approach used was to undertake an analysis of the survey data for Australia to identify relationships in the NHS data between the variables that we wished to predict at the area level (e.g. prevalence of chronic conditions and risk factors – these are the outcome variables) and the data we have at the area level (e.g. socioeconomic status, use of health services – these are the predictors). The relationships between the predictors and the outcome variables in the NHS form a model. 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, sex and diagnosis),
- the number of visits to a general medical practitioner, and
- socioeconomic status (as indicated by Census data, or for recipients of government pensions and benefits).

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 from those for Australia as a whole.

¹ The NHS sample includes the majority of people living in private households, but excludes the most remote areas of Australia. Thus it has not been possible to produce estimates for SLAs with relatively high proportions of their population in these remote areas.

Mental and behavioural problems

A diverse range of social, environmental, biological and psychological factors can impact on an individual's mental health, and lead to problems such as anxiety, depression, or psychoses.

Factors that can contribute to depression in men include use of drugs and alcohol; physical health problems; employment problems; social isolation; or a significant change in living arrangements (e.g., separation or divorce). Studies show that men are at greater risk of their depression going unrecognised and untreated compared to women (21). This may be because men may defer getting help for health problems because social roles may make it hard for them to acknowledge they have a health problem, especially a mental health problem. Men may also try to manage their symptoms by using alcohol and other drugs, which make the symptoms worse (21).

The estimates were based upon information reported to interviewers by respondents to the 2004-05 ABS National Health Survey.

Males reported lower rates than females of mental and behavioural problems in all but the youngest (with a markedly higher rate) and oldest (with a similar rate) age groups shown (Figure 5.1). For both males and females, the prevalence estimates increased until the 45 to 54 year age group, before decreasing in the 55 to 64 and 65 to 74 age groups, in particular for males. Male rates increased again, substantially, in the 75 year and older age group.

The pattern, shown in Figure 5.2, of increasing mental and behavioural problems with increasing disadvantage is evident for both males and females, with rates in the lowest SES group 46% higher for males, and 40% higher for females, than in the highest SES group. Male rates were below those for females across all SES groups.

The pattern across the remoteness classes, although not consistent, showed an overall difference in rates of mental and behavioural disorders of 20% for males and 14% for females (Figure 5.3).

Prevalence of mental and behavioural problems, South Australia, 2004-05

Figure 5.1: By age and sex

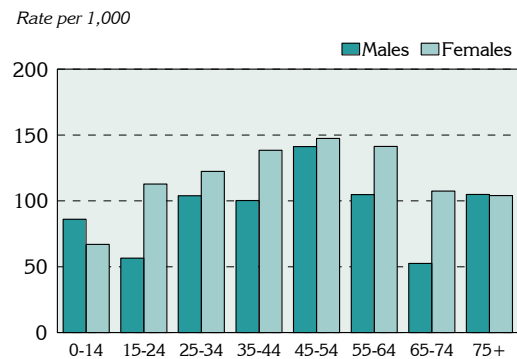


Figure 5.2: By socioeconomic status and sex

Rate ratio: Male 1.46; Female 1.40

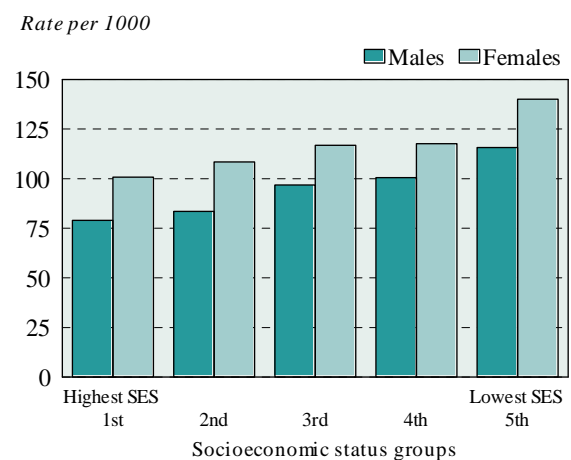
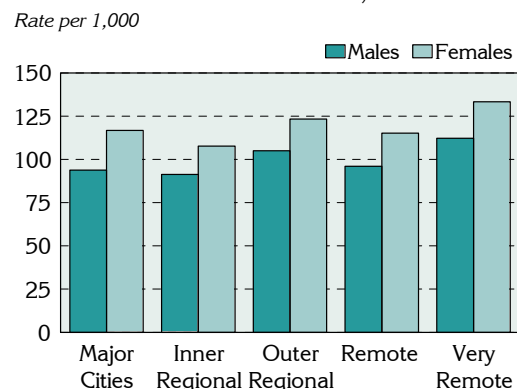


Figure 5.3: By remoteness and sex

Rate ratio: Male 1.20; Female 1.14



Estimated number of males, mental and behavioural problems, 2004/05

Both Central Northern Adelaide (with a standardised ratio (SR) of 99, 35,897 males) and Southern Adelaide (an SR of 97, 14,869 males) Health Regions had near-average levels of males reporting mental and behavioural problems. The greatest variation in Metropolitan Adelaide was between the Outer Southern and Hills Districts.

In country SA, Mid North and Northern & Far Western Health Regions had markedly more males reporting these conditions, with SRs of 120** and 117**, respectively.

Table 5.1: Estimates of males with mental and behavioural problems by Health Region, South Australia, 2004/05

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	35,897	94.4	99
Northern sub-region	16,593	99.6	105**
Western sub-region	10,383	100.6	106**
Central East sub-region	8,921	80.7	85**
Southern Adelaide	14,869	92.0	97**
Urban Beaches District	6,077	91.5	96**
Hills District	2,905	75.8	80**
Outer Southern District	5,887	103.4	109**
Metropolitan Adelaide (excl. Gawler)	50,766	93.6	99**
Hills Mallee Southern	5,749	95.5	101
South East	2,867	87.7	92
Wakefield	5,042	97.1	102
Mid North	1,819	114.2	120**
Riverland	1,730	100.9	106*
Eyre	1,352	98.3	103
Northern & Far Western	2,491	111.1	117**
Country South Australia (incl. Gawler)	21,050	98.3	104**

¹ Rate is the number of males with mental and behavioural problems per 1,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The most highly elevated ratios for males at the SLA level in Metropolitan Adelaide (Map 5.1) were in Playford - Elizabeth (an SR of 149**, 1,691 males) and - West Central (147**, 872); Onkaparinga - North Coast (130**, 1,079) and - Hackham (125**, 819); and Port Adelaide Enfield - Park (126**, 887), - Port (123**, 637) and - Inner (122**, 1,095). The SLAs of Salisbury - Inner North (121**, 1414) and Adelaide (120**, 947) also had higher than expected ratios.

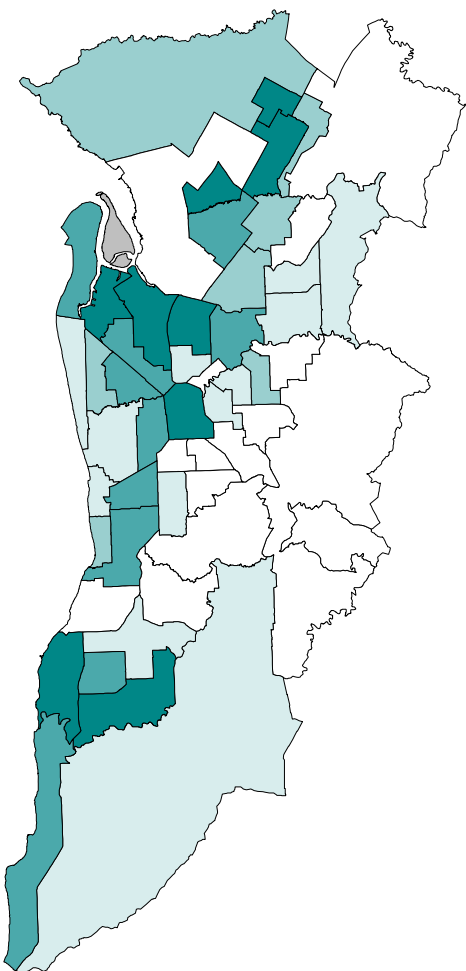
SLAs with lower than expected ratios included Burnside - North-East and South-West; Salisbury Balance; Mitcham - North-East and - Hills; Walkerville; Playford - Hills; Tea Tree Gully - North; Marion - South; Onkaparinga - Reservoir; Adelaide Hills - Central and - Ranges; Unley - East and - West; and Campbelltown - East.

Country SA

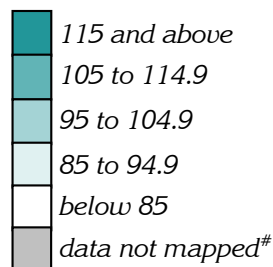
Several SLAs in country SA (Map 5.2) were estimated to have more males with mental and behavioural disorders than expected from the State rate: those with elevated ratios included Unincorporated Riverland (an SR of 198**, but just 14 males), Unincorporated Whyalla (183**, 22) and Peterborough (150**, 146). Other highly elevated ratios were in Port Augusta (128**, 879); Port Pirie Districts - City (127**, 832) and Balance (118*, 211); Mid Murray (127**, 543); Unincorporated Flinders Ranges (126*, 84); Copper Coast (125**, 664); Flinders Ranges (124**, 109); Barunga - West (121*, 161); Goyder (121**, 257); Yorke Peninsula - North (119**, 440) and - South (117*, 236); Whyalla (119**, 1,256); and Murray Bridge (118**, 1,003).

The lowest ratios recorded were in Roxby Downs; Barossa - Tanunda and - Barossa; and Adelaide Hills - North and Balance.

Map 5.1 and Map 5.2: Estimated number of males with mental and behavioural problems, Metropolitan Adelaide and country SA, 2004/05



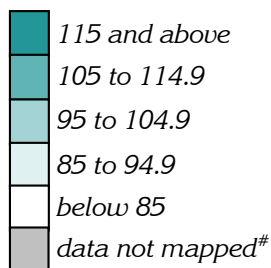
Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

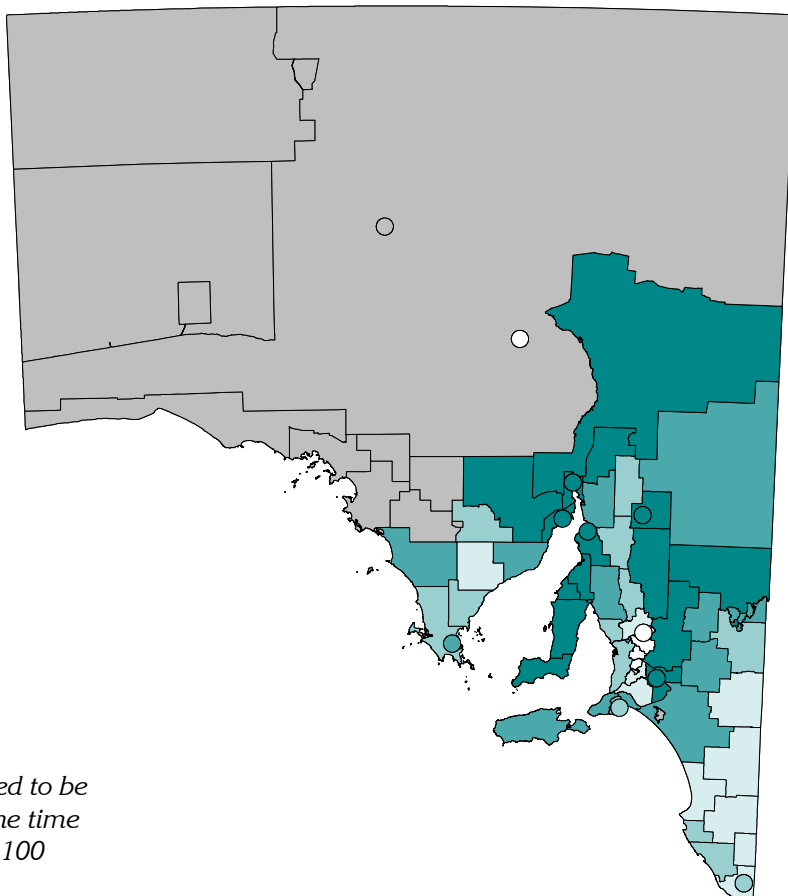
Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were estimated to be between one to four men in this category over the time period; or the SLA has a population of less than 100



Mood (affective) problems

A mood (affective) disorder is a condition characterised by distorted, excessive or inappropriate moods or emotions. They represent a group of mental health problems that include depression, mania, hypomania and bipolar affective disorder.

In the 2004-05 ABS National Health Survey, half (50%) of all persons reporting mental and behavioural problems had mood (affective) problems, and women were more likely than men to experience them.

The estimates were based upon information reported to interviewers by respondents to the 2004-05 ABS National Health Survey.

Figure 5.4 shows estimates of mood (affective) problems by age and sex. With the exception of the 45 to 54 year age group, male rates were lower than those for females. Rates increased by age group until 35 to 44 years for females and 45 to 54 years for males, before decreasing. There were no data recorded for males in the 65 to 74 age group. Data were not recorded for people aged 14 years and under.

For both males and females, there was a clear pattern of increased rates of mood (affective) problems with increasing socioeconomic disadvantage (Figure 5.5). For males, rates in the lowest SES group were 65% higher than the highest SES group, while for females, they were 33% higher. Across all SES groups female rates were higher than those for males.

There was minimal variation in the estimates across the remoteness classes, with male rates lower than those for females (Figure 5.6).

Prevalence of mood (affective) problems, South Australia, 2004-05

Figure 5.4: By age and sex

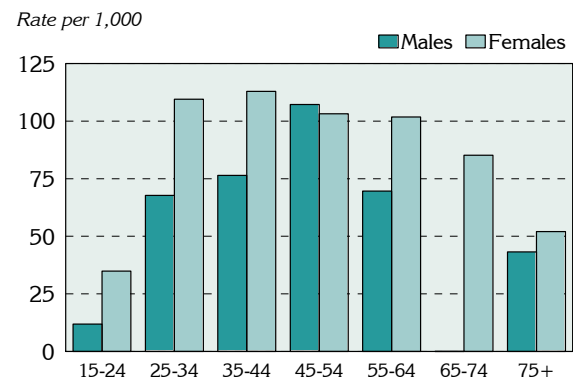


Figure 5.5: By socioeconomic status and sex

Rate ratio: Male 1.65; Female 1.33

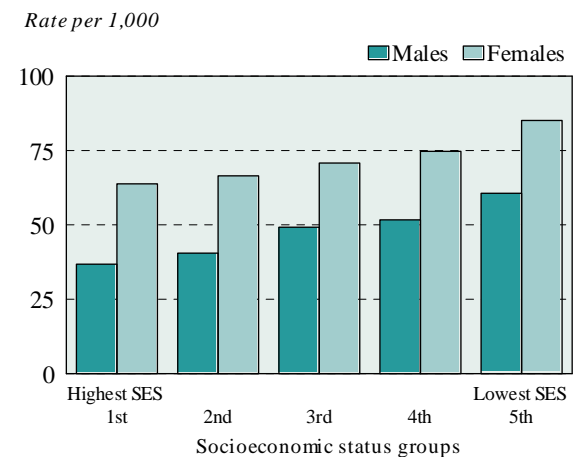
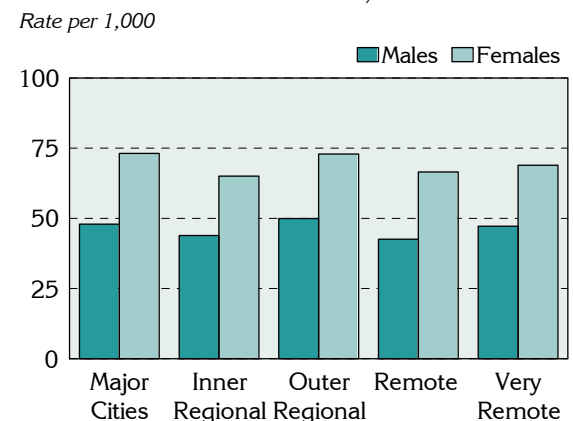


Figure 5.6: By remoteness and sex

Rate ratio: Male 0.99; Female 0.94



Estimated number of males with mood (affective) problems, 2004/05

Central Northern Adelaide Health Region (with a standardised ratio (SR) of 103**, 18,642 men) had slightly more than the expected number of males reporting mood (affective) problems. In Southern Adelaide Health Region (96, 7,416), there were slightly fewer than expected. In country SA, only Mid North and Northern & Far Western had elevated ratios.

Table 5.2: Estimates of males with mood (affective) problems by Health Region, South Australia, 2004/05

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	18,642	48.7	103**
Northern sub-region	8,299	50.7	107**
Western sub-region	5,618	53.6	113**
Central East sub-region	4,725	41.6	87**
Southern Adelaide	7,416	45.5	96**
Urban Beaches District	3,167	46.8	98
Hills District	1,264	32.8	69**
Outer Southern District	2,985	52.7	111**
Metropolitan Adelaide (excl. Gawler)	26,058	47.8	101
Hills Mallee Southern	2,774	46.7	98
South East	1,228	37.8	80**
Wakefield	2,409	47.2	99
Mid North	870	56.1	118**
Riverland	806	47.6	100
Eyre	598	44.4	93
Northern & Far Western	1,198	54.4	114**
Country South Australia (incl. Gawler)	9,883	46.9	99

¹ Rate is the number of males with mood (affective) problems per 1,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

There were estimated to be higher than expected numbers of males with mood (affective) disorders in Playford - Elizabeth (an SR of 166**, 874 men) and - West Central (162**, 431); Onkaparinga - North Coast (140**, 577) and - Hackham (126**, 407); Port Adelaide Enfield - Park (137**, 474), - Inner (132**, 586) and - Port (127**, 341); and Salisbury - Inner North (122**, 681) (Map 5.3).

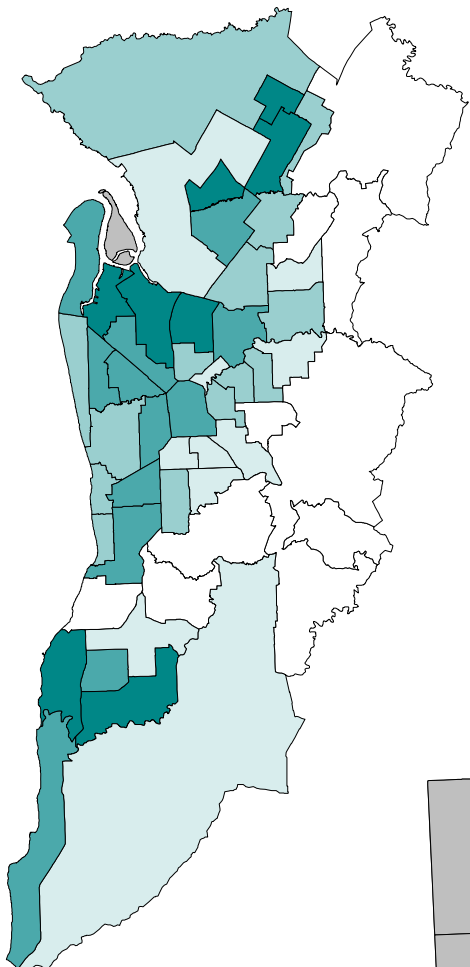
SLAs with the lowest ratios were Playford - Hills; Tea Tree Gully - North and - Hills; Burnside - North-East; Onkaparinga - Reservoir; Marion - South; Adelaide Hills - Central and - Ranges; and Mitcham - Hills.

Country SA

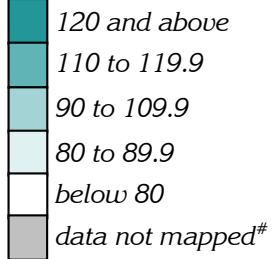
For country SA (Map 6.4), the highest ratios were recorded for Unincorporated Riverland (an SR of 173, 7 men), Unincorporated Whyalla (167, 11), Peterborough (152**, 73), Copper Coast (132**, 340), Port Pirie Districts - City (130**, 406), Port Augusta (126**, 429), Mid Murray (124**, 273), Whyalla (123**, 630), Murray Bridge (120**, 493), Yorke Peninsula - South (120*, 119), Flinders Ranges (120, 50) and Alexandrina - Coastal (120**, 301).

Lower than expected ratios were recorded in Roxby Downs; Adelaide Hills - North and Balance; Tatiara; Barossa - Barossa and - Tanunda; Naracoorte and Lucindale; Kimba; Mount Barker Balance; Robe; Grant; Unincorporated Pirie; and Lower Eyre Peninsula.

Map 5.3 and Map 5.4: Estimated number of males with mood (affective) problems, Metropolitan Adelaide and country SA, 2004/05



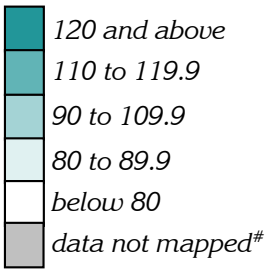
Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

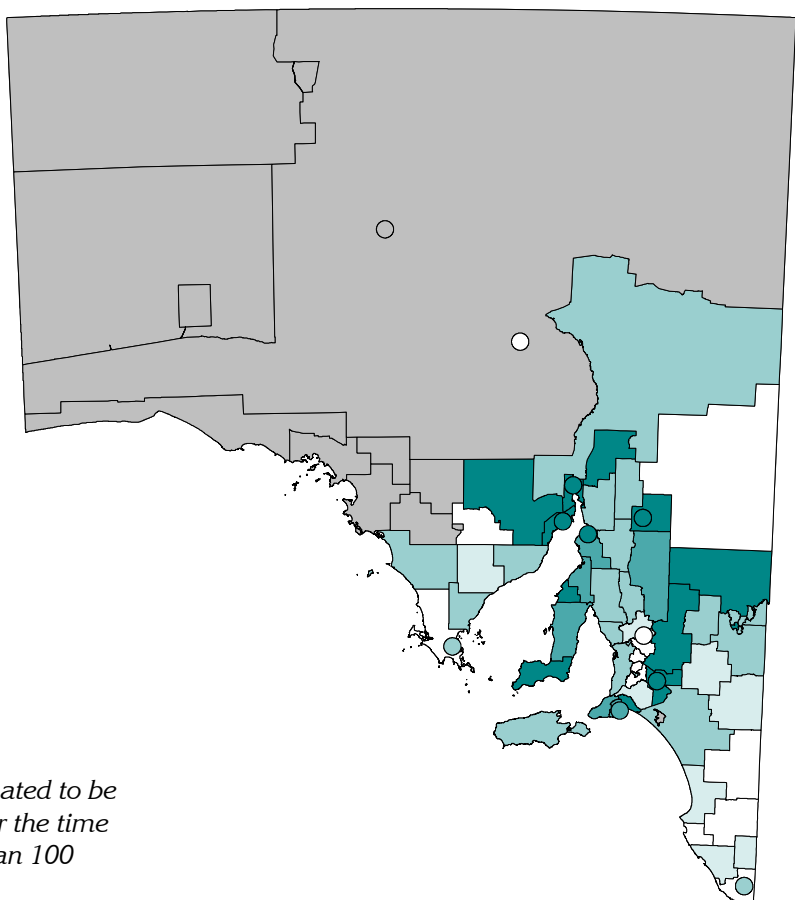
Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100

Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were estimated to be between one to four men in this category over the time period; or the SLA has a population of less than 100



6. Prevalence of selected risk factors

Estimates (synthetic predictions) of the population with selected health risk factors have been produced for a majority² of Statistical Local Areas (SLAs) in South Australia, using data collected in the 2004-05 ABS National Health Survey. A description of the process is in the box in Section 6.

Remote areas were not included in the sample for the National Health Survey, so estimates have not been made for the following remote SLAs: Anangu Pitjantjatjara, Ceduna, Coober Pedy, Le Hunte, Maralinga Tjarutja, Streaky Bay, Unincorporated Yorke, Unincorporated Mallee, Unincorporated Lincoln, Unincorporated West Coast and Unincorporated Far North.

² The NHS sample includes the majority of people living in private households, but excludes the most remote areas of Australia. Thus, it has not been possible to produce estimates for SLAs with relatively high proportions of their population in these remote areas.

Current smokers

Tobacco is the largest preventable cause of death and disease in Australia. Smoking is a key risk factor for the three diseases that cause most deaths in Australia: ischaemic heart disease, lung cancer and cerebrovascular disease. Smokers are also at increased risk of developing chronic obstructive pulmonary disease and reduced lung function (22). Men's death rates from smoking-related lung cancers still far exceed those of women because men began smoking in large numbers prior to women, and have always had a higher prevalence of smoking. Moreover, men tend to smoke more heavily than women, to choose cigarettes with a higher tar content, and to report longer duration of smoking than women, probably reflecting an earlier age of uptake (23).

Aboriginal and Torres Strait Islander people are more than twice as likely as non-Indigenous Australians to smoke cigarettes on a daily basis. In 2004, 52.9% of the adult Aboriginal population in South Australia were current daily smokers, with the figure in urban areas much higher at 53.7%. By comparison, 17% of the non-Indigenous population were smokers (35).

The estimates below were based on information reported to interviewers by respondents to the 2004-05 ABS National Health Survey. 'Current smoker' includes those who reported smoking daily, weekly or less than weekly.

Men in all age groups had higher rates of smoking, with the exception of the 65 to 74 year age group (Figure 6.1). Rates for both men and women were highest in the younger age groups, with those for men highest in the 35 to 44 year age group, and for women, highest in the 25 to 34 year age group. Rates decreased sharply at older ages.

There were clear, and strong, socioeconomic patterns for both men and women, with the estimated number of smokers increasing with increasing disadvantage (Figure 6.2). Rates in the lowest SES group were 73% higher than those in the highest SES group for males, and 68% higher for females. Male rates were higher than those for females in each SES group.

Male rates were higher than those for females in all remoteness classes, and, in particular, in the Very Remote areas (Figure 6.3). There was a substantial differential in rates of smoking for men, with the rate in the Very Remote areas being 80% higher than in Major Cities: the differential for females was less pronounced, but still markedly higher, at 23%.

Prevalence of current smokers aged 18 years and over, South Australia, 2004-05

Figure 6.1: By age and sex

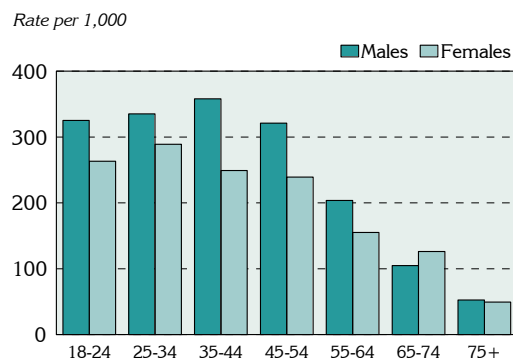


Figure 6.2: By socioeconomic status and sex

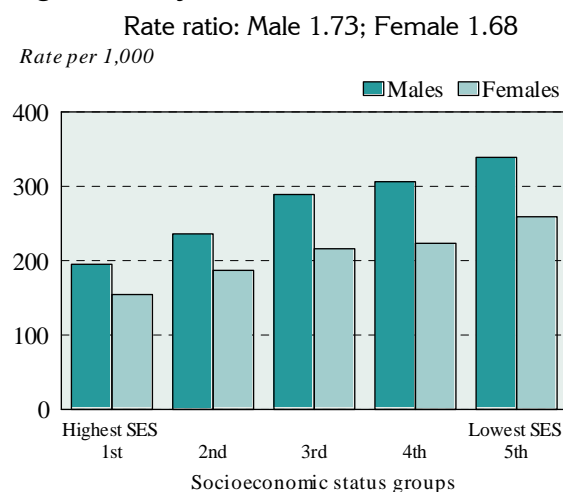
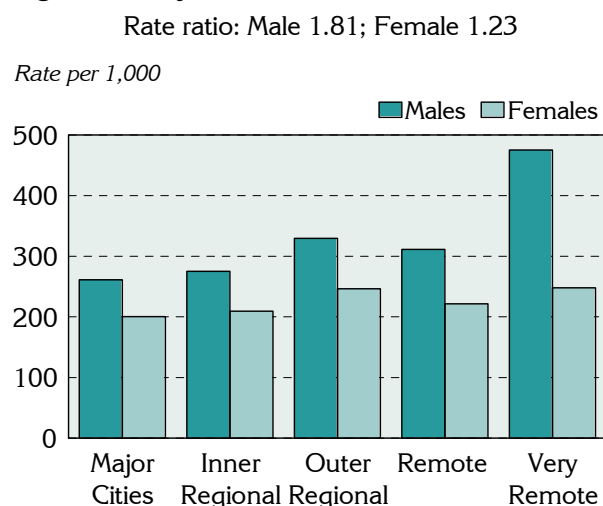


Figure 6.3: By remoteness and sex



Estimated number of male current smokers (18 years and over), 2004/05

Compared with the State rate, there were fewer male current smokers aged 18 years and over in the Central Northern (a standardised ratio (SR) of 97, 79,472 men) and Southern Adelaide (an SR of 91, 30,670 men) Health Regions. At the sub-region/district level, there were elevated ratios in Outer Southern District and the Western and Northern sub-regions.

All Health Regions in country SA had more male smokers than expected, with substantially more in Riverland, Northern & Far Western and Mid North.

Table 6.1: Estimated current smokers, males aged 18 years and over, by Health Region, South Australia, 2004/05

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	79,472	265.2	97**
Northern sub-region	16,593	99.6	105**
Western sub-region	10,383	100.6	106**
Central East sub-region	8,921	80.7	85**
Southern Adelaide	30670	248.5	91**
Urban Beaches District	6,077	91.5	96**
Hills District	2,905	75.8	80**
Outer Southern District	5,887	103.4	109**
Metropolitan Adelaide (excl. Gawler)	11,0142	260.3	96**
Hills Mallee Southern	12,187	280.2	103**
South East	7,423	304.2	112**
Wakefield	10,784	288.2	106**
Mid North	3,826	345.3	127**
Riverland	4,340	349.6	128**
Eyre	3,109	307.4	113**
Northern & Far Western	5,904	346.2	127**
Country South Australia (incl. Gawler)	47,573	305.0	112**

¹ Rate is the number of male current smokers (18 years and over) per 1,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

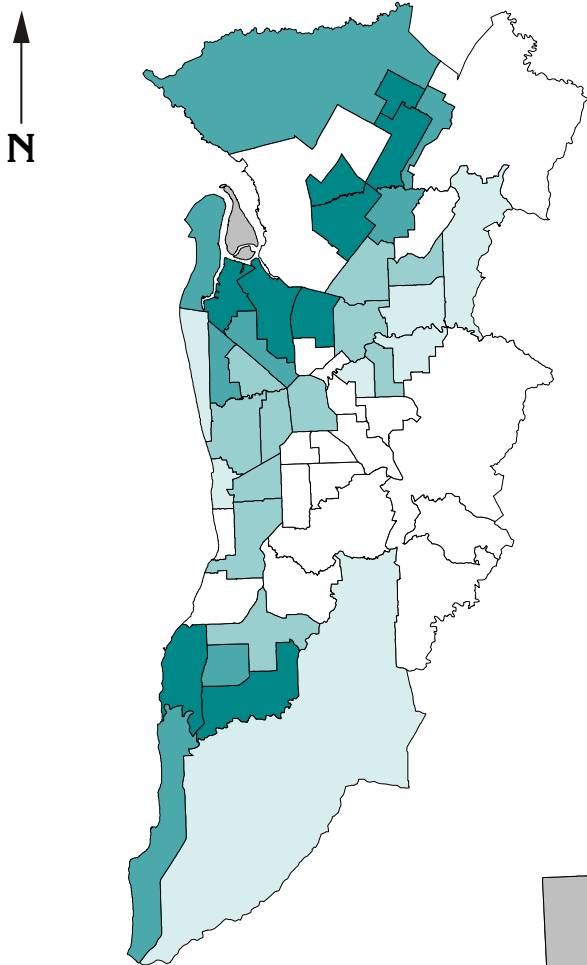
There were estimated to be more male smokers than expected in the SLAs of Playford - West Central (an SR of 137**, 1,738 males) and - Elizabeth (136**, 3,315); Onkaparinga - North Coast (127**, 2,289) and - Hackham (124**, 1,775); Port Adelaide Enfield - Port (125**, 1,471) and - Inner (120**, 2,465); and Salisbury - Central (125**, 3,580) and - Inner North (125**, 3,279) (Map 6.1).

SLAs with lower than expected ratios were Mitcham - North-East, - West and - Hills; Burnside - North-East and - South-West; Walkerville; Adelaide Hills - Central and - Ranges; Unley - East and - West; Norwood Payneham St Peters - West; Onkaparinga - Reservoir; Tea Tree Gully - North; Marion - South; Holdfast Bay - South; Playford - Hills; Prospect; and Salisbury Balance.

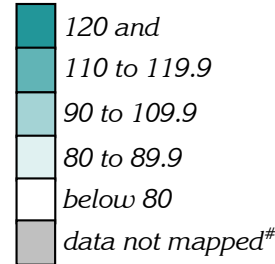
Country SA

In country SA, there were many areas with higher than expected ratios. These included Unincorporated Flinders Ranges (an SR of 207**, 311 men); Unincorporated Riverland (154*, 28); Unincorporated Pirie (151**, 60); Flinders Ranges (146**, 245); Peterborough (139**, 269); Unincorporated Whyalla (137, 38); Port Pirie Districts - City (135**, 1,794) and Balance (124**, 438); Berri & Barmera - Barmera (132**, 555) and - Berri (126**, 907); Renmark Paringa - Renmark (131**, 1,035) and - Paringa (130**, 255); Loxton Waikerie - West (130**, 619) and - East (123**, 941); Mid Murray (129**, 1,179); Karoonda East Murray (128**, 161); Whyalla (128**, 2,909); Elliston (125**, 165); Port Augusta (124**, 1,848); Murray Bridge (122**, 2,197); Copper Coast (121**, 1,280); Yorke Peninsula - South (121**, 480); Goyder (121**, 528); and Port Lincoln (120**, 1,712).

Map 6.1 and Map 6.2: Estimated number of male current smokers (18 years and over), Metropolitan Adelaide and country SA, 2004/05

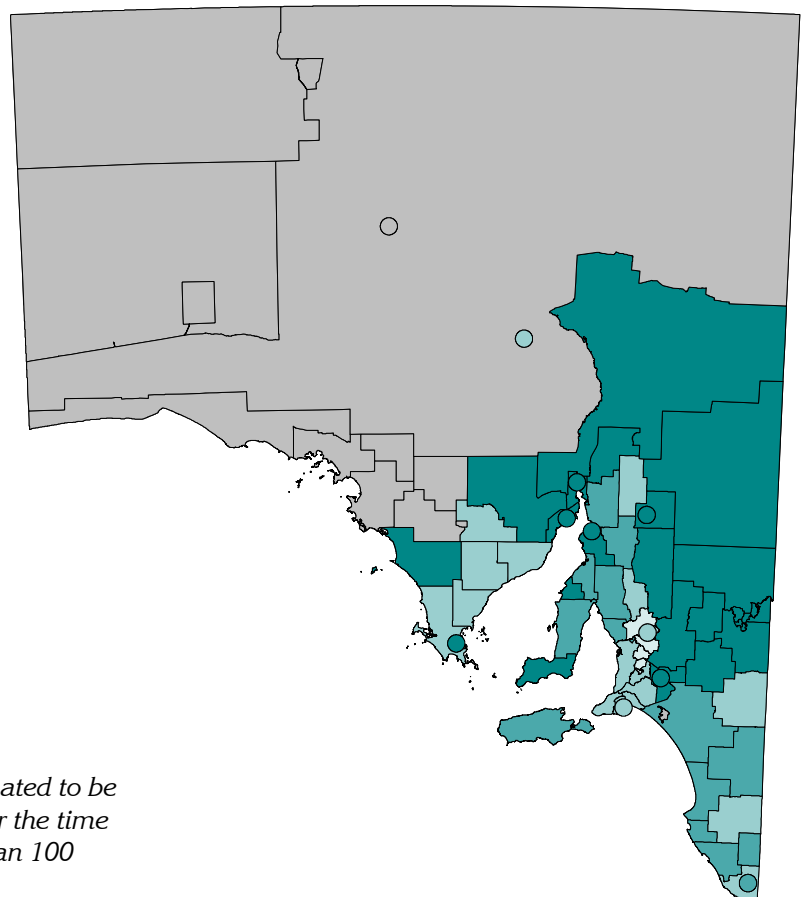


Standardised ratio (as an index)*, by SLA

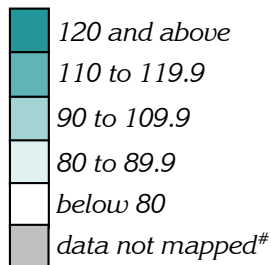


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were estimated to be between one to four men in this category over the time period; or the SLA has a population of less than 100

Overweight (not obese)

Each increment in a person's body weight above their optimal level is associated with an increase in the risk of ill health. Energy imbalance needs only to be minor for weight gain to occur, and some people, due to genetic and biological 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. Research has shown that 49% of overweight men do not perceive themselves as overweight; and for rural men, being overweight may be seen as an advantage for protecting a family despite the unhealthy consequences (24, 25).

The estimates below were based on height and weight, as reported to interviewers by respondents to the 2004-05 ABS National Health Survey.

The estimated number of males who were overweight (but not obese) was higher than that for females in all age groups shown in Figure 6.4. The proportion of the population who were overweight steadily increased for both men and women until the 45 to 55 year age group. For men, proportions remained at this level through to the 65 to 74 year age group before decreasing substantially: for women, the level increased slightly in the 55 to 64 year age group, then dropped to consistent levels in the two oldest age groups.

For males, being overweight (not obese) showed a small decline across the SES groups, while for females, there was a small increase, albeit with lower rates in SES group (Figure 6.5). This was very different from the pattern for obesity (see Figure 6.8, below).

Rates for males were higher than those for females across all remoteness classes, most notably in the Very Remote areas (Figure 6.6). For both males and females, the rates in the Very Remote areas were higher than those in the Major Cities; the differential for males was 55%, and for females, 42%.

Prevalence of overweight (not obese) people aged 15 years and over, South Australia, 2004-05

Figure 6.4: By age and sex

Rate per 1,000

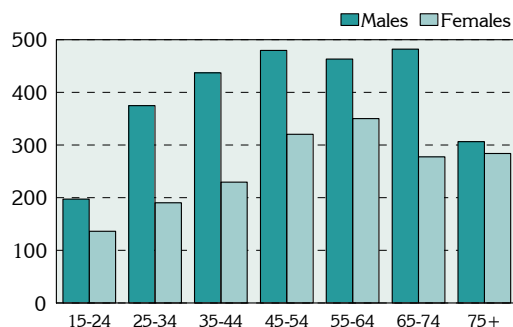


Figure 6.5: By socioeconomic status and sex

Rate ratio: Male 0.94; Female 1.08

Rate per 1,000

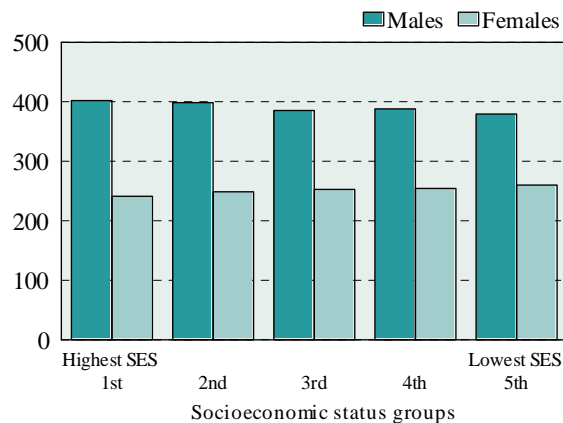
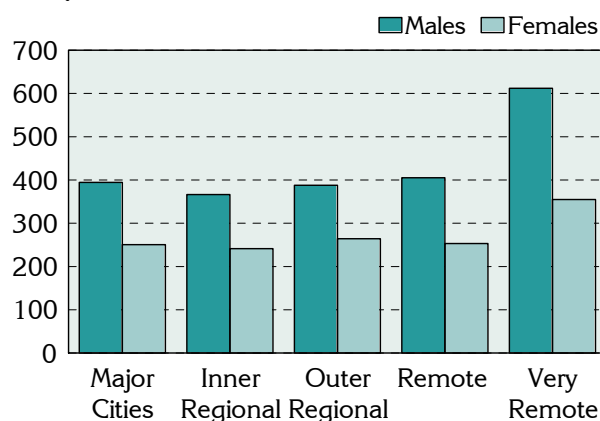


Figure 6.6: By remoteness and sex

Rate ratio: Male 1.55; Female 1.42

Rate per 1,000



Estimated number of overweight (not obese) males aged 15 years and over, 2004/05

Both Central Northern Adelaide (with a standardised ratio (SR) of 101**, 121,854 men) and Southern Adelaide (an SR of 101**, 51,434 men) Health Regions had close to the expected numbers of males aged 15 years and over assessed as being overweight (not obese). There was also little variation at the sub-region/district level.

In country SA, only Northern & Far Western Region was estimated to have a statistically significantly elevated number of overweight males.

Table 6.2: Estimated number of overweight (not obese) males aged 15 years and over by Health Region, South Australia, 2004/05

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	121,854	393.9	101**
Northern sub-region	51,076	388.4	99
Western sub-region	33,754	392.5	100
Central East sub-region	37,024	403.0	103**
Southern Adelaide	51,434	395.8	101**
Urban Beaches District	21,626	395.5	101
Hills District	12,218	400.0	102**
Outer Southern District	17,590	393.3	101
Metropolitan Adelaide (excl. Gawler)	173,288	394.5	101**
Hills Mallee Southern	17,812	363.8	93**
South East	9,905	385.1	99
Wakefield	15,594	372.9	95**
Mid North	4,980	389.6	100
Riverland	5,414	399.3	102
Eyre	4,244	389.1	100
Northern & Far Western	7,375	419.5	107**
Country South Australia (incl. Gawler)	65,324	381.3	98**

¹ Rate is the number of overweight (not obese) males per 1,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The highest ratios of overweight (not obese) males were in the SLAs of Adelaide (an SR of 113**, 3,356 men); Tea Tree Gully - Hills (110**, 2,195), - Central (108**, 4,375) and South (105**, 5,451); Salisbury - North-East (108**, 3,608); and Charles Sturt - Coastal (105**, 5,364) (Map 6.3).

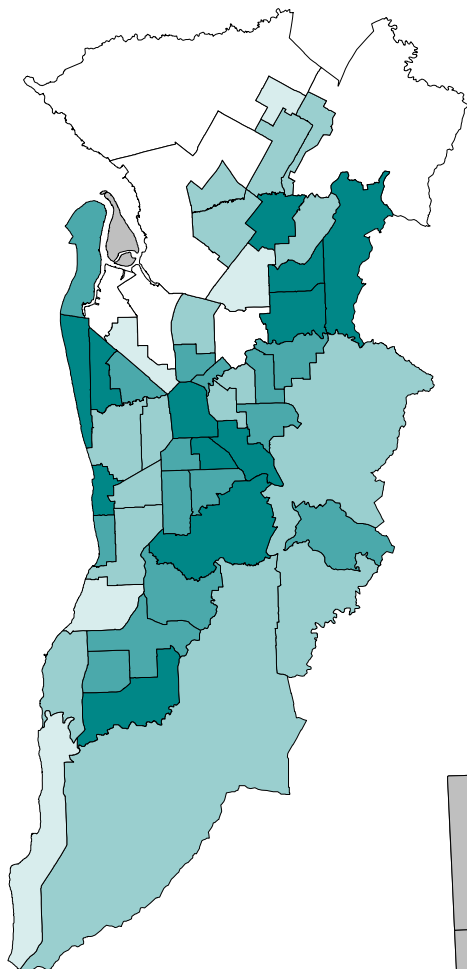
Lower than expected ratios were recorded for Salisbury Balance; Port Adelaide Enfield - Port, - Park and - East; and Playford - Hills and - West.

Country SA

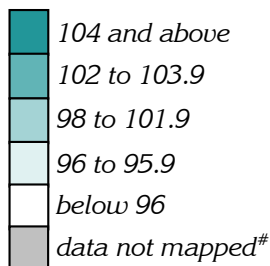
SLAs with the largest numbers of overweight males compared with the level expected were Unincorporated Flinders Ranges (an SR of 189**, 396 men) and Roxby Downs (140**, 910). Other elevated (although not statistically significant) ratios were recorded for Unincorporated Pirie (125, 70), Unincorporated Riverland (112, 28), Elliston (111, 223), Flinders Ranges (107, 315), Robe (106, 242) and Berri & Barmera - Berri (106, 1,147).

The lowest ratios in country SA were in Unincorporated Whyalla; Alexandrina - Coastal and - Strathalbyn; Mount Barker - Central; Light; Yankalilla; Victor Harbor; Kingston; Mallala; Barossa - Barossa; Peterborough; Murray Bridge; Copper Coast; and Yorke Peninsula - South.

Map 6.3 and Map 6.4: Estimated number of overweight (not obese) males aged 15 years and over, Metropolitan Adelaide and country SA, 2004/05

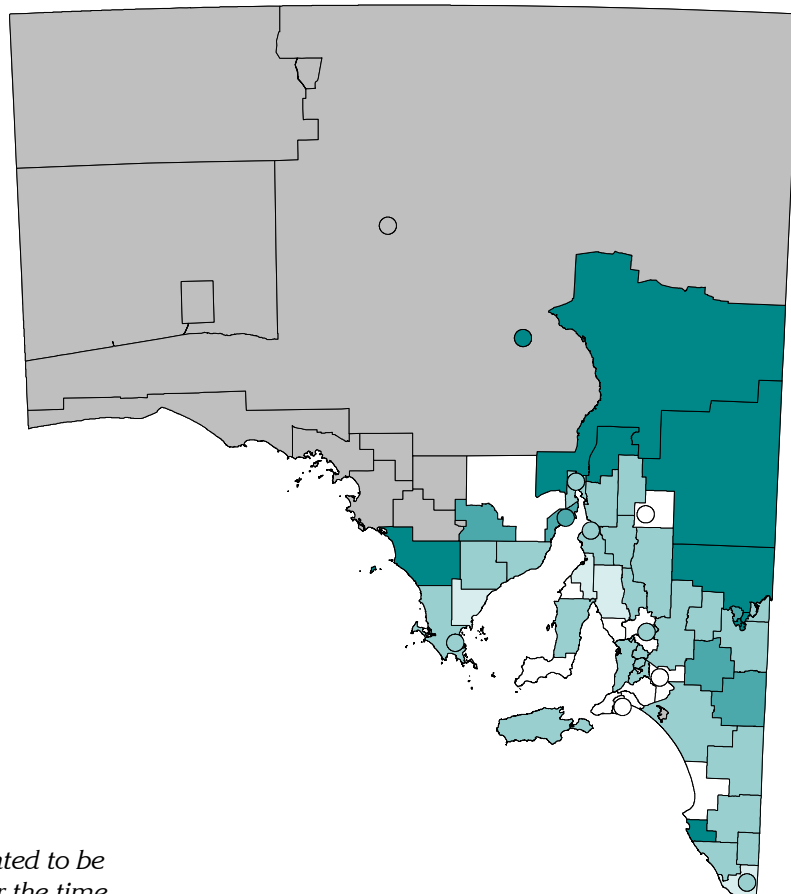


Standardised ratio (as an index)*, by SLA

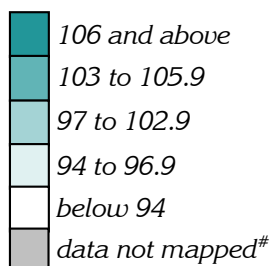


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

[#] Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

[#] Data not mapped because there were estimated to be between one to four men in this category over the time period; or the SLA has a population of less than 100

Obesity

Obesity is a significant contributing factor in the development of many diseases, which can in itself lead to high blood pressure and elevated blood cholesterol. Excess body fat also increases the risk of developing a range of health problems including type 2 diabetes, cardiovascular disease, high blood pressure, certain cancers, sleep apnoea, osteoarthritis, psychological disorders and social problems. For men, the prevalence of obesity is increasing, with the proportion of men who were classified as obese more than doubling, from 9% in 1989-90 to 19% in 2004-05 (26).

These estimates were based on height and weight, as reported to interviewers by respondents to the 2004-05 ABS National Health Survey.

Male rates of obesity were higher than those for females in all age groups up to 55 to 64 years (Figure 6.7). For men, rates increased rapidly after 15 to 24 years, and were highest in the 35 to 44 year age group. Female rates also increased rapidly after 15 to 24 years, but remained below those for men until the 65 to 74 year age group.

Rates of obesity for both males and females increased with increasing disadvantage, with male rates in the lowest SES areas 49% higher than those in the highest SES (Figure 6.8). For females, the differential was greater, with the rate in the lowest SES areas almost twice that in the highest SES areas (a rate ratio of 1.93). Male rates were higher than those for females in all but the lowest SES group, where they were the same.

Obesity rates increased with remoteness, with a strong, continuous gradient (Figure 6.9). The gradient, and the differential between the most remote and Major Cities areas, was strongest for males, with rates in the Very Remote areas more than twice those in the Major Cities areas (rate ratio of 2.05). Male rates were higher than those for females across all remoteness classes, with the gap increasing as remoteness increased.

Prevalence of obese people aged 15 years and over, South Australia, 2004-05

Figure 6.7: By age and sex

Rate per 1,000

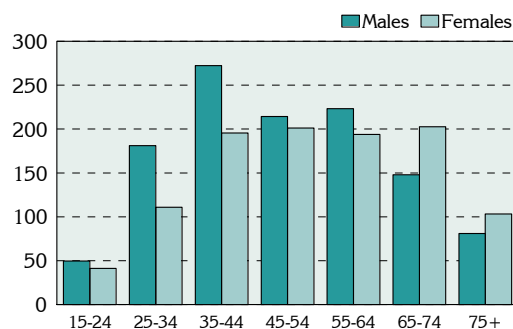


Figure 6.8: By socioeconomic status and sex

Rate ratio: Male 1.49; Female 1.93

Rate per 1,000

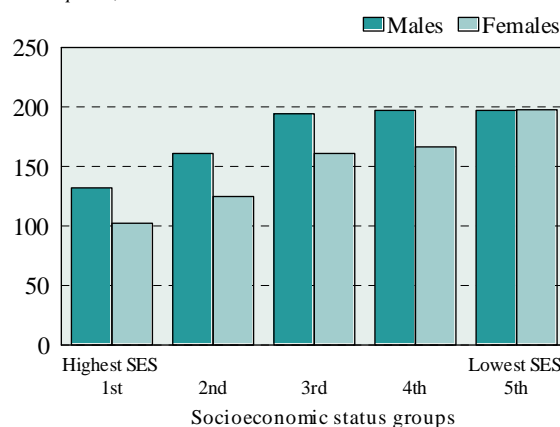
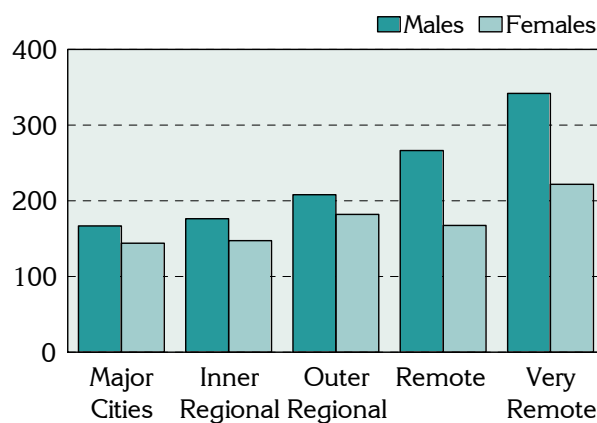


Figure 6.9: By remoteness and sex

Rate ratio: Male 2.05; Female 1.54

Rate per 1,000



Estimated number of obese males aged 15 years and over, 2004/05

Both the Central Northern Adelaide (with a standardised ratio (SR) of 95, 51,994 males) and Southern Adelaide (an SR of 92, 20,920 males) Health Regions had fewer than expected males aged 15 years and over assessed as being obese. However, both Central East sub-region and Hills District were estimated to have much lower ratios when compared with Metropolitan Adelaide as a whole; and Northern and Western sub-regions, and Outer Southern District had notably higher ratios.

In country SA, all health regions had more males than expected who were assessed as being obese, in particular, Eyre had just over 50% more (an SR of 152**, 2,936 men).

Table 6.3: Estimated number of obese males aged 15 years and over by Health Region, South Australia, 2004/05

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	51,994	168.0	95**
Northern sub-region	24,044	180.9	103**
Western sub-region	15,519	181.8	103**
Central East sub-region	12,431	136.3	77**
Southern Adelaide	20,920	161.8	92**
Urban Beaches District	8,569	159.1	90**
Hills District	4,111	134.8	76**
Outer Southern District	8,240	183.4	104**
Metropolitan Adelaide (excl. Gawler)	72,914	166.2	94**
Hills Mallee Southern	8,962	183.3	104**
South East	5,175	198.9	113**
Wakefield	8,076	193.6	110**
Mid North	2,711	214.0	121**
Riverland	2,954	218.1	124**
Eyre	2,936	267.8	152**
Northern & Far Western	3,883	215.0	122**
Country South Australia (incl. Gawler)	34,697	201.9	115**

¹ Rate is the number of obese males 15 years and over per 1,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

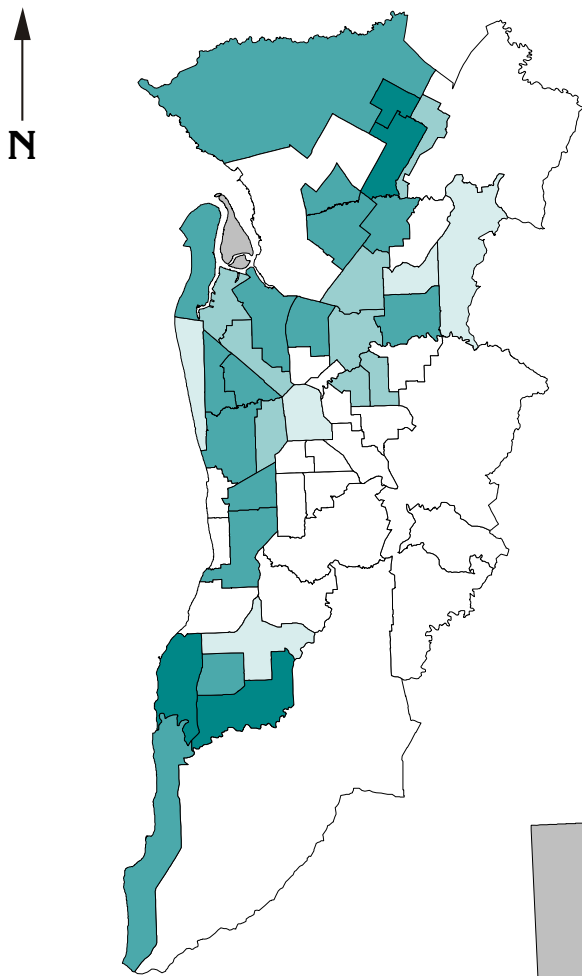
Higher than expected numbers of males aged 15 years and over living in the SLAs of Playford - West Central (an SR of 121**, 998 men) and - Elizabeth (121**, 1,968); and Onkaparinga - Hackham (119**, 1,101) and - North Coast (115**, 1,434) were assessed as being obese (Map 6.5).

The lowest ratios were recorded in Burnside - North-East and - South-West; Norwood Payneham St Peters - West; Mitcham - North-East, - Hills and - West; Unley - East and - West; Walkerville; Playford - Hills; Salisbury Balance; Adelaide Hills - Central and - Ranges; Prospect; Tea Tree Gully - North; Marion - South; Holdfast Bay - South and - North; Onkaparinga - Reservoir and - Hills; and Campbelltown - East.

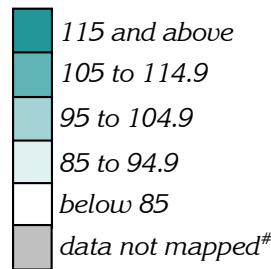
Country SA

The most highly elevated ratio was in Unincorporated Flinders Ranges (an SR of 226**, 228 men) with over two times the expected number of obese men (Map 6.6). Other SLAs with elevated ratios were Unincorporated Pirie (an SR of 176**, 49 men), Unincorporated Riverland (171*, 20); Franklin Harbour (156**, 158); Cleve (155**, 232); Southern Mallee (155**, 260); Yorke Peninsula - South (154**, 487) and - North (123**, 692); Port Lincoln (154**, 1,473); Tumby Bay (153**, 307); Kangaroo Island (150**, 514); Elliston (148**, 142); Kimba (148**, 126); Flinders Ranges (147**, 190); Roxby Downs (145**, 474); Lower Eyre Peninsula (145**, 498); Karoonda East Murray (130**, 121); Berri & Barmera - Barmera (120**, 385) and - Berri (122**, 603); Loxton Waikerie - West (125**, 426) and - East (121**, 663); Port Pirie Districts Balance (124**, 322) and - City (122**, 1,170); Renmark Paringa - Renmark (123**, 685) and - Paringa (122**, 172); Goyder (123**, 394); Peterborough (123**, 184); Mid Murray (121**, 837); Tatiara (121**, 636); Unincorporated Whyalla (121, 27); and The Coorong (120**, 527).

Map 6.5 and Map 6.6: Estimated number of obese males aged 15 years and over, Metropolitan Adelaide and country SA, 2004/05

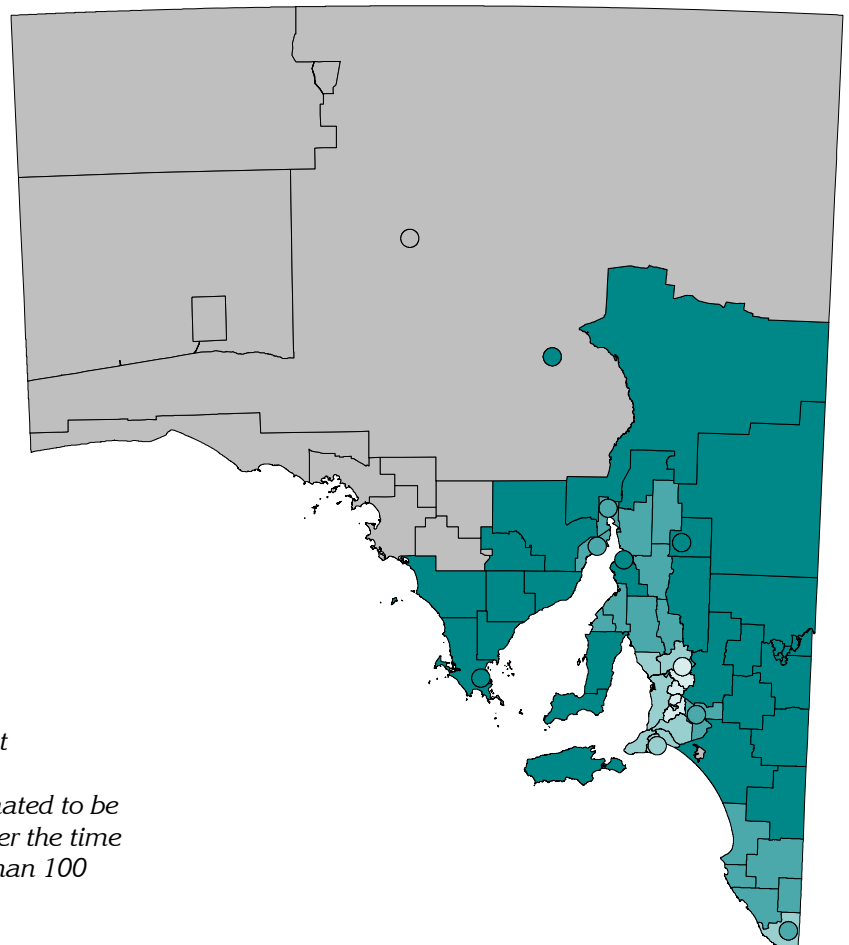


Standardised ratio (as an index)*, by SLA

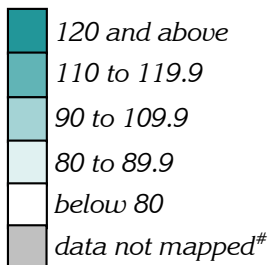


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

[#] Data not mapped because there were between one to four admissions over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

[#] Data not mapped because there were estimated to be between one to four men in this category over the time period; or the SLA has a population of less than 100

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7. Incidence of cancer

While the causes of cancer are not fully understood, environmental factors 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). Even though less than half of the Australian population are men, more men than women are diagnosed with cancer every year, and this reflects their greater exposure to many of these factors, through their behaviours, activities and work (28). The most common cancers suffered by men are prostate, bowel, melanoma and lung cancer.

Table 7.1 shows the number and rate by age and sex of all cancers, and of selected cancers, by cause. For all cancers, rates for males were higher than for females in the younger and older age groups. This was also the case for lung cancer. Male rates for colorectal cancer were higher than females in all age groups. For men, rates of prostate cancer increased with age.

Table 7.1: Incidence of cancer by type, age and sex, South Australia, 2000-05

Cancer	Males		Females		Rate Ratio ²
	No.	Rate ¹	No.	Rate ¹	RR
All cancers					
0 to 14 years	139	15.7	123	14.6	1.08
15 to 24 years	236	37.9	186	31.5	1.20
25 to 34 years	503	80.6	569	94.4	0.85
35 to 44 years	1,026	150.6	1,617	237.2	0.63
45 to 54 years	2,637	415.4	3,405	525.8	0.79
55 to 64 years	5,396	1,131.6	4,431	916.8	1.23
65 to 74 years	8,086	2,428.0	4,882	1,349.8	1.80
75+ years	9,566	3,696.4	7,582	1,893.5	1.95
All ages	27,589	610.6	22,795	494.4	1.24
Prostate cancer					
Under 50 years	74	154.9	na	na	na
50 to 59 years	895	154.9	na	na	na
60 to 69 years	2,091	544.8	na	na	na
70 to 79 years	2,632	913.6	na	na	na
80+ years	1,314	1,024.0	na	na	na
All ages	6,932	503.0	na	na	na
Colorectal cancer³					
Under 40 years	55	4.4	46	3.8	1.16
40 to 49 years	165	24.5	163	23.9	1.03
50 to 59 years	564	97.6	386	65.7	1.49
60 to 69 years	998	260.0	604	152.0	1.71
70 to 79 years	1,262	438.1	1,009	294.4	1.49
80+ years	669	521.3	991	423.8	1.23
All ages	3,713	112.0	3,199	92.3	1.21
Lung cancer³					
Under 40 years	7	0.6	16	1.3	0.46
40 to 49 years	82	12.2	90	13.2	0.92
50 to 59 years	312	54.0	194	33.0	1.64
60 to 69 years	665	173.3	361	90.8	1.90
70 to 79 years	1,167	405.1	556	162.2	2.50
80+ years	605	471.5	369	157.8	2.99
All ages	2,838	85.6	1,586	45.8	1.87

¹Rate is the average annual number of new cases of cancer per 100,000 population

²Rate ratio

³'Under 40 years' includes data for people aged 20 to 39 years

Cancer

The incidence of cancer increases with age. While incidence for men lags behind that for women in the age groups 35 to 45 and 45 to 54 years, rates for both sexes then grow rapidly, but particularly for men, with rates increasing to almost twice those of women (Figure 7.1).

For both males and females, there was little variation in incidence of cancer by socioeconomic status, with just a 2% difference in rates between the highest SES and lowest SES areas. Rates for males were higher across all areas than those for females (Figure 7.2).

While cancer incidence was higher for males than for females in all remoteness classes, there was little variation in male rates by remoteness (Figure 7.3). However, for females, there was a marked difference in incidence in the Major Cities and Very Remote areas, with 21% fewer new cases recorded in the most remote areas (a rate ratio of 0.79).

Cancer incidence, South Australia, 2000-05

Figure 7.1: Cancer by age and sex

Average yearly rate per 100,000

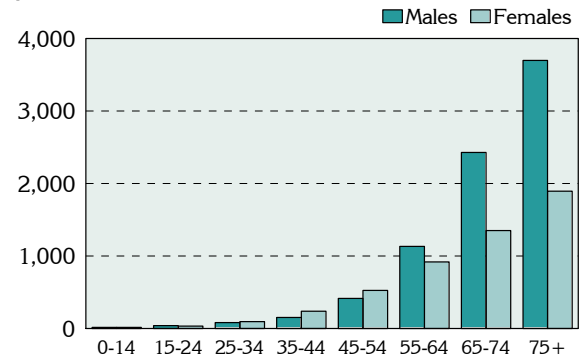


Figure 7.2: Cancer by socioeconomic status of area and sex

Rate ratio: Male 0.98; Female 0.98

Rate per 100,000

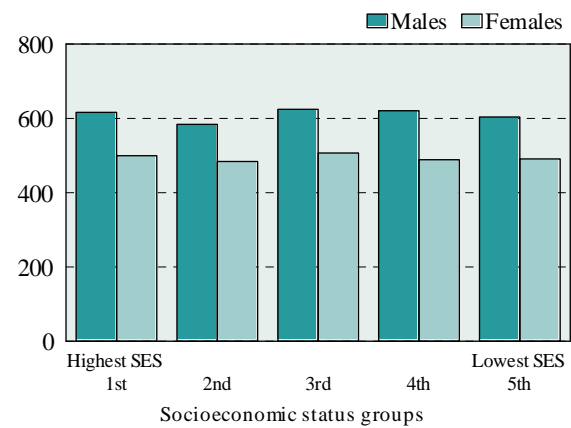
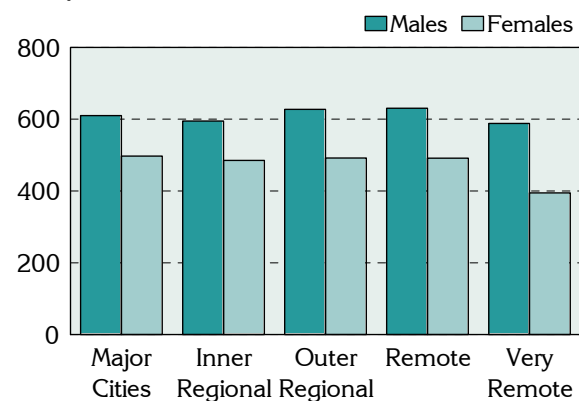


Figure 7.3: Cancer by remoteness

Rate ratio: Male 0.96; Female 0.79

Rate per 100,000



Cancer incidence in males, 2000 to 2005

The numbers of new cases of cancer recorded for males in the Central Northern Adelaide and Southern Adelaide Health Regions over the six years from 2000 to 2005 were consistent with the levels expected from the State rate (with standardised ratios (SRs) of 99 and 102, respectively). At the sub-region/district level, there was slightly more variation, although the only statistically significant ratios were those in Urban Beaches District and Western sub-region (higher than expected) and Northern sub-region (lower than expected).

In country South Australia, a number of health regions had incidence rates consistent with the State rate, while Mid North had a lower than expected incidence rate (an SR of 91*), and the only statistically significant variation from the State rate.

Table 7.2: Incidence of cancer in males, by Health Region, South Australia, 2000-05

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	13,421	603.1	99
Northern sub-region	4,826	580.8	95**
Western sub-region	4,490	634.0	104*
Central East sub-region	4,105	598.3	98
Southern Adelaide	6,055	622.8	102
Urban Beaches District	2,985	641.7	105**
Hills District	1,377	634.6	104
Outer Southern District	1,693	583.7	96
Metropolitan Adelaide (excl. Gawler)	19,475	609.1	100
Hills Mallee Southern	2,309	612.4	100
South East	1,091	624.2	102
Wakefield	2,022	613.6	100
Mid North	602	557.4	91*
Riverland	658	642.8	105
Eyre	658	646.2	106
Northern & Far Western	774	607.4	99
Country South Australia (incl. Gawler)	8,113	614.3	101

¹ Rate is the number of cancer incidences per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

SLAs with elevated ratios of new cases of cancer in males were spread across Metropolitan Adelaide in no particular pattern. They included Port Adelaide Enfield - Coast (an SR of 122**, 638 cases), Salisbury - Inner North (119**, 302), Holdfast Bay - South (115**, 407) and Mitcham - Hills (115**, 525) (Map 7.1).

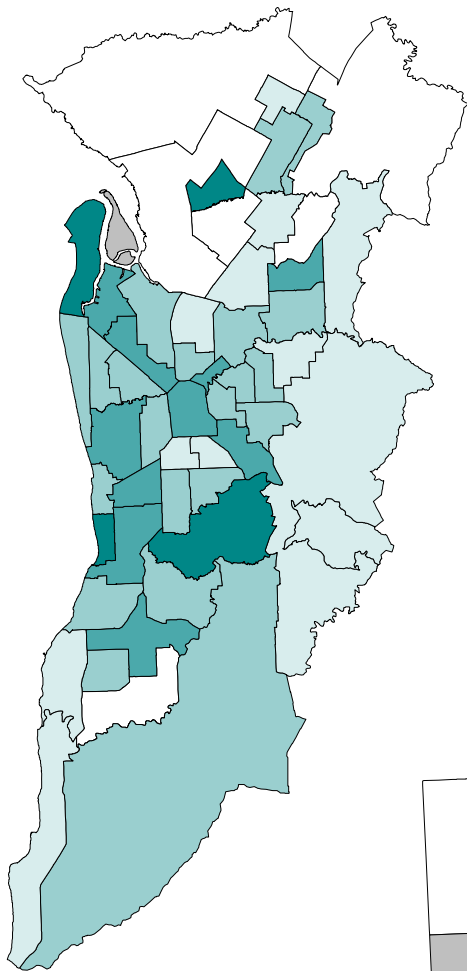
Lower than expected ratios were recorded in Playford - Hills and - West; Onkaparinga - Hackham; Salisbury - Central and Balance; and Tea Tree Gully - North.

Country SA

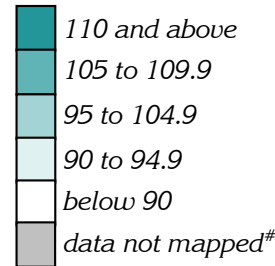
In country South Australia (Map 7.2), elevated ratios were found in Renmark Paringa - Paringa (an SR of 133, 45 cases), Streaky Bay (132*, 52), Le Hunte (130, 34), Tatiara (122*, 149), The Coorong (121*, 139), Wattle Range - West (117*, 195), Port Lincoln (117**, 270), Kimba (116, 31) and Mid Murray (115*, 228).

Ratios were lowest in the SLAs of Anangu Pitjantjatjara, Unincorporated Far North, Northern Areas, Flinders Ranges, Orroroo/Carrieton, Mount Remarkable, Elliston, Lower Eyre Peninsula, Barunga West and Grant.

Map 7.1 and Map 7.2: Cancer incidence in males, Metropolitan Adelaide and country SA, 2000 to 2005

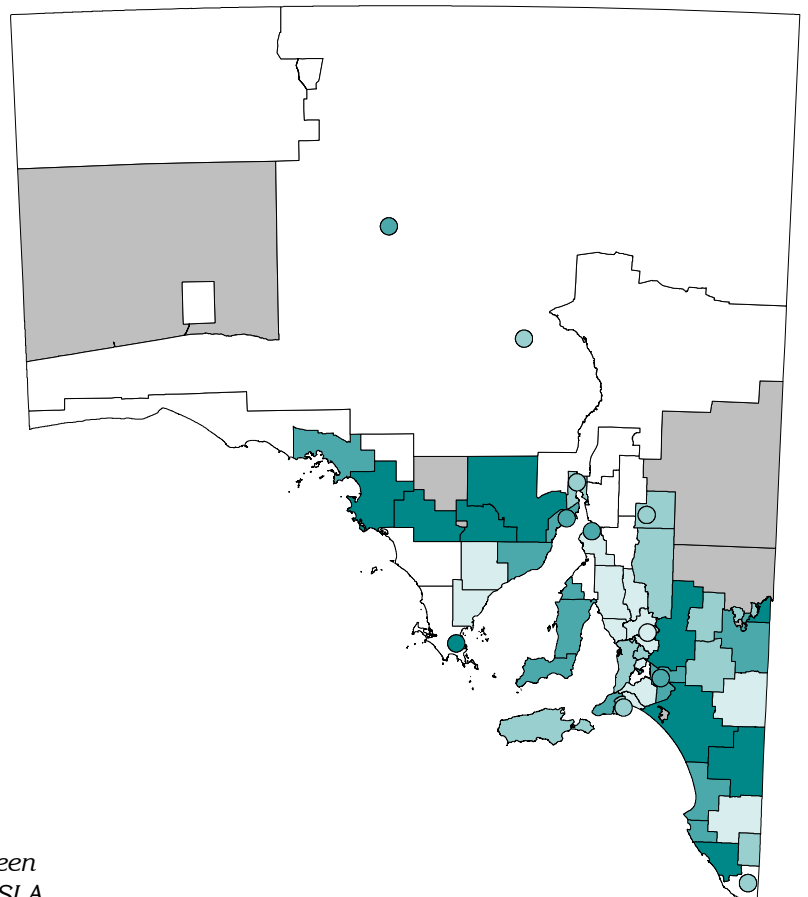


Standardised ratio (as an index)*, by SLA

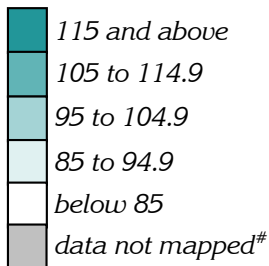


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100

Prostate cancer

Prostate cancer is the most common type of cancer that afflicts Australian men and the second highest cause of cancer deaths in men. Each year in Australia, close to 3000 men die of prostate cancer - equal to the number of women who die from breast cancer annually - and around 18,700 new cases are diagnosed in Australia every year (27). There is a deficit in knowledge about prostate cancer among men in the at-risk age group (40 -80 years) in areas that could lead to delays in diagnosis and treatment (28).

Prostate cancer can be cured if detected early and treated while still confined to the prostate gland, although screening tests are still not definitive.

Rates of prostate cancer are shown for men from ages 50 years and above, as the incidence of prostate cancer before this age is very low (Figure 7.4). The incidence of prostate cancer increases sharply with age.

Incidence rates for prostate cancer decreased as socioeconomic status declined, with rates in the lowest SES group 16% lower than in the highest SES areas (a rate ratio of 0.84) (Figure 7.5).

The rates of prostate cancer were similar across the Major Cities, Inner Regional, Outer Regional and Remote area, with the incidence rate highest in Major Cities and lowest in Very Remote, with a differential of 20% (Figure 7.6).

The lower incidence in both the lowest SES areas and the most remote areas is likely to reflect, at least in part, the lower levels of access by men in these areas to screening services.

Prostate cancer, males aged 50 years and over, South Australia, 2000-05

Figure 7.4: Prostate cancer by age

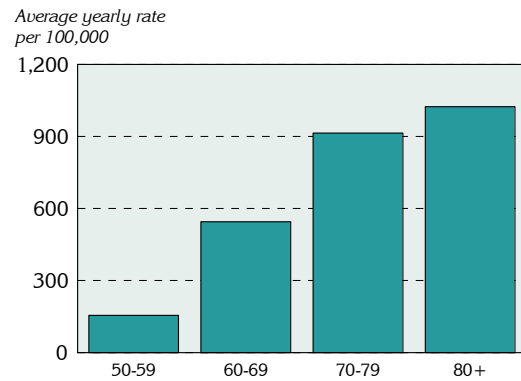


Figure 7.5: Prostate cancer by socioeconomic status of area

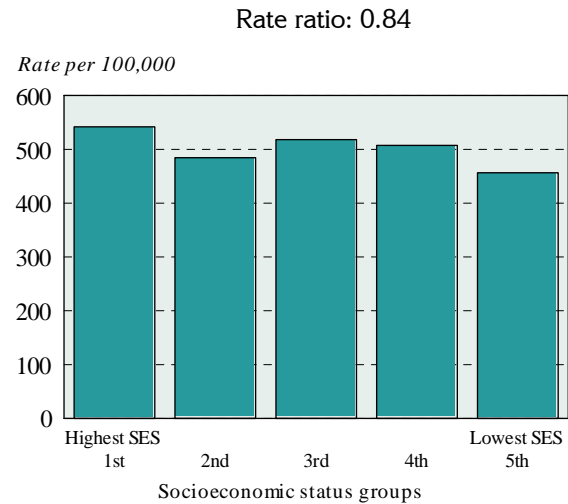
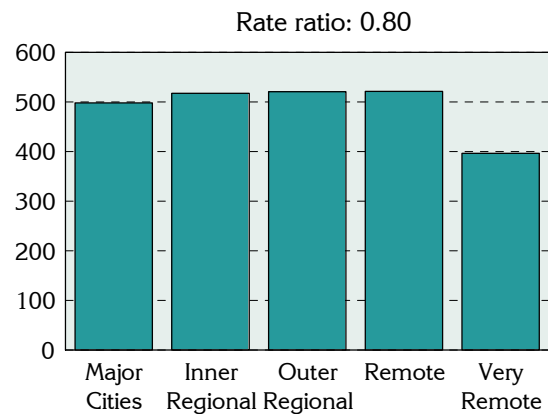


Figure 7.6: Prostate cancer by remoteness



Prostate cancer incidence, 2000 to 2005

The incidence of prostate cancer recorded for men in the Central Northern Adelaide Health Region was 3% below the level expected from the State rate (a standardised ratio (SR) of 97, 3,294 cases); in Southern Adelaide Health Region, it was 4% above the level expected (an SR of 104, 1,541 cases). Neither ratio was statistically significant.

In country South Australia, Hills Mallee Southern Health Region had an elevated ratio of statistical significance, and Northern & Far Western had fewer cases than expected, again with a ratio of statistical significance.

Table 7.3: Incidence of prostate cancer, males 50 years and over, by Health Region, South Australia, 2000-05

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	3,294	486.7	97
Northern sub-region	1,163	470.6	94
Western sub-region	1,074	488.7	97
Central East sub-region	1,057	503.4	100
Southern Adelaide	1,541	521.7	104
Urban Beaches District	750	519.6	103
Hills District	382	586.2	117**
Outer Southern District	409	476.4	95
Metropolitan Adelaide (excl. Gawler)	4,834	497.3	99
Hills Mallee Southern	655	558.1	111**
South East	272	518.7	103
Wakefield	531	518.8	103
Mid North	152	448.3	89
Riverland	180	578.7	115
Eyre	155	500.1	99
Northern & Far Western	152	402.4	80**
Country South Australia (incl. Gawler)	2,098	516.6	103

¹ Rate is the number of cancer incidences per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

SLAs with elevated numbers of new cases of prostate cancer were generally in higher SES areas (Map 7.3): the highest of these were Mitcham - Hills (an SR of 145**, 169 cases), Salisbury - Inner North (125, 69), Burnside - South-West (122*, 137), Adelaide (116, 68) and Norwood Payneham St Peters - West (115, 84).

SLAs with lower than expected numbers included Onkaparinga - Hackham; Salisbury - Central, Balance and - South-East; Playford - Hills; Adelaide Hills - Ranges; Port Adelaide Enfield - Park, - Inner and - Port; Marion - South; Unley - West; and Norwood Payneham St Peters - East.

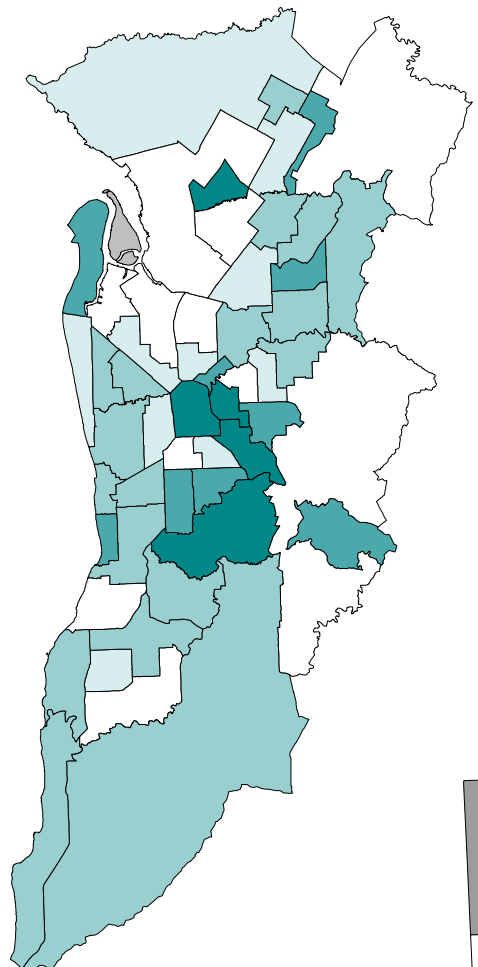
Country SA

The most highly elevated ratios for prostate cancer in country SA (Map 7.4) were in the SLAs of Southern Mallee (an SR of 175*, 20 cases); Renmark Paringa - Paringa (155, 13) and - Renmark (146**, 56); Streaky Bay (154, 15); Adelaide Hills - North (154**, 38); Tatiara (150**, 45); Franklin Harbour (150, 12); Karoonda East Murray (149, 10); Kimba (144, 10); The Coorong (138*, 40); and Yankalilla (131, 34).

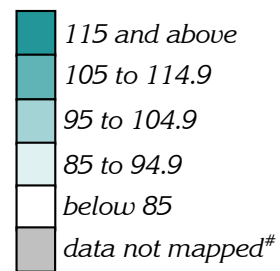
SLAs with lower than expected ratios include Port Pirie Districts Balance, Robe, Mount Barker Balance and Port Augusta.

Areas with no recorded cases were Maralinga Tjarutja, Anangu Pitjantjatjara and Unincorporated Riverland.

Map 7.3 and Map 7.4: Prostate cancer incidence, males 50 years and over, Metropolitan Adelaide and country SA, 2000 to 2005

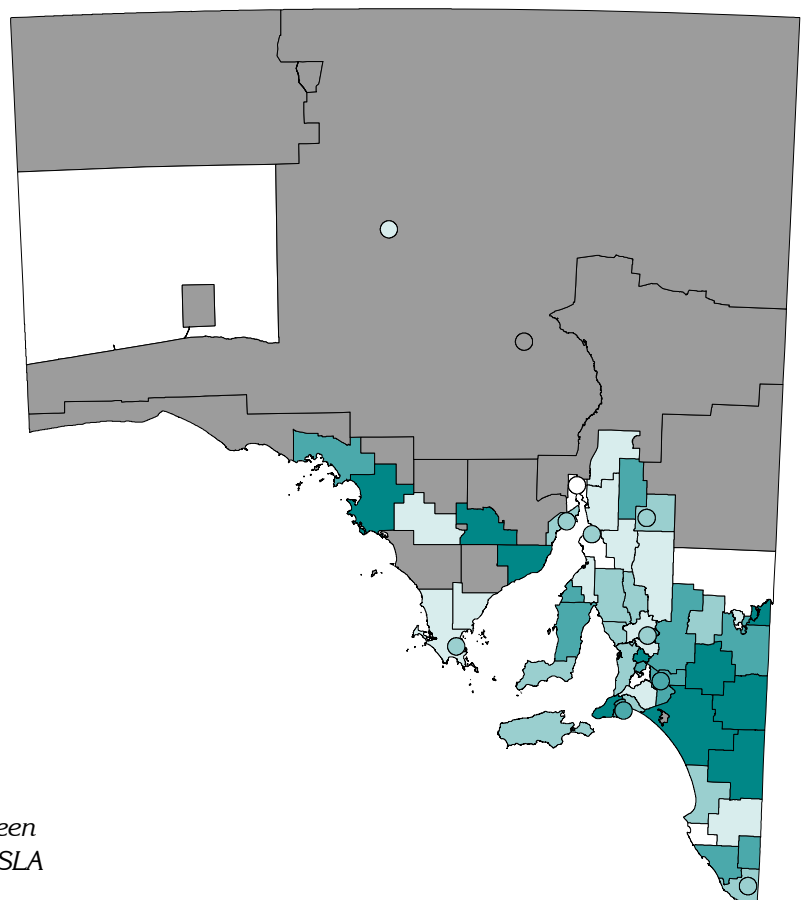


Standardised ratio (as an index)*, by SLA

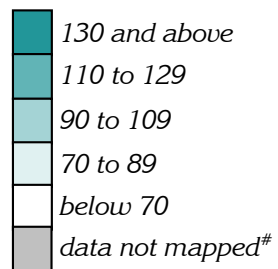


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100

Colorectal cancer

The term “colorectal cancer” refers to the specific cancer called “adenocarcinoma” which arises from the inner surface lining of the bowel. It is the commonest form of bowel cancer, with other types being comparatively rare. Population screening for colorectal cancer involves the faecal occult blood test (FOBT), a simple non-invasive process to detect small amounts of blood in the bowel motion, an early warning sign of bowel cancer (29). Having an FOBT every two years can reduce the risk of dying from bowel cancer by up to one third (29).

There is evidence that men older than 50 years make suboptimal use of preventive health services, such as bowel cancer screening by FOBT; and a lower use of cancer screening activities has been reported by men aged 50–64 years who live alone, who lack private health insurance, and who smoke (30). Barriers to FOBT screening include the inconvenience of the procedure, lack of perceived benefit from screening, anxiety over possible results, cost, and cultural beliefs and attitudes (29).

As seen for all cancers and prostate cancer, the incidence of colorectal cancer is strongly related to age, with higher rates for males with increasing age (Figure 7.7).

There was little variation in incidence of colorectal cancer by socioeconomic status for either males or females, and what variation there was had different impacts, with slightly higher incidence rates for men, and slightly lower for women, in the lowest SES areas (Figure 7.8). Rates for males were highest in the middle SES group.

There was a distinct gradient across the remoteness areas in incidence for males, with rates increasing from the Major Cities areas to the Remote areas, before dropping markedly in the Very Remote areas. For females, there was a very slight increase across the remoteness areas, followed by a marked decline in rates in the Very Remote class (Figure 7.9).

Colorectal cancer, South Australia, 2000-05

Figure 7.7: Colorectal cancer by age and sex

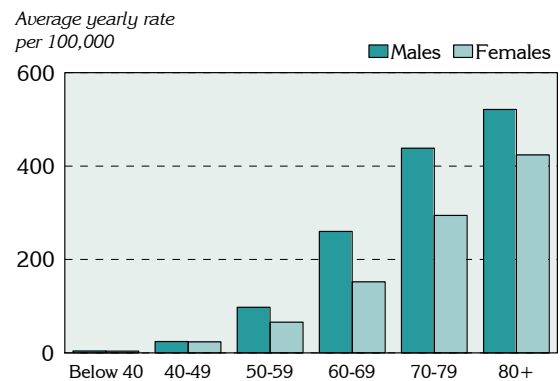


Figure 7.8: Colorectal cancer by socioeconomic status of area and sex

Rate ratio: Male 1.06; Female 0.93

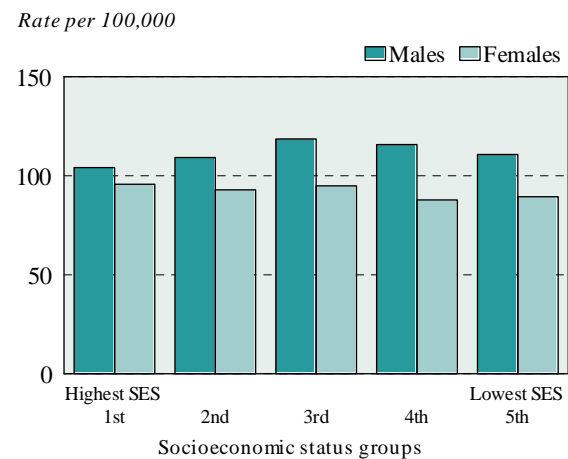
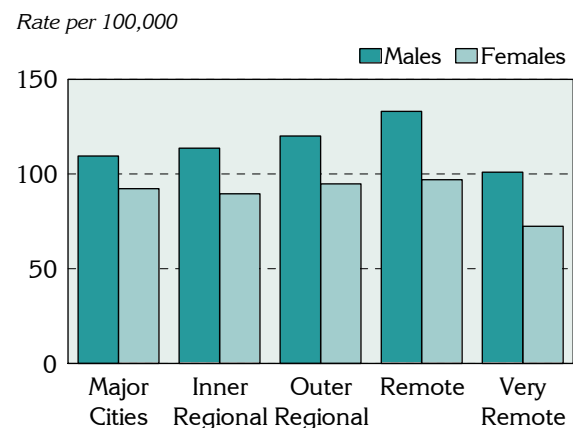


Figure 7.9: Colorectal cancer by remoteness and sex

Rate ratio: 0.92; Female 0.78



Colorectal cancer incidence for males, 2000 to 2005

Over this six year period, the incidence of colorectal cancer for males at the health region level in Metropolitan Adelaide was consistent with the State rate for this disease. Northern sub-region had a statistically significantly lower standardised ratio (SR) of 90**.

With the exception of Hills Mallee Southern (with a ratio consistent with the State rate) and Mid North (a lower ratio), country South Australian health regions all had more new cases than expected from the State rate; however, the only statistically significant elevated ratio was that in Wakefield (an SR of 114*).

Table 7.4: Incidence of colorectal cancer in males, by Health Region, South Australia, 2000-05

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	1,782	109.4	98
Northern sub-region	607	100.5	90**
Western sub-region	617	118.4	106
Central East sub-region	559	110.9	99
Southern Adelaide	784	110.0	98
Urban Beaches District	389	113.5	101
Hills District	165	103.6	93
Outer Southern District	230	109.1	97
Metropolitan Adelaide (excl. Gawler)	2,566	109.6	98
Hills Mallee Southern	306	109.6	98
South East	153	119.7	107
Wakefield	311	127.4	114*
Mid North	81	100.9	90
Riverland	92	122.2	109
Eyre	97	129.8	116
Northern & Far Western	107	115.5	103
Country South Australia (incl. Gawler)	1,147	117.8	105

¹ Rate is the number of cancer incidences per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

There were 35% more new male cases of colorectal cancer in Charles Sturt - North-East than expected from the State rate (an SR of 135**, 86 cases) (Map 7.5). Other elevated ratios, although none of statistical significance, were in Port Adelaide Enfield - Port (an SR of 127, 33 cases) and - Coast (119, 84); Adelaide Hills - Ranges (125, 27); Tea Tree Gully - Hills (121, 35); Marion - North (119, 93); and West Torrens - West (117, 107).

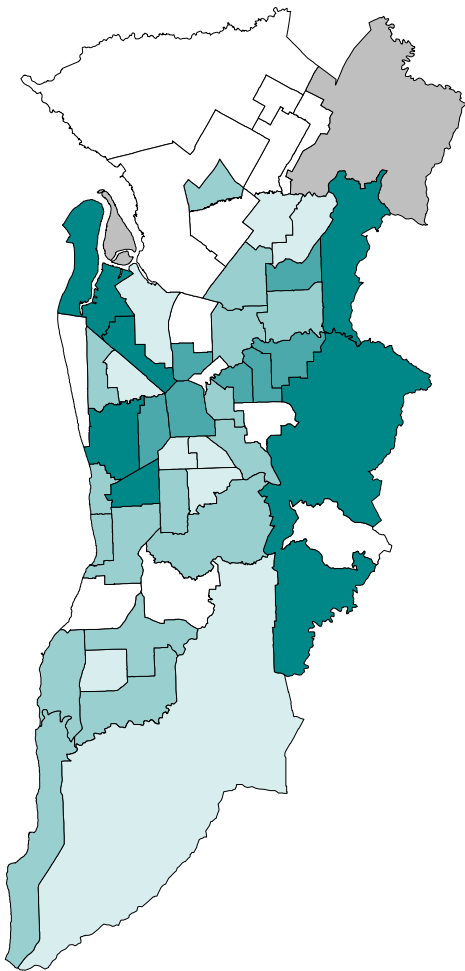
The SLAs with lower than expected ratios include Playford - West Central, - East Central, - West and - Elizabeth; Walkerville; Marion - South; Port Adelaide Enfield - Inner; Charles Sturt - Coastal; Salisbury Balance and - Central; Adelaide Hills - Central; Burnside - North-East; and Onkaparinga - Reservoir.

Country SA

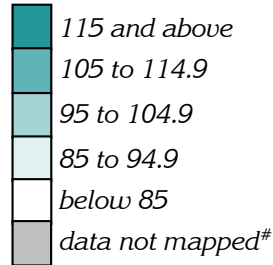
SLAs with elevated ratios in country SA (Map 8.6) included Renmark Paringa - Paringa (an SR of 208*, 9 cases), Streaky Bay (169, 9), Goyder (167*, 21), Kimba (165, 6), Robe (162, 7), Yorke Peninsula - South (149, 25), Port Lincoln (143*, 44), Wakefield (142, 27), Berri & Barmera - Berri (135, 20), Barossa - Barossa (132, 23), Kangaroo Island (131, 15), Ceduna (131, 9) and Murray Bridge (130*, 58).

The lowest ratios in country SA were in Grant; Loxton Waikerie - West; Adelaide Hills - North and Balance; Barossa - Tanunda; and Mount Remarkable.

Map 7.5 and Map 7.6: Colorectal cancer incidence for males, Metropolitan Adelaide and country SA, 2000 to 2005

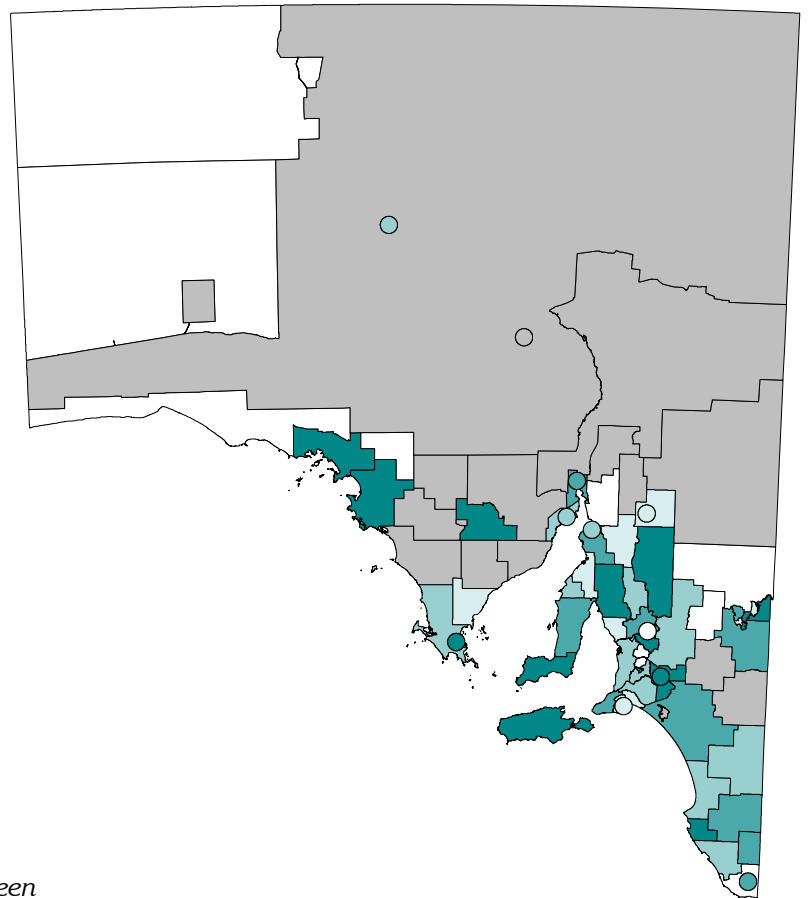


Standardised ratio (as an index)*, by SLA

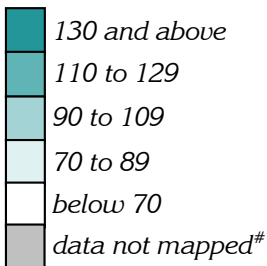


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100

Lung cancer

Lung cancer is primarily a preventable disease (31). Tobacco smoking is by far the main cause of lung cancer, with 90% of cases in men and 65% in women caused by smoking (32). The risk of lung cancer increases with years of smoking and amount smoked. Lung cancer occurs most often in older persons as it usually takes decades for cancer-causing agents in tobacco smoke to take full effect (33). Exposure to second hand smoke is a cause of lung cancer in non-smokers (32). Other factors known to increase lung cancer risk include occupational exposure to certain industrial carcinogens including asbestos (33).

The incidence of lung cancer is strongly related to age, increasing by over three times between the 50 to 59 and 60 to 69 year age groups, and more than doubling between the 60 to 69 and 70 to 79 year age groups for men, with slightly lower rates of increase for women (Figure 7.10). Apart from in the 40 to 49 year age group (with similar rates), incidence for men is substantially higher than for women in each age group.

There was a strong, continuous socioeconomic gradient evident in lung cancer incidence rates for males, with the rate in the lowest SES areas 55% higher than in the highest SES areas (Figure 7.11). Rates for females also showed a socioeconomic gradient, with 38% more new cases in the lowest SES areas compared to the highest SES areas: however, the gradient was not continuous, with the highest incidence rate in the second SES group.

In the Major Cities and Inner Regional areas, males had higher rates of new cases of lung cancer than females; however, in Remote and Very Remote areas, females had substantially higher rates, particularly so in the Very Remote areas. As a result, the rate of new cases for females in the Very Remote areas was almost eleven times (10.72) that in the Major Cities areas. This was the more remarkable given that, overall, lung cancer incidence for females was only 53% that of males. Despite being much lower, the ratio of the incidence rates for males between the Very Remote and Major Cities areas was still a substantial 1.68, indicating 68% more new cases of lung cancer in the most remote areas (Figure 7.12).

Lung cancer, South Australia, 2000-05

Figure 7.10: Lung cancer by age



Figure 7.11: Lung cancer by socioeconomic status of area and sex

Rate ratio: Male 1.55; Female 1.38

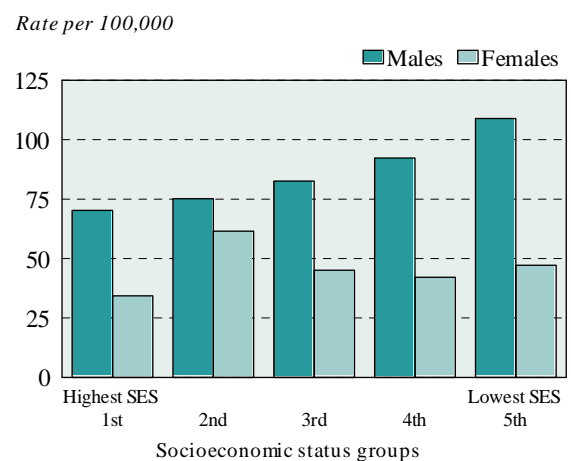
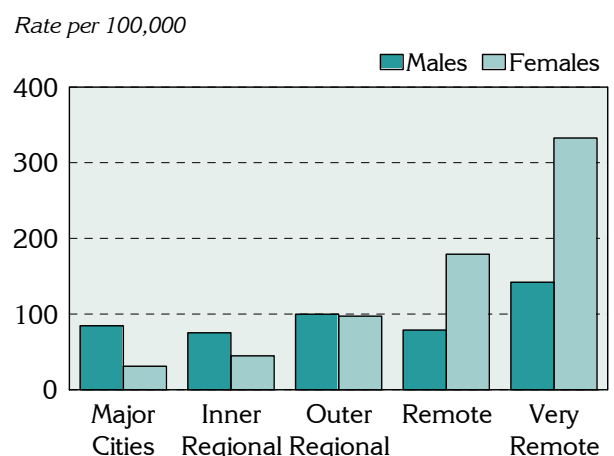


Figure 7.12: Lung cancer by remoteness

Rate ratio: Male 1.68 Females 10.72



Lung cancer incidence for males, 2000 to 2005

In the Central Northern Adelaide Health Region, the number of new cases of lung cancer among males was at the level expected from the State rate (a standardised ratio (SR) of 100, 1,400 cases). This overall ratio hides variations at the sub-region level, and the more substantial variations at the SLA level described below. Similarly, in Southern Adelaide Health Region, there were 6% fewer cases than expected (an SR of 94, 575 cases), with marked variations between districts and SLAs.

In country South Australia, Northern & Far Western had a highly elevated ratio (SR of 154**), and, in Riverland, there were 15% more new cases than expected (an SR of 115). The lowest ratio was in Hills Mallee Southern (an SR of 89).

Table 7.5: Incidence of lung cancer for males, by Health Region, South Australia, 2000-05

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	1400	85.8	100
Northern sub-region	565	95.8	112**
Western sub-region	460	85.9	100
Central East sub-region	375	74.2	87**
Southern Adelaide	575	80.3	94
Urban Beaches District	293	82.7	97
Hills District	98	62.7	73**
Outer Southern District	184	89.5	105
Metropolitan Adelaide (excl. Gawler)	1974	84.2	98
Hills Mallee Southern	212	75.8	89
South East	111	88.2	103
Wakefield	223	90.9	106
Mid North	68	84.3	98
Riverland	74	98.9	115
Eyre	59	79.5	93
Northern & Far Western	117	131.5	154**
Country South Australia (incl. Gawler)	864	89.1	104

¹ Rate is the number of cancer incidences per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The geographic distribution of new cases of lung cancer at the SLA level (Map 7.7) was strongly associated with the distribution of the socioeconomically disadvantaged population.

SLAs with the highest incidence included Salisbury - Inner North (with twice the number of cases expected from the State rate, an SR of 203**, 46 cases) and - North-East (140*, 47); Playford - West Central (140, 23) and - Elizabeth (129*, 64); Port Adelaide Enfield - Inner (137*, 61), - Park (128, 48) and - Port (126, 25); Charles Sturt - North-East (121, 60); Onkaparinga - Hackham (117, 21); and Mitcham - West (116, 56).

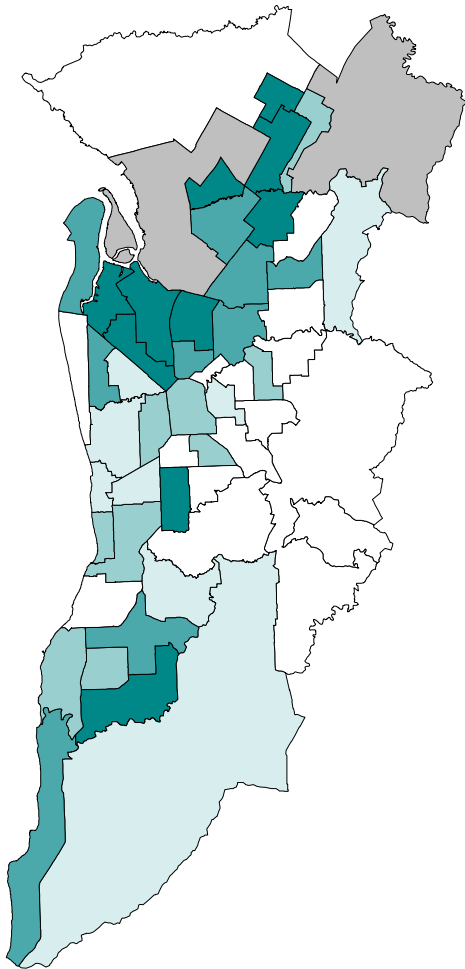
Lower than expected ratios were recorded for Adelaide Hills - Ranges and - Central; Mitcham - Hills and - North-East; Walkerville; Tea Tree Gully - North and - South; Charles Sturt - Coastal; Salisbury Balance; Playford - West; Burnside - North-East and - South-West; Campbelltown - East; Marion - South; Unley - West; Norwood Payneham St Peters - East; and Holdfast Bay - North.

Country SA

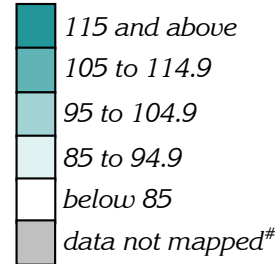
Highly elevated ratios were recorded in Unincorporated Far North (with over twice the number of cases expected from the State rate, an SR of 228*, 8 cases); Coober Pedy (209*, 11); Ceduna (191*, 9); Whyalla (155**, 56); Renmark Paringa - Paringa (147, 5); Mid Murray (146*, 30); Tumby Bay (144, 10); Copper Coast (141*, 44); Yorke Peninsula - South (141, 18) and - North (138, 31); Port Augusta (139, 31); Kingston (136, 7); and Goyder (135, 13) (Map 7.8).

SLAs with the lowest ratios were Mount Barker - Balance, Clare and Gilbert Valleys, Northern Areas, Adelaide Hills - North and Barossa - Angaston. Maralinga Tjarutja, Kimba and Unincorporated Pirie all recorded zero cases of lung cancer.

Map 7.7 and Map 7.8: Lung cancer incidence for males, Metropolitan Adelaide and country SA, 2000 to 2005

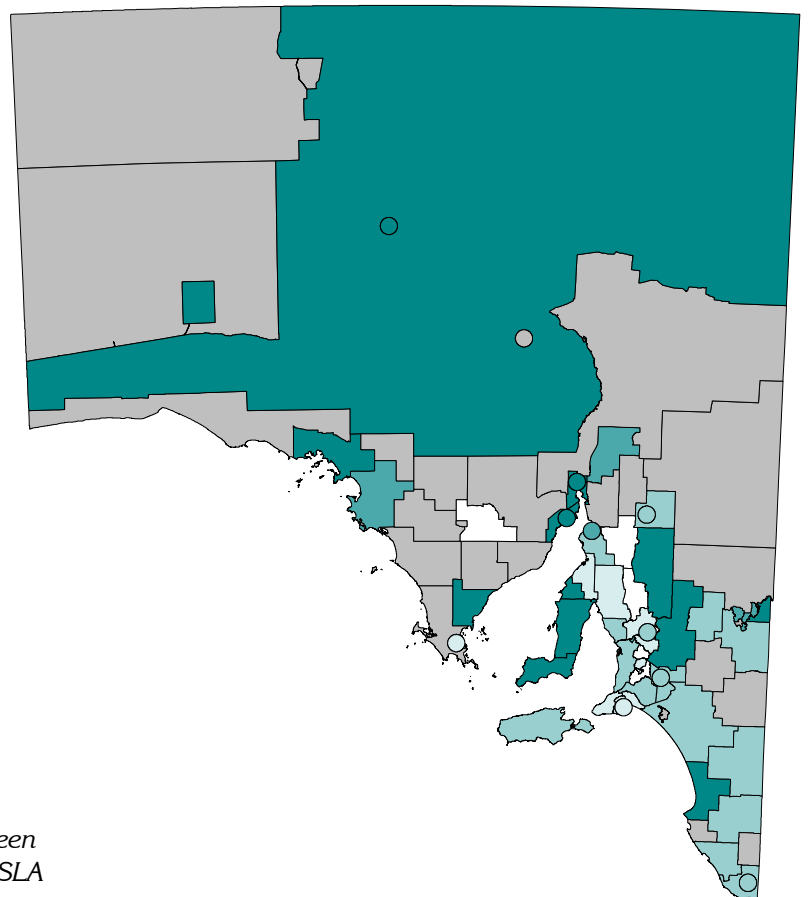


Standardised ratio (as an index)*, by SLA

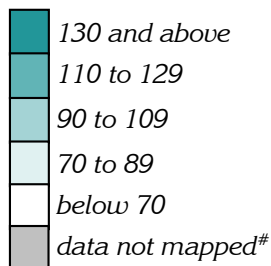


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100

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8. Disability

The 2006 ABS Population Census included, for the first time, a series of questions on an individual's core activity need for assistance. The responses to these questions were used to measure the number of persons with a profound or severe disability. People with a profound or severe disability are defined as those people needing help or assistance in one or more of the three core activity areas of self-care, mobility and communication because of a disability, long term health condition (lasting six months or more), or old age. Those requiring this help always were classified as having a profound disability; and those requiring it sometimes, as having a severe disability.

The published figures from the ABS included all persons regarded as having a profound or severe disability, regardless of their living arrangements. The analysis presented in the following pages has been restricted to those living 'in the community': that is, people with a disability but living in long-term residential accommodation in nursing homes, accommodation for the retired or aged (not self-contained), hostels for the disabled and psychiatric hospitals have been excluded. The figures as published by the ABS (including those in long-term institutions) are available in the data sheets on the PHIDJ website.

The data do not include those with a moderate or mild disability.

For people at older ages, limitations in functioning are more likely to be associated with diseases and long-term conditions such as cardiovascular diseases, cancers, dementia, arthritis, and hearing and vision impairments (36).

Community-based services provide support for older people with additional needs who live at home or with their family. Such services, if effective, enable these people to remain in the community, an important alternative to institutional care (37).

There was a strong socioeconomic gradient evident in the data for both men and women (aged 65 years and over with a profound or severe disability who were living in the community), with differentials of 43% for men, and 40% for women between the lowest and highest SES areas (Figure 8.1).

There was also a marked gradient in rates when analysed by remoteness (Figure 8.2). Although the lowest rates for both men and women were in the Inner Regional areas, the differential in rates between the Very Remote and Major Cities areas were 19% for males and 22% for females.

People aged 65 years and over with a profound or severe disability, living in the community, South Australia, 2006

Figure 8.1: By socioeconomic status of area and sex

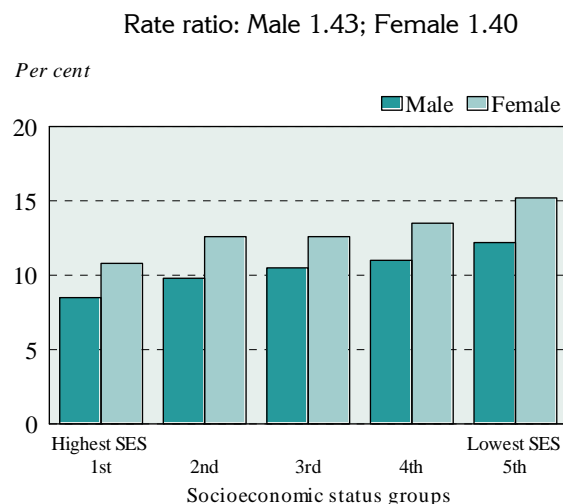
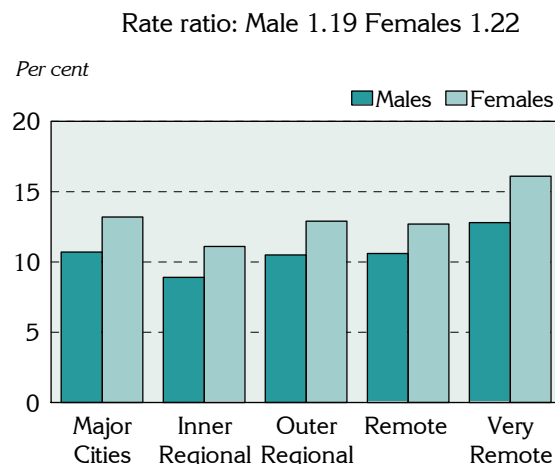


Figure 8.2: By remoteness and sex



People aged 65 years and over with a profound or severe disability and living in the community, 2006

There was greater variation at the health region level in the proportion of the female population in Metropolitan Adelaide aged 65 years and over with a profound or severe disability (who were living in the community) than was evident for males. Within the regions, the variation at the sub-region/district level was greater for males.

In country South Australia, the greatest variation between male and female rates was in Northern & Far Western Health Region, which was also the region with the highest proportion of the population aged 65 years and over with a profound or severe disability (who were living in the community).

Table 8.1: People aged 65 years and over with a profound or severe disability and living in the community, by Health Region, South Australia, 2006

Health Region	Males		Females	
	Number ¹	Per cent ²	Number ¹	Per cent ²
Central Northern Adelaide	5,489	11.0	9,080	13.7
Northern sub-region	2,015	10.8	3,085	13.3
Western sub-region	1,994	12.3	3,269	15.2
Central East sub-region	1,480	9.7	2,726	12.6
Southern Adelaide	2,122	10.0	3,408	11.9
Urban Beaches District	1,047	10.2	1,856	12.3
Hills District	373	8.1	519	12.2
Outer Southern District	702	11.0	1,033	13.2
Metropolitan Adelaide (excl. Gawler)	7,611	10.7	12,488	13.2
Hills Mallee Southern	838	8.9	1,217	11.5
South East	368	9.5	609	12.6
Wakefield	756	9.6	1,057	11.7
Mid North	302	11.6	398	13.2
Riverland	230	9.9	320	11.5
Eyre	245	10.7	304	12.0
Northern & Far Western	322	11.9	434	15.2
Country South Australia (incl. Gawler)	3,061	9.8	4,339	12.2
South Australia	10,672	10.4	16,827	12.9

¹ Rate is the number of people aged 65 and over with a profound or severe disability and living in the community per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide: Men

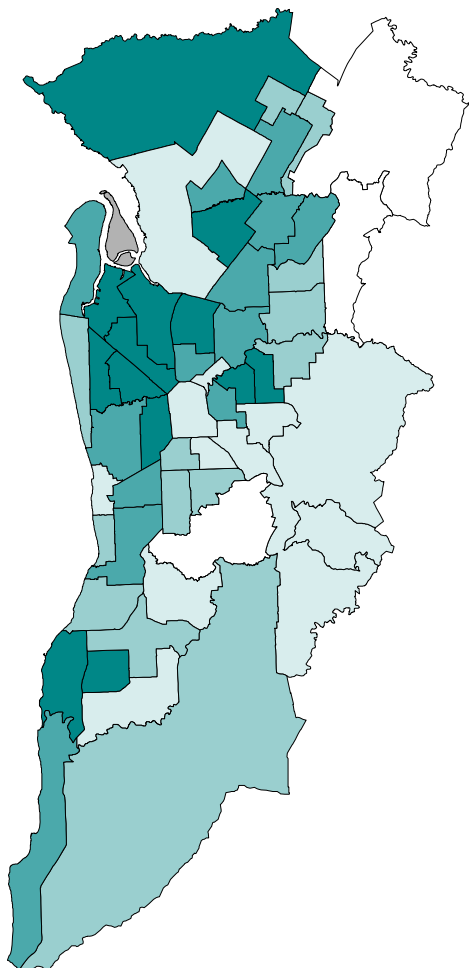
The SLAs with the highest proportions of the male population aged 65 years and over with a profound or severe disability (who were living in the community) included many of those of greatest socioeconomic disadvantage (Map 8.1). Of particular note were the SLAs of Port Adelaide Enfield - Park, - Port and - Inner (16.0%, 14.5% and 13.3%, respectively); West Torrens - East (14.1%); Charles Sturt - Inner West and - North-East (13.4% and 13.2%, respectively); and Norwood Payneham St Peters - East (13.1%). The lowest proportions were in Playford - Hills (2.3%), Mitcham - Hills and Tea Tree Gully - Hills (both 6.8%).

Country SA: Men

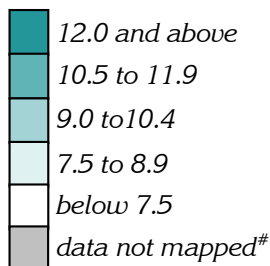
Areas in country South Australia (Map 8.2) with the highest proportions of the population aged 65 years and over with a profound or severe disability (who were living in the community) were widely spread, and included the remote SLAs of Anangu Pitjantjatjara and Maralinga Tjarutja, with proportions of 29.5% (18 men) and 100% (all five men³), respectively. Other areas with relatively high proportions were Franklin Harbour, Le Hunte and Elliston on the Eyre Peninsula, with 20.0%, 18.3% and 17.6%, respectively; Orroroo/Carrieton and Unincorporated Flinders Ranges (19.6% and 17.6%, respectively); Southern Mallee and Karoonda East Murray (16.4% and 15.3%, respectively); and Kangaroo Island (14.2%).

³ This latter figure may well be accurate; however, numbers reported from the Census are randomly adjusted by ABS to protect confidentiality, and the number of men in the SLA – either the total number or the number categorised as having a disability, may have been altered by a factor of one.

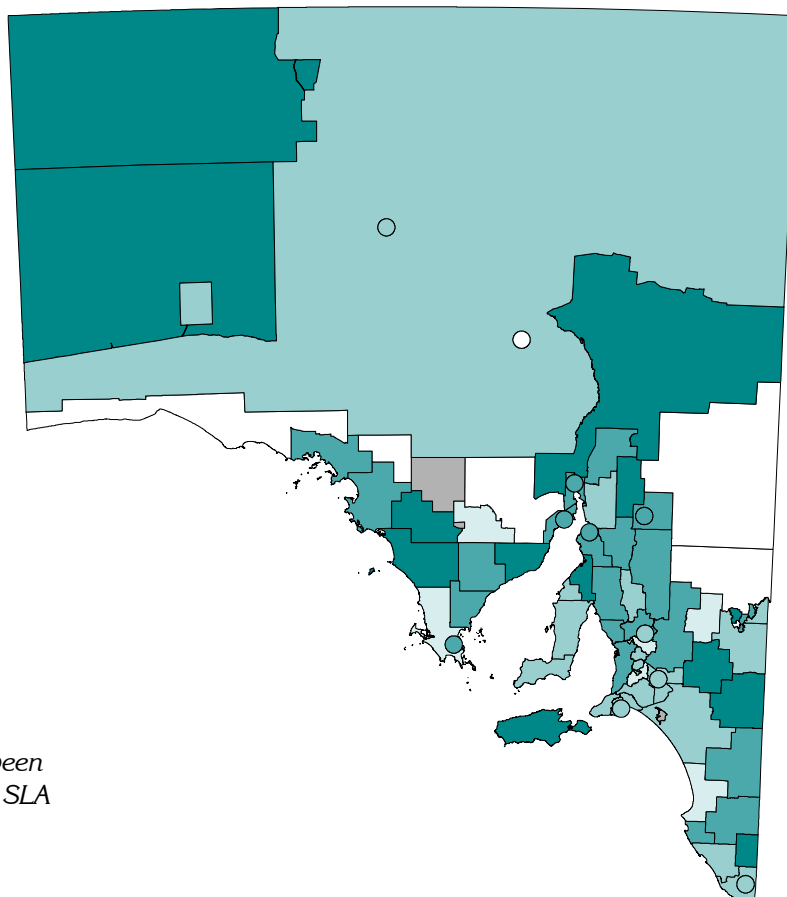
Map 8.1 and Map 8.2: Men aged 65 years and over with a profound or severe disability and living in the community, Metropolitan Adelaide and country SA, 2006



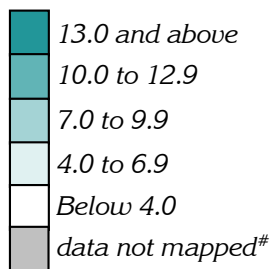
Per cent*, by SLA



[#] Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100



Per cent, by SLA



[#] Data not mapped because there were between one to four cases over the time period; or the SLA has a population of less than 100

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9. Premature and avoidable mortality

Premature death rates in South Australia over the period 2001 to 2005 were higher for males than females in each of the age groups examined. The largest differentials were in the 15 to 24 and 25 to 44 year age groups, where the rates for males were more than twice those for females. Overall, premature death rates for males were 68% higher than for females (a rate ratio of 1.68) (Table 9.1).

Cancer was the leading cause of death for both males and females at these ages in South Australia, followed by deaths from diseases of the circulatory system (Figure 9.1). External causes and diseases of the respiratory system were the next highest identifiable contributors. For all major causes, the rate of premature mortality was higher for males than for females: for external causes, it was more than three times the rate (a rate ratio of 3.12) and, for circulatory system diseases, it was more than twice the rate for females (2.26).

There are also sub-groups of males in the population who are more likely to die prematurely, especially Aboriginal males (whose life expectancy is much lower), those with low educational attainment, those who are un- or underemployed, homeless males, those living in rural and remote areas, and those with low socioeconomic status (4, 38). Almost three-quarters of deaths among people aged less than 75 years are considered to be largely avoidable (4).

Premature mortality in this analysis includes deaths occurring before the age of 75 years. In 2006, deaths at these ages comprised 40.1% of all male deaths in South Australia, and 24.2% of female deaths (ABS 2006). These relatively low proportions emphasise, perhaps, more than the data for life expectancy, that deaths before age 75 are premature: the life expectancy, at birth, in 2006 was 78.6 years for men and 83.6 years for women (35).

Premature deaths are more useful for a geographic analysis than total deaths for a number of reasons. From a technical point of view, fewer people are likely to have moved from the type of area that they have lived in over much of their life: by 'type of area' we mean the socioeconomic status of the area. Such movement often occurs when people move to live in group, or supported, accommodation, or in a nursing home, which is often in an area with a population with different socioeconomic characteristics. From a policy perspective, understanding the geographic distribution of premature deaths can assist in developing preventive care strategies, as well as in planning the delivery of services.

Table 9.1: Premature mortality 0 to 74 years, by age, sex and major cause, South Australia, 2001-2005

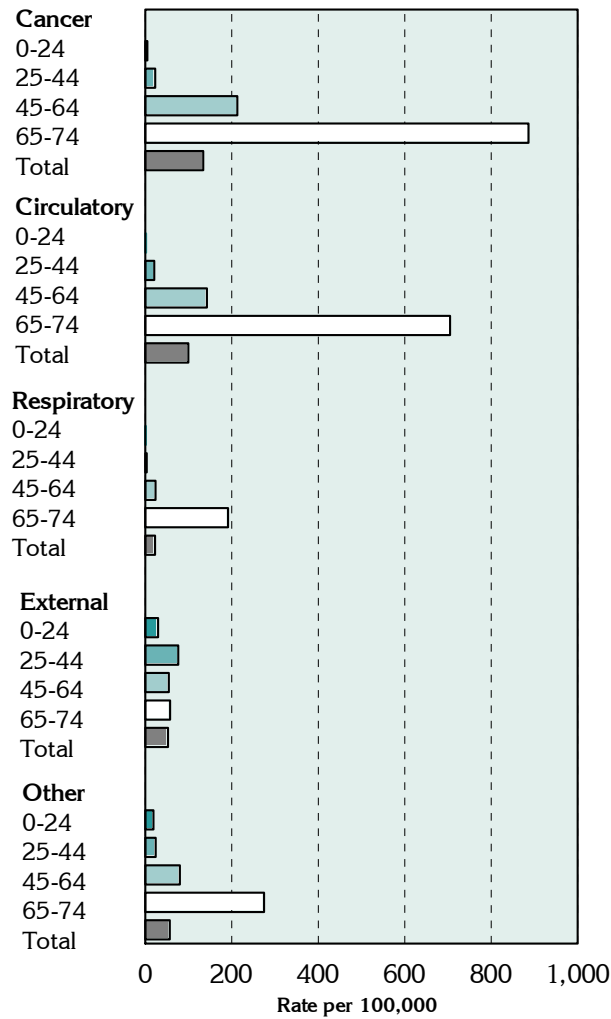
Variable	Males		Females		RR M:F ¹
	No.	Rate ²	No.	Rate ²	
Age (years)					
0-14	308	208.8	261	186.0	1.12
15-24	409	393.4	162	164.7	2.39
25-44	1,607	740.5	756	354.5	2.09
45-64	4,838	2,579.6	2,922	1,530.5	1.69
65-74	5,885	10,587.5	3,553	5,896.4	1.80
All ages	13,047	1,833.5	7,654	1,088.6	1.68
Major cause					
Cancer	4,770	134.1	3,606	102.6	1.31
Circulatory system	3,545	99.6	1,547	44.0	2.26
Respiratory system	808	22.7	523	14.9	1.52
External causes	1,876	52.7	595	16.9	3.12
Other	2,017	56.7	1,364	38.8	1.46
All causes	13,016	1,829.1	7,635	1,072.9	1.70

¹ RR M:F is the ratio of the rate for males to that for females

² Rate is the number of deaths per 100,000 population

Figure 9.1 shows premature mortality rates for males for selected causes and age groups over the period 2001 to 2005. For the majority of these causes, the highest rates were seen in the 65 to 74 year age group; the exception was for external causes, where the highest rate occurred in the 25 to 44 year age group. The data from which this chart was produced are in Table A2, in the Appendix.

Figure 9.1: Male deaths at ages 0 to 74 years by selected causes and ages, 2001-05
Average annual rates



Premature mortality – all causes

As noted above, death rates before 75 years of age are higher for males than females in each age group shown, with the largest differentials in the 15 to 24 and 25 to 44 year age groups, where the rates for males are more than twice those for females (Figure 9.2). The rate of premature death increases with age, with the growth between age groups becoming larger at each older age.

Rates of premature death also increased with increasing socioeconomic disadvantage, for both males and females, with rates in the most disadvantaged areas more than one and a half times higher than in the least disadvantaged areas (70% higher for males and 57% higher for females) (Figure 9.3). Rates were higher for men in all socioeconomic status groups.

Similarly, premature death rates were much higher among men than females in each remoteness area (Figure 9.4). Rates in the Very Remote areas were almost twice those in the Major Cities areas for both males and females (male rate ratio, 1.95; female rate ratio, 1.83).

Premature mortality, South Australia, 2001-05 average yearly rates

Figure 9.2: By age and sex

Average yearly rate per 100,000

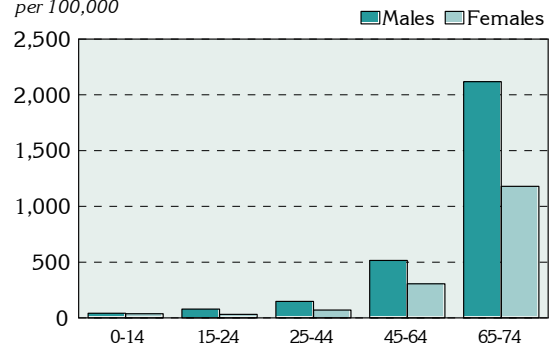


Figure 9.3: By socioeconomic status of area and sex

Rate ratio: Male 1.70; Female 1.57

Rate per 100,000

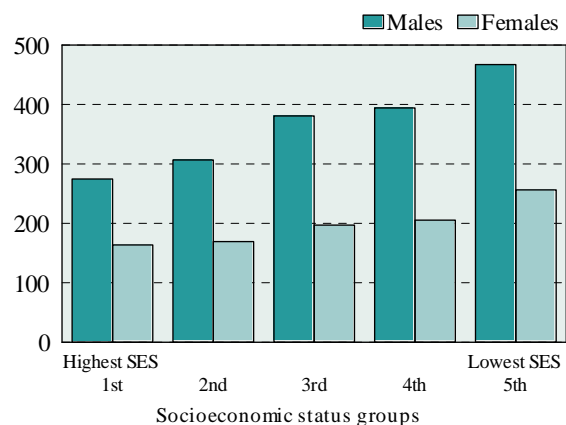
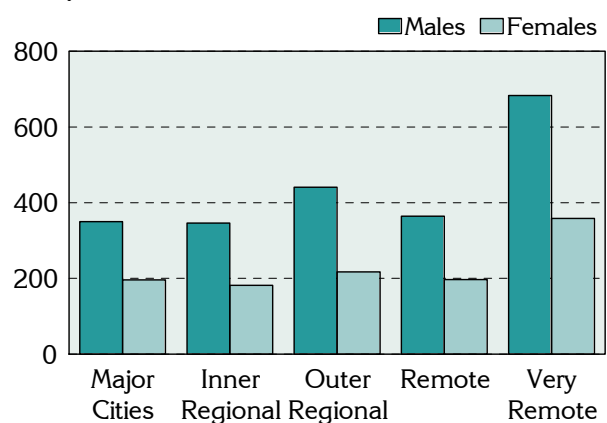


Figure 9.4: By remoteness and sex

Rate ratio: Male 1.95; Female 1.83

Rate per 100,000



Deaths of males aged 0-74 years, all causes, 2001 to 2005

In the Central Northern Adelaide Health Region, male mortality before 75 years of age was marginally below the level expected from the State rate for this five-year period (a standardised ratio (SR) of 99, 6,377 deaths), while in the Southern Adelaide Health Region, the ratio was 15% lower than expected (an SR of 85**, 2,308 deaths). At the sub-region/district level, the lowest ratio was in Hills District, with 42% fewer deaths than expected (an SR of 58**); and the highest was in Western sub-region, with 10% more deaths than expected (an SR of 110**).

With the exception of Hills Mallee Southern (an SR of 94*, 1,040 deaths), all country South Australia health regions had elevated ratios for male premature mortality. The most highly elevated ratios were in Northern & Far Western (150**) and Mid North (131**).

Table 9.2: Deaths of males, all causes, 0 to 74 years, by Health Region, South Australia, 2001-2005

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	6,377	364.4	99
Northern sub-region	2,711	373.7	102
Western sub-region	2,035	402.0	110**
Central East sub-region	1,631	314.8	86**
Southern Adelaide	2,308	311.1	85**
Urban Beaches District	1,067	334.1	91**
Hills District	375	214.0	58**
Outer Southern District	866	350.0	95
Metropolitan Adelaide (excl. Gawler)	8,685	348.5	95**
Hills Mallee Southern	1,040	343.4	94*
South East	566	395.3	108
Wakefield	973	373.3	102
Mid North	402	482.0	131**
Riverland	338	420.4	115*
Eyre	354	434.0	118**
Northern & Far Western	627	549.0	150**
Country South Australia (incl. Gawler)	4,300	403.3	110**

¹ Rate is the number of deaths per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The SLAs with the most highly elevated ratios of premature mortality for males were Playford - Elizabeth (an SR of 148**, 330 deaths) and - West Central (144**, 133); Port Adelaide Enfield - Coast (147**, 355) and - Park (137**, 172); Charles Sturt - North-East (138**, 279); and Adelaide (135**, 160) (Map 9.1).

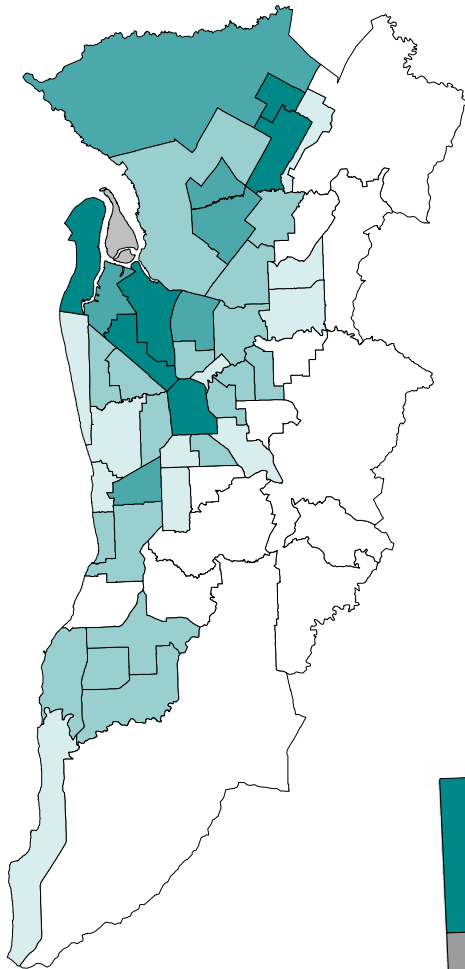
The areas with the lowest ratios included Adelaide Hills - Ranges and - Central; Mitcham - North-East and - Hills; Marion - South; Onkaparinga - Reservoir and - Hills; Tea Tree Gully - Hills and - North; Burnside - North-East; Campbelltown - East; and Playford - Hills.

Country SA

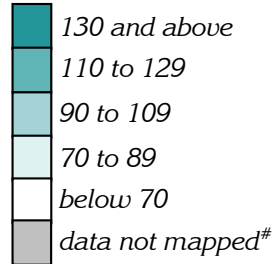
In country SA (Map 9.2), the highest ratios were in Anangu Pitjantjatjara (an SR of 272**, 37 deaths), Unincorporated West Coast (237**, 10), Ceduna (206**, 59), Unincorporated Far North (204**, 46), Flinders Ranges (193**, 37), Coober Pedy (187**, 55), Peterborough (178**, 41), Tumby Bay (160**, 48), Wattle Range - East (158**, 41), Port Augusta (157**, 180), Unincorporated Whyalla (149, 5), Port Pirie Districts - City (146**, 183), Orroroo/Carrieton (144, 13), Berri & Barmera - Barmera (136*, 57), Loxton Waikerie - West (133*, 56) and Barunga West (132, 41).

Areas with lower than expected ratios included Cleve, Alexandrina - Strathalbyn, Mount Barker Balance and Adelaide Hills - North.

Map 9.1 and Map 9.2: Deaths of males aged 0-74 years, all causes, Metropolitan Adelaide and country SA, 2001 to 2005

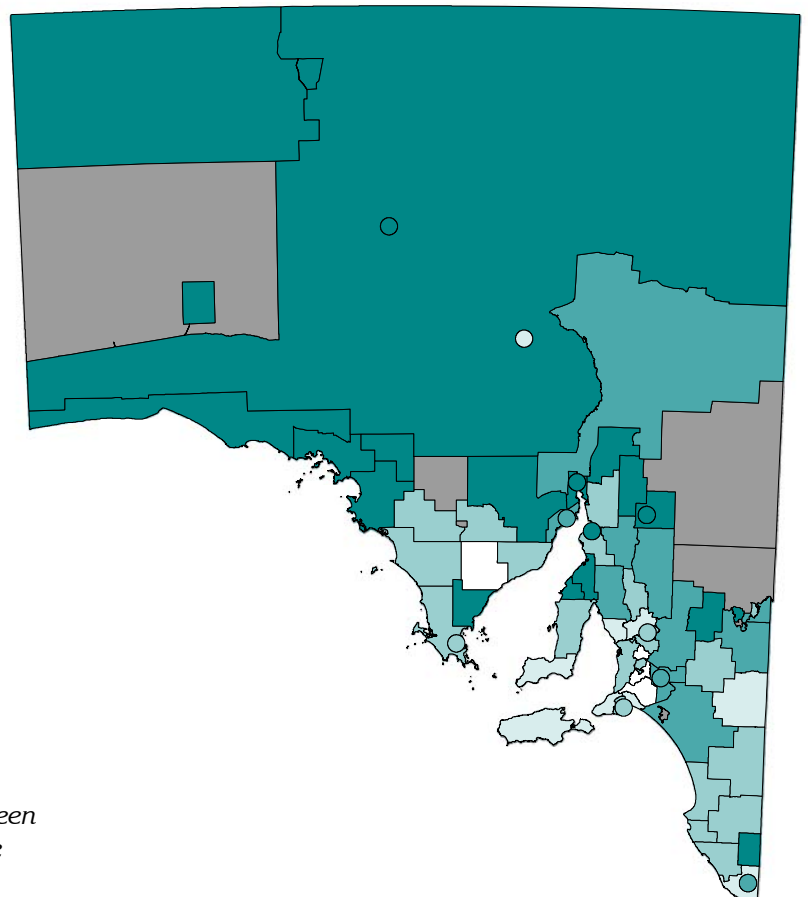


Standardised ratio (as an index)*, by SLA

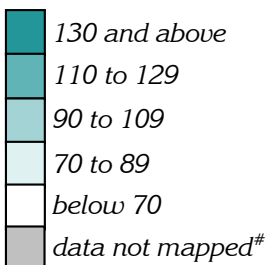


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100

Premature mortality – Cancer

Cancer is the leading cause of premature death in Australia (39). In 2003, the five most common cancer deaths in males were from lung cancer (4,506 deaths), prostate cancer (2,837), colorectal cancer (2,382), unknown primary site (1,567), and pancreatic cancer (942). These five cancers accounted for 58% of all deaths from cancer in males (4).

Death rates from cancer were low before 45 years of age, from when rates increased markedly for both men and women (Figure 9.5). The higher rate for men in the 45 to 64 year age group was substantially larger in the 65 to 74 year age group.

Rates increased in a stepwise fashion with increasing disadvantage, to be 47% higher in the lowest SES areas than in the highest SES areas, for males; and 24% higher for females (Figure 9.6).

Premature deaths of males from cancer also increased with remoteness, with rates in the Very Remote areas just over 30% higher than in the Major Cities areas (a rate ratio of 1.31) (Figure 9.7). For females, the differential was only small, at 7%.

Premature mortality – Cancer causes, South Australia, 2001-05 average yearly rates

Figure 9.5: By age and sex

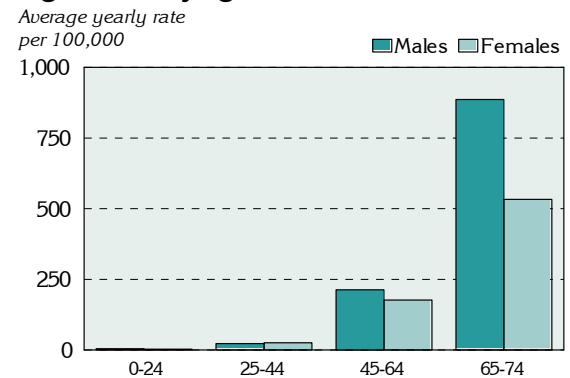


Figure 9.6: By socioeconomic status of area

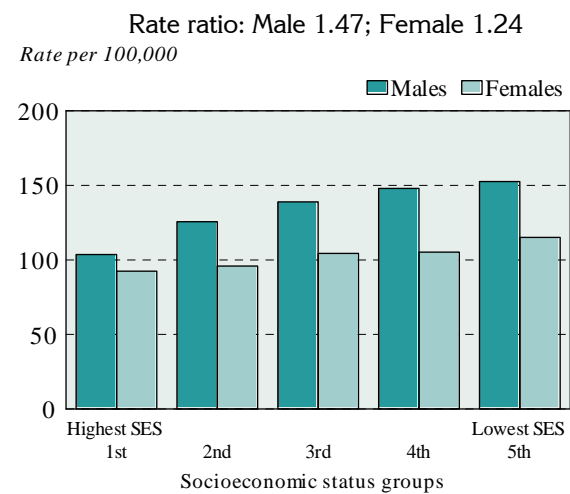
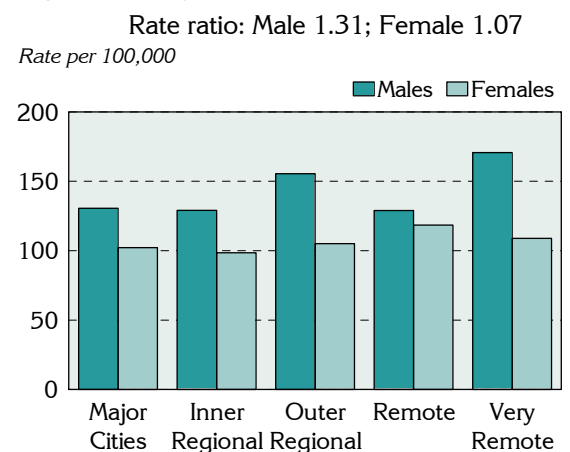


Figure 9.7: By remoteness



Deaths of males aged 0-74 years from cancer, 2001 to 2005

In both the Central Northern Adelaide (with a standardised ratio (SR) of 99, 2,311 deaths) and Southern Adelaide (an SR of 93*, 921 deaths) Health Regions, premature death rates from cancer over this five-year period were below the State average for males aged 0 to 74 years. There was considerable variation in rates at the sub-region/district level in both regions.

There were more deaths of males from cancer before 75 years of age than were expected from the State rate in country health regions, other than in Hills Mallee Southern and Wakefield, although only the ratio in Northern & Far Western was statistically significant.

Table 9.3: Deaths of males aged 0-74 years from cancer, by Health Region, South Australia, 2001-2005

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	2,311	133.2	99
Northern sub-region	970	136.9	102
Western sub-region	753	148.4	111**
Central East sub-region	588	113.4	85**
Southern Adelaide	921	124.3	93*
Urban Beaches District	426	132.8	99
Hills District	162	91.5	68**
Outer Southern District	333	137.2	102
Metropolitan Adelaide (excl. Gawler)	3,232	130.6	97
Hills Mallee Southern	408	130.8	98
South East	213	150.3	112
Wakefield	345	128.7	96
Mid North	135	156.1	116
Riverland	126	156.2	117
Eyre	124	152.1	113
Northern & Far Western	184	163.9	122**
Country South Australia (incl. Gawler)	1,535	141.8	106*

¹ Rate is the number of deaths per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The SLAs with the most highly elevated levels of cancer deaths for men at ages 0 to 74 years (Map 9.3) included Port Adelaide Enfield - Coast (an SR of 146**, 128 deaths) and - Park (126, 57); Charles Sturt - North-East (137**, 98) and - Inner East (116, 81); Playford - Elizabeth (126*, 103) and - West Central (115, 37); Onkaparinga - Woodcroft (126*, 110); and Salisbury - Inner North (122, 62) and - North-East (117, 78).

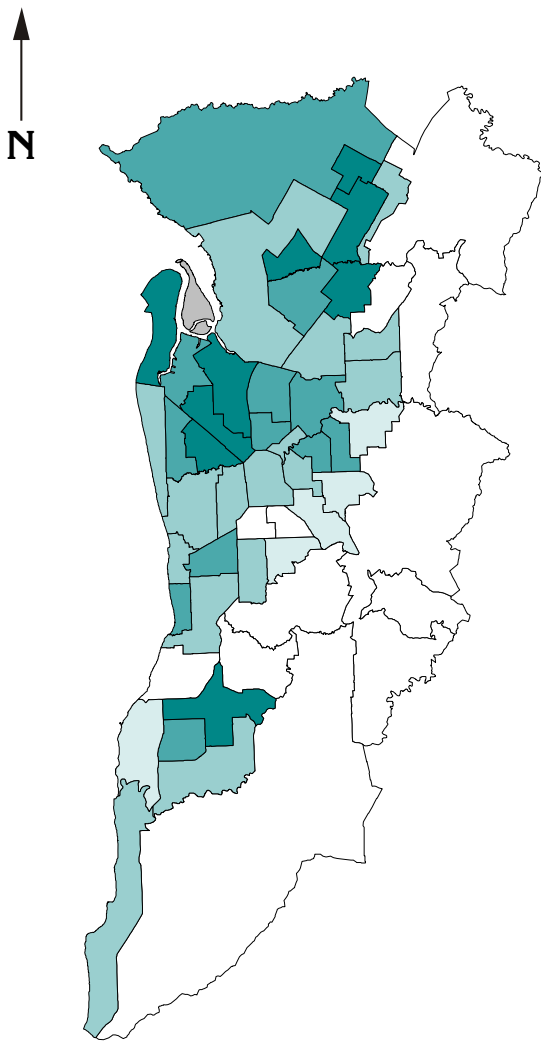
The lowest ratios recorded were in Adelaide Hills - Central and - Ranges; Onkaparinga - Hills and - Reservoir; Mitcham - Hills; Unley - East and - West; Marion - South; Tea Tree Gully - Hills and - North; and Playford - Hills.

Country SA

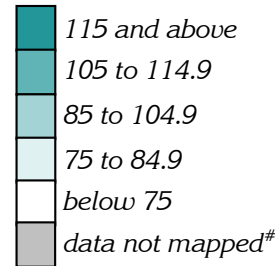
For country SA (Map 9.4), SLAs with the highest ratios included Loxton Waikerie - West (an SR of 167**, 26 deaths); Ceduna (166*, 17); Unincorporated Flinders Ranges (162, 5); Renmark Paringa - Paringa (150, 10); Wattle Range - East (149, 14); Coober Pedy (147, 17); Mid Murray (147**, 56); Le Hunte (143, 6); Streaky Bay (140, 9); Port Pirie Districts Balance (139, 18) and - City (135*, 63); Tumby Bay (138, 16); Flinders Ranges (136, 10); Barunga West (132, 16); Whyalla (129*, 89); Robe (128, 7); Yorke Peninsula - North (123, 46); Port Augusta (122, 51); and Peterborough (122, 11).

The lowest ratios were recorded in Kangaroo Island, Light, Southern Mallee and Northern Areas.

Map 9.3 and Map 9.4: Deaths of males aged 0-74 years from cancer, Metropolitan Adelaide and country SA, 2001 to 2005

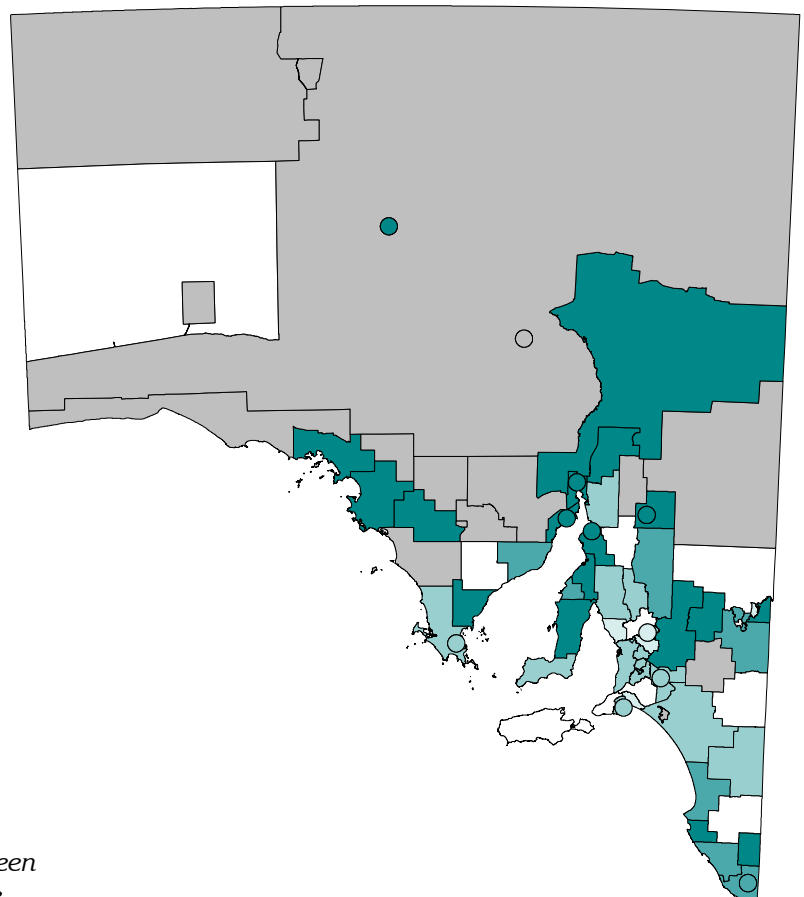


Standardised ratio (as an index)*, by SLA

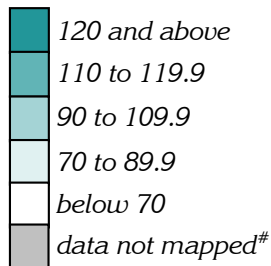


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100

Premature mortality – Circulatory system diseases

Circulatory system diseases are those related to the heart and blood vessels, including heart, stroke and vascular diseases. Among the specific causes of death, coronary heart disease is the greatest contributor to premature mortality among males; and tobacco smoking is the leading preventable cause of premature mortality from cardiovascular disease (4).

Of all males in Australia, Aboriginal men suffer the greatest burden of premature mortality, with diseases of the circulatory system being the leading cause of death (5). In 2001-2005, in Queensland, Western Australia, South Australia and the Northern Territory combined, approximately 75% of Indigenous males died before the age of 65 years. This was in stark contrast to the non-Indigenous population where only 26% of males died aged less than 65 years (5). The premature mortality (and higher morbidity) in Aboriginal Australians are mainly due to chronic diseases primarily attributable to social, economic and educational disadvantage, with associated higher prevalence of negative health-related behaviours (38).

Deaths from circulatory system diseases have a notable impact in the 45 to 64 year age group for men, with rates increasing substantially in the 65 to 74 year age group (Figure 9.8). Rates for women follow the same pattern, although at less than half the level for men.

Deaths increased with increasing socioeconomic disadvantage for both males and females (Figure 9.9). Rates for males were over twice those for females; however, the differential in death rates between the lowest and highest SES areas was slightly greater for females (a rate ratio of 2.07) than for males (1.94). Male rates were much higher than female rates in all SES groups.

Deaths of males from circulatory system diseases before 75 years of age showed a gradient in rates by remoteness, with a 49% higher death rate in the most remote areas than in Major Cities (Figure 9.10). For females, the reverse was the case across the first four remoteness areas, although the rate increased substantially to give a rate differential of 3.14.

Premature mortality - Circulatory system diseases, South Australia, 2001-05 average yearly rates

Figure 9.8: By age and sex

Average yearly rate per 100,000

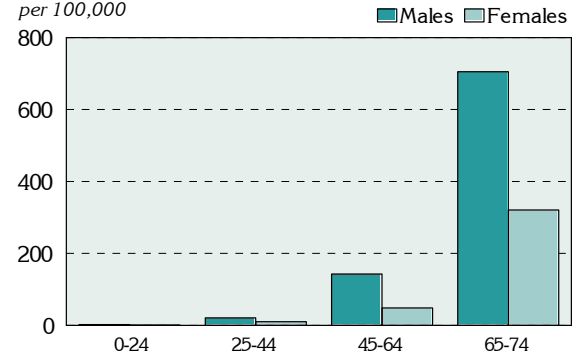


Figure 9.9: By socioeconomic status of area and sex

Rate ratio: 1.94; Female 2.07

Rate per 100,000

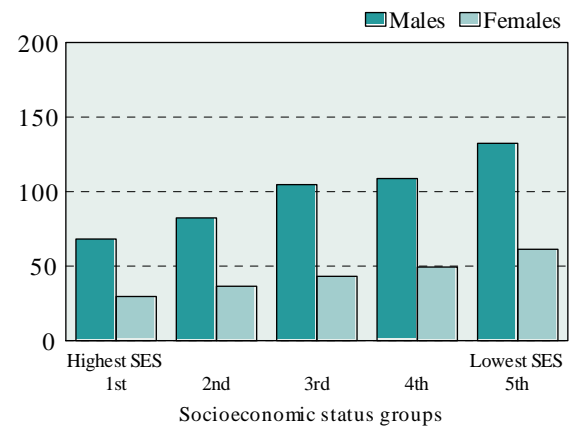
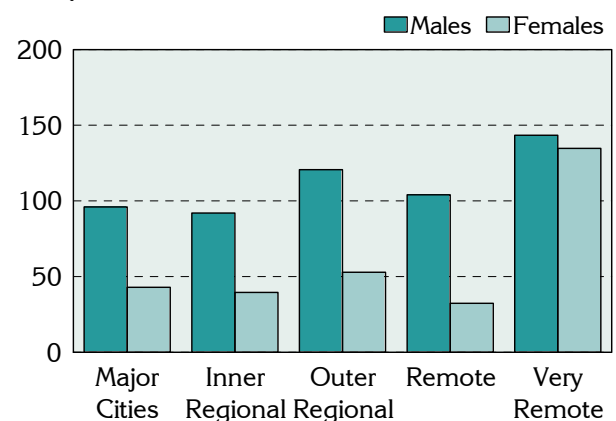


Figure 9.10: By remoteness and sex

Rate ratio: 1.49; Female 3.14

Rate per 100,000



Deaths of males aged 0-74 years from circulatory system diseases, 2001 to 2005

Males living in the Southern Adelaide Health Region had 16% fewer premature deaths from circulatory system diseases over this five-year period than expected (a standardised ratio (SR) of 84**, 616 deaths); the number in Central Northern Adelaide Health Region was as expected (an SR of 101, 1,745 deaths).

In country South Australia, there were more male deaths from these causes than expected in all health regions with the exception of Hills Mallee Southern (an SR of 87*, 271 deaths) and South East (100, 141): the highly elevated ratios in Northern & Far Western and Mid North were statistically significant.

Table 9.4: Deaths of males aged 0-74 years from circulatory system diseases, by Health Region, South Australia, 2001-2005

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	1,745	100.5	101
Northern sub-region	737	104.3	105
Western sub-region	576	112.6	113**
Central East sub-region	432	83.4	84**
Southern Adelaide	616	83.3	84**
Urban Beaches District	301	92.9	93
Hills District	78	44.7	45**
Outer Southern District	237	98.2	99
Metropolitan Adelaide (excl. Gawler)	2,361	95.3	96*
Hills Mallee Southern	271	87.0	87**
South East	141	99.6	100
Wakefield	291	108.5	109
Mid North	124	143.2	144**
Riverland	93	115.1	116
Eyre	90	110.4	111
Northern & Far Western	167	149.7	150**
Country South Australia (incl. Gawler)	1,177	108.8	109**

¹ Rate is the number of deaths per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

There were highly elevated ratios for male deaths from circulatory system diseases at these ages (Map 9.5) in the SLAs of Playford - West Central (an SR of 176**, 42 deaths) and - Elizabeth (154**, 95); Port Adelaide Enfield - Coast (156**, 102), - Park (144*, 49) and - Port (126, 29); Marion - North (149**, 87); Adelaide (145*, 44); Charles Sturt - North-East (143**, 77); and Onkaparinga - North Coast (127, 60).

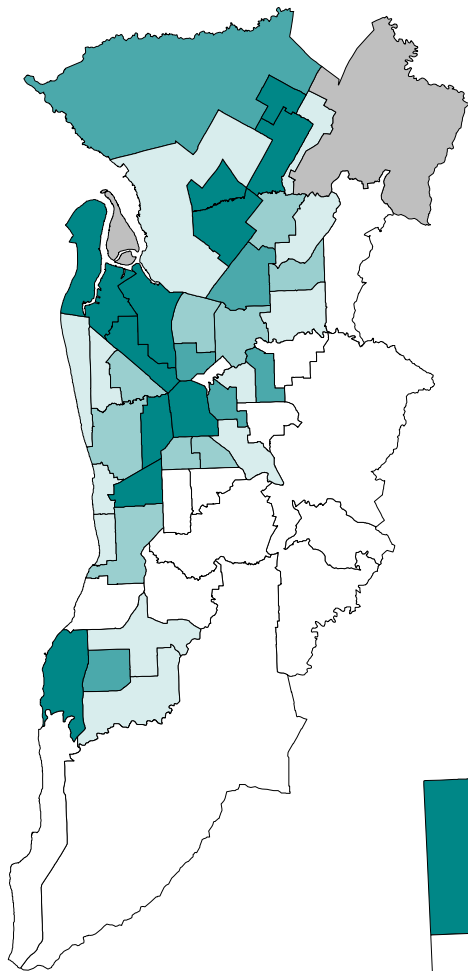
SLAs with the lowest ratios include Mitcham - Hills and - North-East; Adelaide Hills - Central and - Ranges; Marion - South; Burnside - North-East; Onkaparinga - Reservoir and - Hills; Campbelltown - East; Playford - Hills; Walkerville; and Tea Tree Gully - Hills.

Country SA

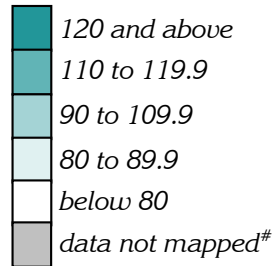
In country South Australia (Map 9.6), the highest recorded ratios were for Anangu Pitjantjatjara (an SR of 269**, 8 deaths); Orroroo/Carrieton (238*, 6); Peterborough (208**, 14); Tumby Bay (196**, 17); Unincorporated Far North (193*, 10); Flinders Ranges (181, 10); Port Augusta (179**, 55); Barunga West (177*, 16); Copper Coast (165**, 62); Wattle Range - East (161, 11); Coober Pedy (156, 13); Port Pirie Districts - City (153**, 53); Streaky Bay (148, 7); Berri & Barmera - Barmera (144, 17) and - Berri (133, 20); Northern Areas (139, 18); Barossa - Angaston (138, 26); Goyder (137, 17); and Mount Gambier (137*, 67).

Areas with the lowest ratios were Le Hunte; Alexandrina - Strathalbyn and - Coastal; Adelaide Hills - North; Mount Barker Balance; Franklin Harbour; Cleve; Grant; Yorke Peninsula - South; Roxby Downs; Light; and Naracoorte and Lucindale.

Map 9.5 and Map 9.6: Deaths of males aged 0-74 years from circulatory system diseases, Metropolitan Adelaide and country SA, 2001 to 2005

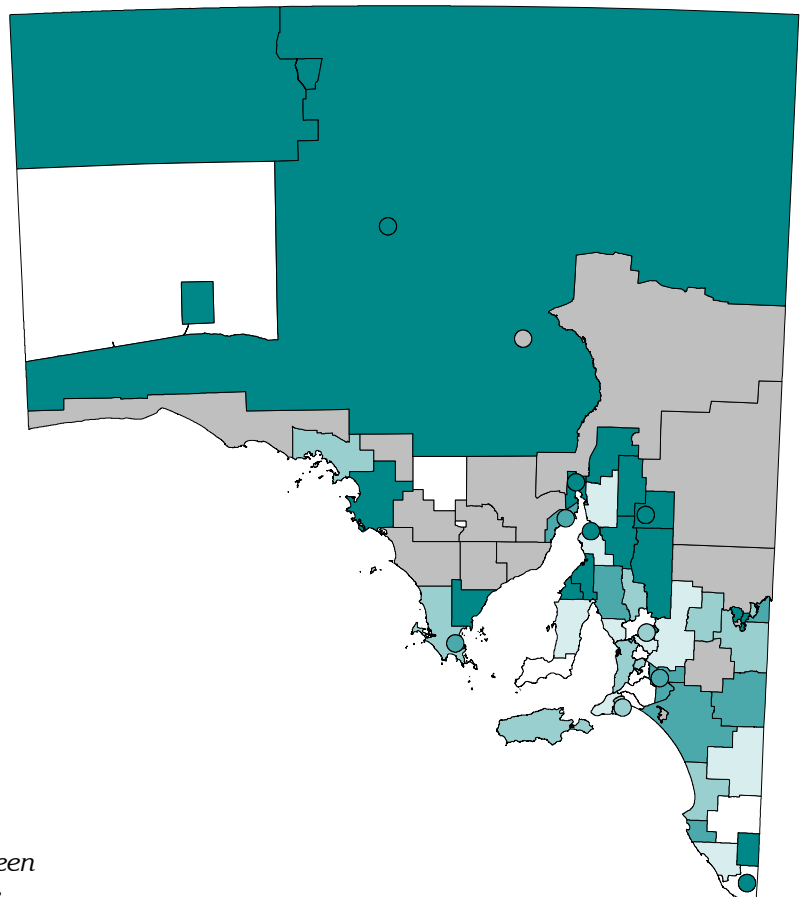


Standardised ratio (as an index)*, by SLA

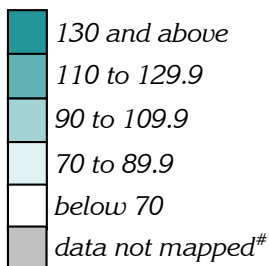


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100

Premature mortality – Respiratory system diseases

Respiratory system diseases include influenza and pneumonia, and chronic lower respiratory diseases (such as asthma, bronchitis and emphysema). Tobacco smoking is the leading preventable cause of premature mortality from chronic obstructive pulmonary disease (COPD).

Respiratory system diseases affect the Indigenous population at younger age groups than is the case for the non-Indigenous population, and this is reflected in the differences in age-specific death rates from these diseases. In 2001 to 2005, Indigenous males aged 35-54 years died from influenza and pneumonia at 18 times the rates of non-Indigenous males of the same age for these conditions. There were also large discrepancies between Indigenous and non-Indigenous mortality rates for chronic lower respiratory diseases (with a ratio of 14) (5).

Before 45 years, death rates from respiratory system diseases were low for both men and women (Figure 9.11). In both the 45 to 64 and 65 to 74 age groups, rates were higher for men, most notably in the latter age group, with a rate for men of 191.4 per 100,000 population, compared with a rate of 105.5 per 100,000 for women.

There was a clear socioeconomic gradient in mortality rates for both males and females, with rates increasing with increasing socioeconomic disadvantage (Figure 9.12). While the increase was relatively even for males, apart from the lower rate in the second SES group, for females it was largely confined to people in the lowest SES areas. Rates for males were higher than for females in all socioeconomic groups.

Premature death rates from respiratory system diseases were substantially higher in the Very Remote areas than in any other remoteness class, with a rate for males over two and a half times that in Major Cities (a rate ratio of 2.62); and, for females, almost twice the rate (1.99) (Figure 9.13).

Premature mortality - Respiratory system diseases, South Australia, 2001-05 average yearly rates

Figure 9.11: By age and sex

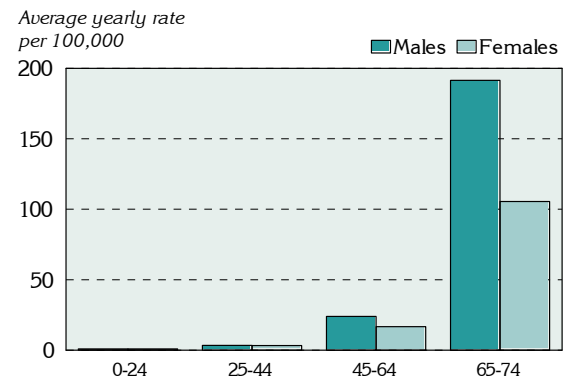


Figure 9.12: By socioeconomic status of area and sex

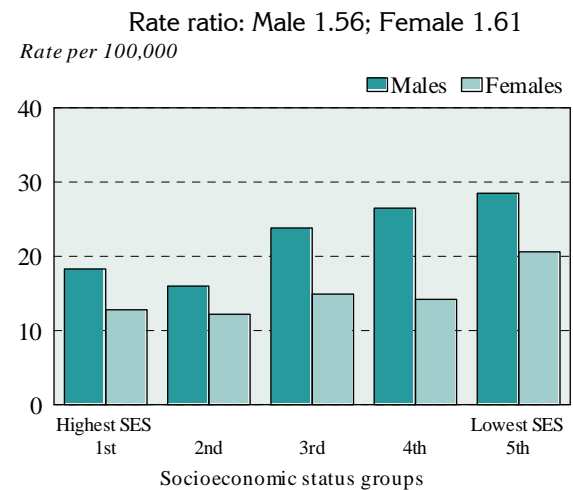
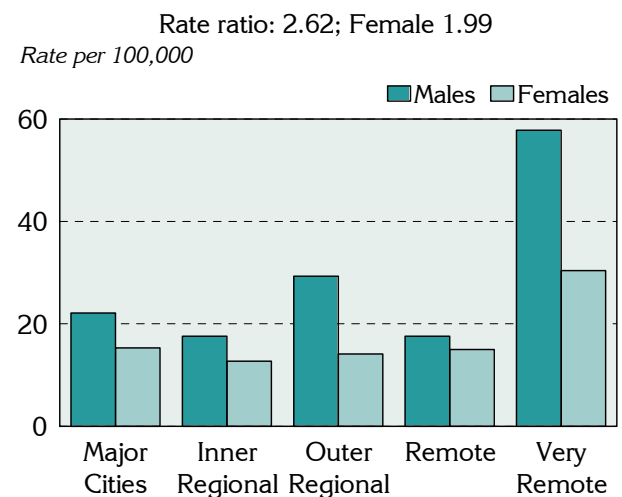


Figure 9.13: By remoteness and sex



Deaths of males aged 0-74 years from respiratory system diseases, 2001 to 2005

In the Central Northern Adelaide Health Region, premature deaths of males due to respiratory system diseases were 8% higher than the expected (an standardised ratio (SR) 108, 425 deaths): however the SR was not statistically significantly elevated. In Southern Adelaide Health Region, the ratio was 29% below the expected (an SR of 71**, 119 deaths), with the Hills District and Outer Southern District also with numbers of deaths well below the expected level.

In country South Australia, ratios in the Mid North (136, 27), Eyre (125, 23) and Northern & Far Western (212**, 53) Health Regions were all above the expected level, although only the latter was of statistical significance.

Table 9.5: Deaths of males aged 0-74 years from respiratory system diseases, by Health Region, South Australia, 2001-2005

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	425	24.4	108
Northern sub-region	175	24.9	110
Western sub-region	134	25.8	114
Central East sub-region	116	22.4	99
Southern Adelaide	119	16.2	71**
Urban Beaches District	69	21.0	92
Hills District	16	9.4	41**
Outer Southern District	34	14.3	63**
Metropolitan Adelaide (excl. Gawler)	544	22.0	97
Hills Mallee Southern	55	17.6	77
South East	27	19.2	85
Wakefield	61	22.6	100
Mid North	27	30.9	136
Riverland	17	21.1	93
Eyre	23	28.4	125
Northern & Far Western	53	48.2	212**
Country South Australia (incl. Gawler)	8,113	614.3	101

¹ Rate is the number of deaths per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

SLAs with ratios above the level expected (Map 9.7) included Unley - East (an SR of 281**, deaths 24); Charles Sturt - Inner East (177**, 22) and - North-East (162*, 20); Port Adelaide Enfield - East (177**, 29), - Coast (142, 21), and - Inner (139, 14); Playford - West Central (165, 9), and - Elizabeth (149, 22); Salisbury - Central (163*, 20); Norwood Payneham St Peters - West (162, 13) and - East (153, 14); Marion - North (146, 20); and Walkerville (137, 6).

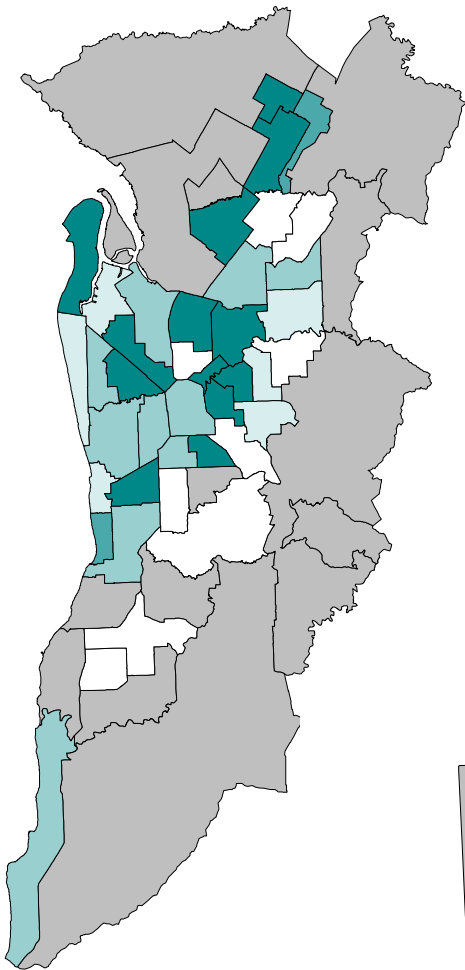
Areas with the lowest ratios were Onkaparinga - Woodcroft and - Morphett; Mitcham - West and - Hills; Prospect; Campbelltown - East; Tea Tree Gully - North; Salisbury - North-East; and Burnside - South-West.

Country SA

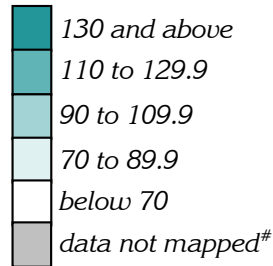
In country South Australia (Map 9.8), ratios were highly elevated for Ceduna (an SR of 599**, 10 deaths), Flinders Ranges (462**, 6), Mount Remarkable (345**, 8), Whyalla (206**, 24) and Port Augusta (203**, 14). Ratios were also higher than the expected for Wakefield (an SR of 179, 7 deaths), Loxton Waikerie - East (177, 7), Copper Coast (170*, 15) and Port Pirie Districts - City (138, 11).

SLAs with lower than expected ratios were Alexandrina - Coastal and Victor Harbor.

Map 9.7 and Map 9.8: Deaths of males aged 0-74 years from respiratory system diseases, Metropolitan Adelaide and country SA, 2001 to 2005

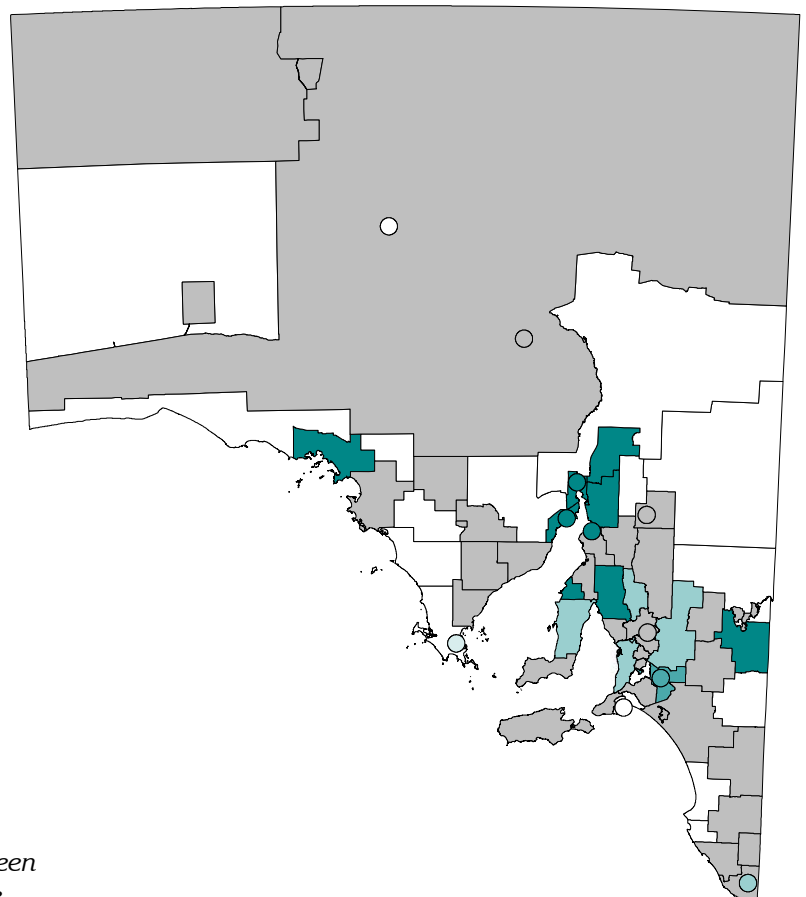


Standardised ratio (as an index)*, by SLA

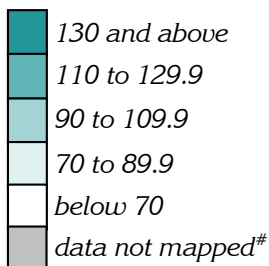


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100

Premature mortality - External causes

External causes relate to cases where the underlying cause of death is determined to be one of a group of causes external to the body. Examples are suicides, transport accidents, falls, poisoning and drownings (40).

For the period 2001-2005, deaths due to external causes accounted for 16% of all Indigenous deaths, compared with 6% of all deaths among non-Indigenous Australians (5). For both populations, males accounted for around 70% of the total deaths due to external causes. For Indigenous males, the leading causes of death from external causes were intentional self-harm (35%), transport accidents (27%) and assault (8%). For most age groups, the age-specific death rates for Indigenous males were two to three times the corresponding rates for non-Indigenous males (5).

Premature mortality from external causes is far more common for males than for females in each of the age groups shown, with the largest difference at ages 25 to 44 years, where males have four times the rate of females (Figure 9.14). This was also the age group with the highest rate for men: for women, the rate was highest in the 65 to 74 year age group.

Rates of premature mortality showed a clear pattern of increases in deaths from external causes with increasing socioeconomic disadvantage (Figure 9.15). For females, rates in the lowest SES areas were just over twice those in the highest SES areas; for males, the differential was smaller, although it was still a substantial 57%.

Mortality from external causes was much higher in the Very Remote areas than for other areas, being more than three times the rate in the Major Cities areas for males (a rate ratio of 3.30), and over twice the rate for females (2.11) (Figure 9.16). Rates in the intervening remoteness classes were also much lower than in the Very Remote areas.

Premature mortality - External causes, South Australia, 2001-05 average yearly rates

Figure 9.14: By age and sex

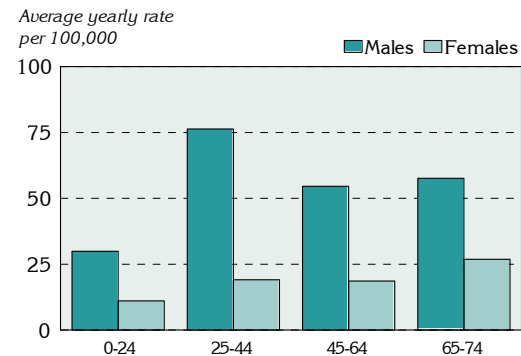


Figure 9.15: By socioeconomic status of area and sex

Rate ratio: Male 1.57 Females 2.02

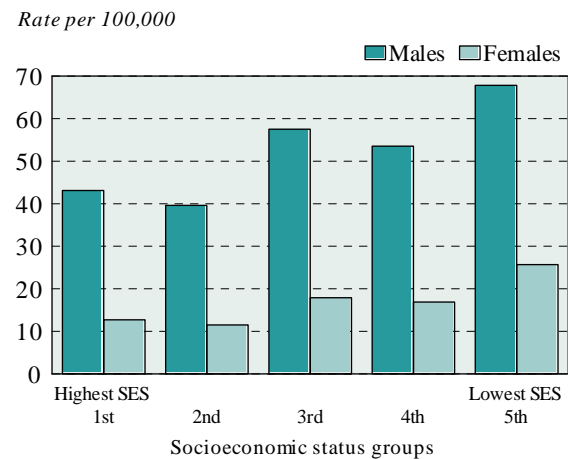
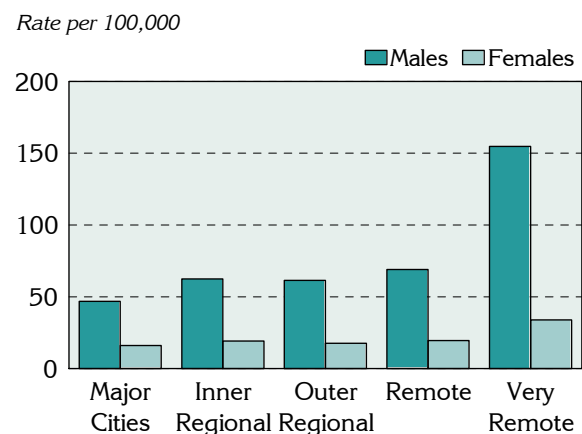


Figure 9.16: By remoteness and sex

Rate ratio: Male 3.30; Female 2.11



Deaths of males aged 0-74 years from external causes, 2001 to 2005

Fewer males died from external causes before age 75 years than expected for both Central Northern Adelaide (a standardised ratio (SR) 90**, 867 deaths) and Southern Adelaide (82**, 326) Health Regions.

In country South Australia, all health regions had elevated ratios, although only those in Northern & Far Western and South East were statistically significant.

Table 9.6: Deaths of males aged 0-74 years from external causes, by Health Region, South Australia, 2001-2005

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	867	47.7	90**
Northern sub-region	382	48.0	91
Western sub-region	260	52.5	100
Central East sub-region	225	42.7	81**
Southern Adelaide	326	43.4	82**
Urban Beaches District	125	40.6	77**
Hills District	67	38.6	73**
Outer Southern District	134	49.8	95
Metropolitan Adelaide (excl. Gawler)	1,193	46.4	88**
Hills Mallee Southern	159	60.5	115
South East	109	73.8	140**
Wakefield	136	59.8	113
Mid North	45	65.1	123
Riverland	52	66.5	126
Eyre	69	85.6	162**
Northern & Far Western	97	78.7	149**
Country South Australia (incl. Gawler)	667	67.4	128**

¹ Rate is the number of deaths per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

Elevated ratios in Metropolitan Adelaide (Map 9.9) were mainly found among the most disadvantaged SLAs as described by the IRSD (Map 4.3). The major exceptions were the SLA of Adelaide (where deaths of indigent men contributed to the number) and Onkaparinga - Hills. The SLAs of Adelaide (an SR of 178**, 40 deaths); Port Adelaide - Inner (173**, 41), and - Coast (157**, 55); Playford - Elizabeth (155**, 46) and - West Central (136, 21); Salisbury Balance (149, 14); and Onkaparinga - Hills (135, 18) had the most highly elevated standardised ratios.

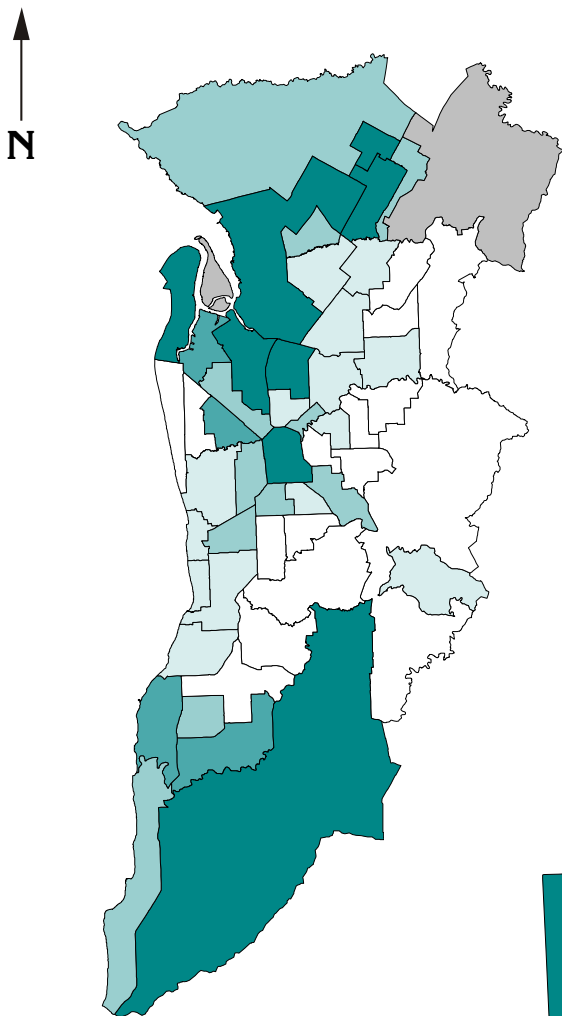
Areas with fewer deaths than expected from external causes included Mitcham - West, - North-East and - Hills; Adelaide Hills - Ranges; Tea Tree Gully - Hills, - Central and - North; Campbelltown - East and - West; Norwood Payneham St Peters - West; Charles Sturt - Coastal and - Inner West; Onkaparinga - Reservoir and - Woodcroft; and Burnside - North-East.

Country SA

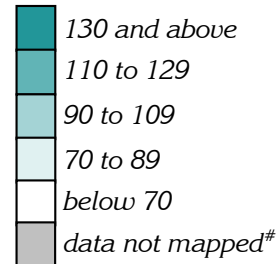
In country South Australia (Map 9.10), there were more premature male deaths than expected from these causes in Unincorporated West Coast (an SR of 563**, 5 deaths), Anangu Pitjantjatjara (478**, 15), Unincorporated Far North (393**, 19), Peterborough (348**, 8), Le Hunte (270*, 5), Berri & Barmera - Barmera (233**, 12), Tumby Bay (220*, 7), Coober Pedy (213*, 7), Ceduna (204*, 9), Wattle Range - East (197*, 8), Mid Murray (192**, 21), Naracoorte and Lucindale (164*, 17), Adelaide Hills Balance (164*, 18), Mount Gambier (156**, 44), Barossa - Barossa (150, 14), Alexandrina - Coastal (147, 18), Kangaroo Island (146, 8), Yorke Peninsula - South (144, 7), Loxton Waikerie - East (140, 13), Gawler (139, 31) and Port Lincoln (134, 23).

SLAs with fewer than expected deaths included Adelaide Hills - North and Loxton Waikerie - West.

Map 9.9 and Map 9.10: Deaths of males aged 0-74 years from external causes, Metropolitan Adelaide and country SA, 2001 to 2005

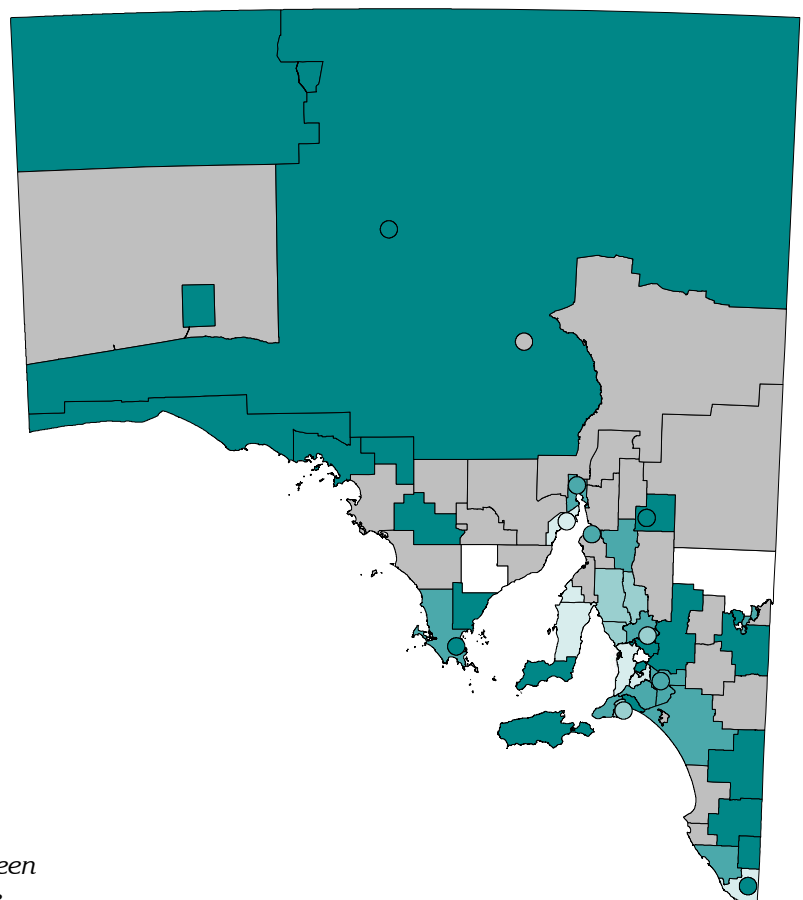


Standardised ratio (as an index)*, by SLA

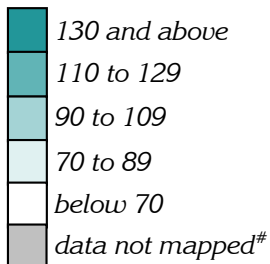


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100

Premature mortality – Other causes

Other causes includes all causes of death at ages 0 to 74 years other than those described above, of cancer, circulatory system diseases, respiratory system diseases and external causes.

Other than in the 0 to 24 year age group (where deaths of females were marginally higher than those for males), deaths of males from these other causes had higher rates across the age groups shown (Figure 9.17).

For males, rates of death from other causes increased in two major steps, between the second and third and between the fourth and fifth socioeconomic groupings of areas, with quite small increases between the other SES groups (Figure 9.18). The overall differential in rates between the lowest and highest SES areas for males was 2.08 (or just over double). For females, after a drop between the first two area groupings, rates increased between each quintile, with an overall higher rate in the lowest SES areas of 83%.

When examined by remoteness, premature mortality from other causes showed marked variation across the first four remoteness classes. However, for both males and females the rate in the Very Remote areas was more than twice that in the Major Cities areas (Figure 9.19).

Premature mortality - Other causes, South Australia, 2001-05 average yearly rates

Figure 9.17: By age and sex

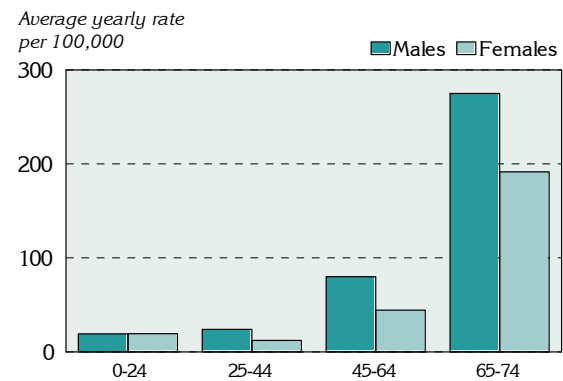


Figure 9.18: By socioeconomic status of area and sex

Rate ratio: Male 2.08; Female 1.83

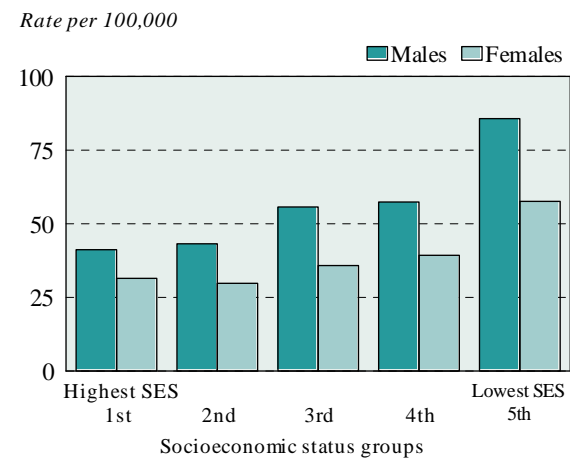
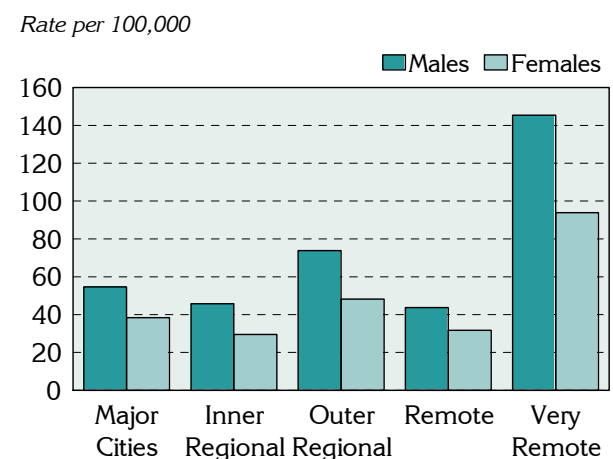


Figure 9.19: By remoteness and sex

Rate ratio: Male 2.66; Female 2.45



Deaths of males aged 0-74 years from other causes, 2001 to 2005

In Central Northern Adelaide Health Region, the premature mortality ratio of males due to other causes over this five-year period was slightly above the level expected (a standardised ratio (SR) of 104, 1,029 deaths); in the Southern Adelaide Health Region, the ratio was 23% below the level expected (an SR of 77**, 326 deaths).

The only health region in country South Australia with statistically significantly more than the expected number of deaths from other causes was Northern & Far Western: none of the rates below the State average was statistically significant.

Table 9.7: Deaths of males aged 0-74 years from other causes, by Health Region, South Australia, 2001-2005

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	1,029	58.8	104
Northern sub-region	447	60.3	106
Western sub-region	312	62.5	110
Central East sub-region	270	53.1	94
Southern Adelaide	326	43.8	77**
Urban Beaches District	146	46.4	82**
Hills District	52	29.7	52**
Outer Southern District	128	50.5	89
Metropolitan Adelaide (excl. Gawler)	1,355	54.4	96
Hills Mallee Southern	147	49.2	87
South East	76	51.9	92
Wakefield	140	54.4	96
Mid North	71	86.4	152**
Riverland	50	61.6	109
Eyre	48	58.0	102
Northern & Far Western	126	107.9	190**
Country South Australia (incl. Gawler)	658	61.7	109*

Metropolitan Adelaide

The geographic distribution of male premature deaths from other causes (Map 9.11) was highly consistent with the distribution of the socioeconomically disadvantaged population as described by the IRSD (Map 4.3). The main variations were the elevated ratios in the SLAs of Adelaide, Unley - East and, to a lesser extent, in Norwood Payneham St Peters - West, where the deaths of indigent men contributed to the number.

There were elevated ratios in the SLAs of Playford - Elizabeth (an SR of 185**, 64 deaths), - West Central (156*, 24) and - West (139, 16); Adelaide (184**, 32); Port Adelaide Enfield - Inner (170**, 42), - Park (169**, 33), - Port (146, 20), - East (135*, 53) and - Coast (131, 49); Charles Sturt - North-East (136**, 52); Onkaparinga - North Coast (148*, 38); and Unley - East (147*, 33).

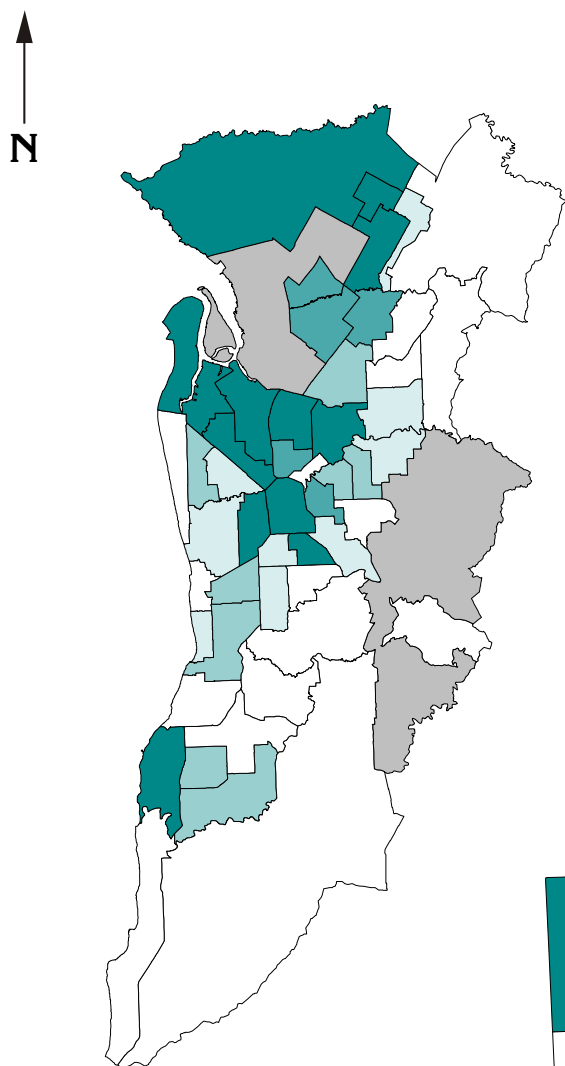
Mitcham - North-East; Adelaide Hills - Central; Marion - South; Burnside - North-East; Charles Sturt - Coastal; Holdfast Bay - North; Onkaparinga - Hills, - Reservoir, - South Coast and - Woodcroft; Tea Tree Gully - Central, - North and - Hills; and Walkerville each had lower than expected ratios of premature death from these causes.

Country SA

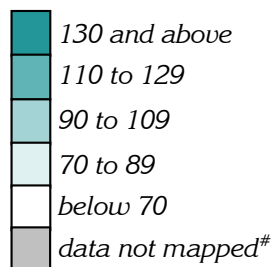
Premature mortality rates for other causes were highly elevated in Anangu Pitjantjatjara (an SR of 414**, 9 deaths), Ceduna (345**, 16), Unincorporated Far North (320**, 11), Coober Pedy (275**, 12), Flinders Ranges (241*, 7), Port Augusta (216**, 39), Port Pirie Districts - City (186**, 36), Barossa - Tanunda (184*, 11), Peterborough (176, 6), The Coorong (169, 15), Loxton Waikerie - West (167, 11), Wakefield (159, 15), Northern Areas (157, 11), Tumby Bay (157, 7), Wattle Range - East (146, 6) and Whyalla (142*, 42).

Areas with lower than expected ratios included Alexandrina - Coastal and - Strathalbyn; Barossa - Angaston; Adelaide Hills Balance and - North; Grant; and Mount Gambier.

Map 9.11 and Map 9.12: Deaths of males aged 0-74 years from other causes, Metropolitan Adelaide and country SA, 2001 to 2005

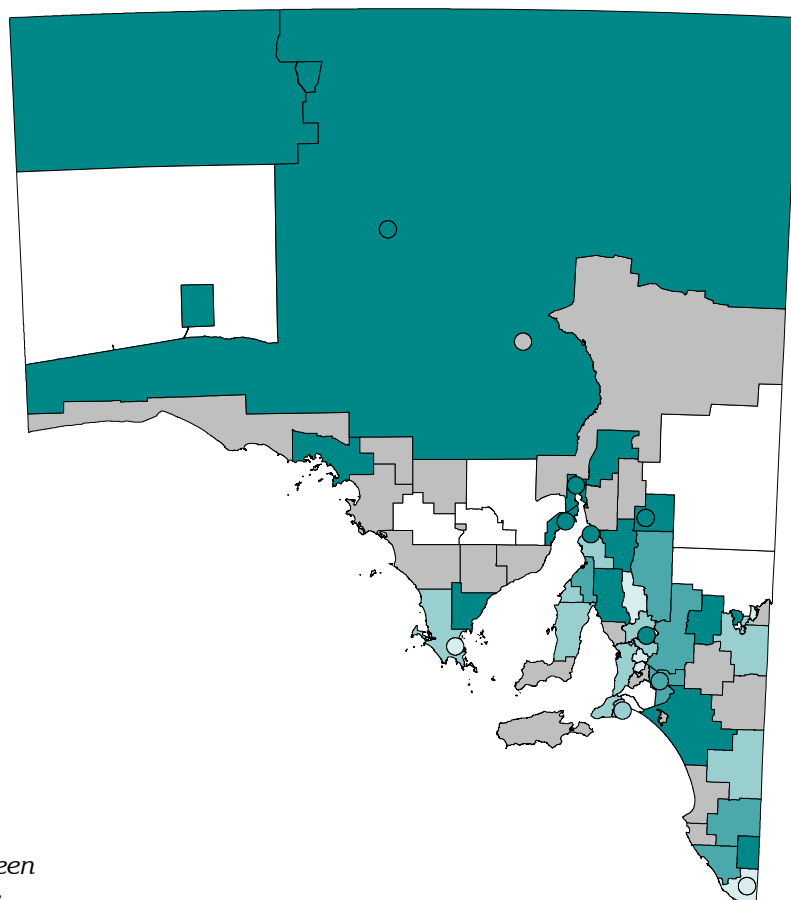


Standardised ratio (as an index)*, by SLA

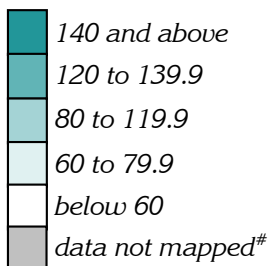


* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals

Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100

Avoidable mortality

'Avoidable mortality' comprises those causes of death that are potentially avoidable at the present time, given available knowledge about social and economic policy impacts, health behaviours, and health care (the latter relating to a subset of causes referred to as 'amenable mortality' – that amenable to health care) (41).

The purpose of using the concept of avoidable mortality as an indicator is to assist in monitoring the quality, effectiveness and productivity of the Australian health system (41).

Only deaths of individuals aged under 75 years are considered to be potentially avoidable. At older ages, many people have several different health problems, and assigning a single underlying cause of death is difficult. This makes classifying deaths as 'avoidable' or 'unavoidable' less valid in those aged 75 and over (4).

Reductions in avoidable deaths have contributed greatly to the fall in overall mortality rates in Australia. Between 1987 and 2001, avoidable mortality rates among people aged under 75 years declined by almost 40%, whereas mortality rates from unavoidable causes in this age group fell by 14% (41). The reduction was seen in both sexes and across all age groups under 75 years.

Over three quarters of deaths at ages 0 to 74 years are considered to be avoidable – 79.3% for males and 73.5% for females. The death rate for these avoidable causes is substantially (85%) higher for males than for females. The major causes of avoidable mortality are deaths from cardiovascular diseases and cancer: this is the reverse of the order seen for premature mortality (above), for which the category of circulatory system diseases is more broadly defined than cardiovascular diseases.

Of note is that a smaller proportion of the male avoidable mortality is estimated to be amenable to health care: 35.3% of all avoidable deaths for males and 52.1% for females.

Avoidable mortality ...cont

In 2001 to 2005, across all age groups, death rates of males from avoidable causes were higher than those for females, with the largest differentials being in the 15 to 24 (male rate 3.0 times the female rate), 25 to 44 (2.34) and 65 to 74 (1.93) year age groups (Figure 9.20).

There were clear socioeconomic gradients for both male and female rates of avoidable mortality, with rates increasing with each increase in socioeconomic disadvantage (Figure 9.21). Rates for both males and females in the lowest SES areas were almost 70% higher than in the highest SES areas, and rates for males were substantially higher than for females in all SES areas.

Rates also increased with increasing remoteness, being 45% higher in the Very Remote areas, when compared to the Major Cities areas, for both males and females (Figure 9.22).

Figure 9.20: Avoidable mortality by age and sex, 2001-05

Rate per 100,000

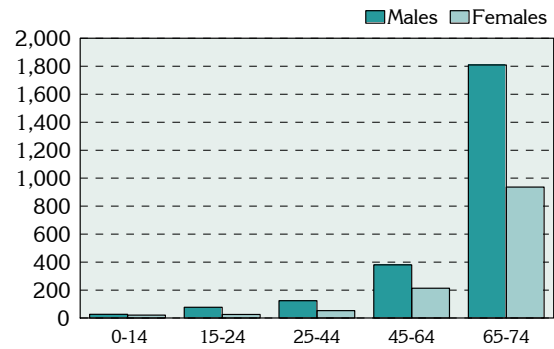


Figure 9.21: Avoidable mortality by socioeconomic status and sex

Rate ratio: Male 1.69; Female 1.67

Rate per 100,000

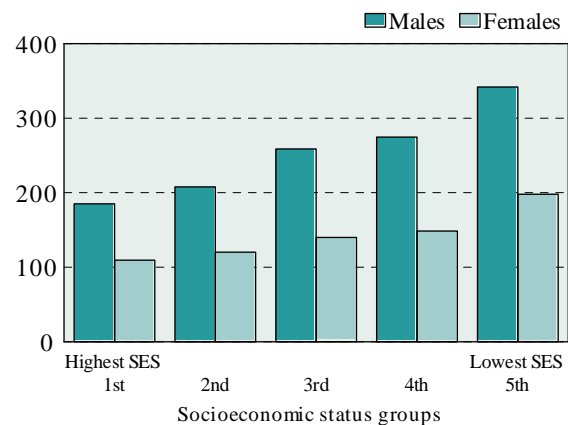
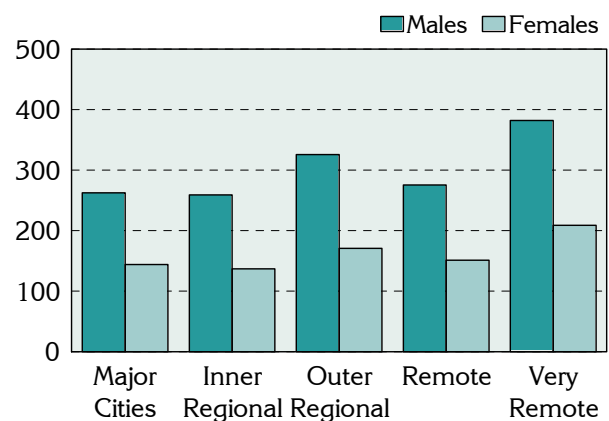


Figure 9.22: Avoidable mortality by remoteness and sex

Rate ratio: Male 1.45; Female 1.45

Rate per 100,000



Avoidable mortality, males aged 0-74 years, 2001 to 2005

Avoidable mortality rates for males aged 0 to 74 years in Central Northern Adelaide Health Region over this five-year period were consistent with the State rate (a standardised ratio (SR) of 100), while in the Southern Adelaide Health Region, there were 17% fewer of these deaths than expected from the State rate (an SR of 83**). There were marked variations at the sub-region level, and even more marked in Southern Adelaide.

The only health region in country South Australia with statistically fewer avoidable deaths than expected was Hills Mallee Southern: the most highly elevated ratios in the other regions were in Northern & Far Western and Mid North, with SRs of 158** and 139**, respectively.

Table 9.8: Avoidable mortality, males, by Health Region, South Australia,

Health Region	Number	Rate ¹	SR ²
Central Northern Adelaide	4,466	255.1	100
Northern sub-region	447	60.3	106
Western sub-region	312	62.5	110**
Central East sub-region	270	53.1	94**
Southern Adelaide	1,552	210.0	83**
Urban Beaches District	146	46.4	82**
Hills District	52	29.7	52**
Outer Southern District	128	50.5	89
Metropolitan Adelaide (excl. Gawler)	6,018	241.7	95**
Hills Mallee Southern	718	235.0	92*
South East	396	273.5	108
Wakefield	668	255.5	100
Mid North	298	353.8	139**
Riverland	239	294.5	116*
Eyre	239	290.5	114*
Northern & Far Western	464	401.5	158**
Country South Australia (incl. Gawler)	3,022	281.1	111**

¹ Rate is the number of avoidable deaths per 100,000 population

² SR = Standardised Ratio, percentage of variation in the region from the ratio of 100 in South Australia

Metropolitan Adelaide

The geographic distribution of avoidable deaths of males at ages 0 to 74 years (Map 9.13) was consistent with the distribution of the socioeconomically disadvantaged population as described by the IRSD (Map 4.3). Ratios elevated by one third or more were recorded in the SLAs of Port Adelaide Enfield - Coast, - Port, - Park and - Inner (with SRs of 155**, 141**, 140** and 133**, respectively); Playford - Elizabeth and - West Central (both 151**); Adelaide (145**); and Charles Sturt - North-East (144**).

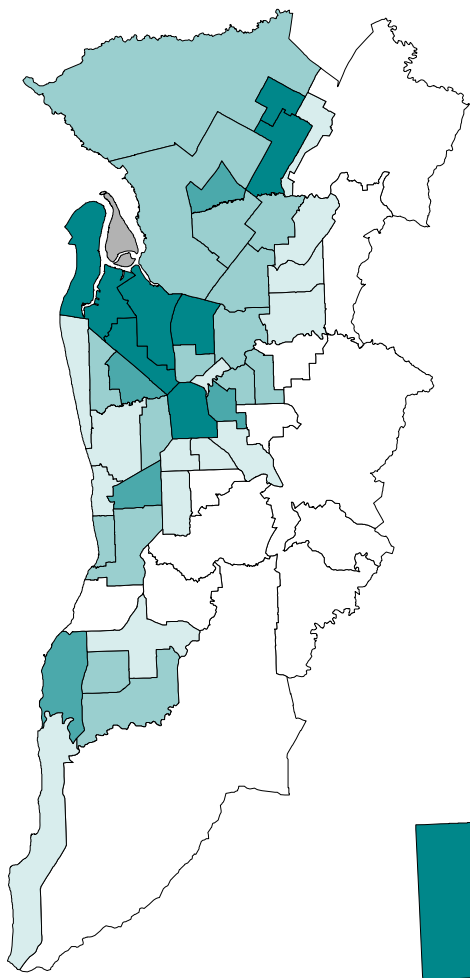
Ratios of 33% or more below the State rate were recorded for males in Adelaide Hills - Ranges and - Central (with SRs of 46** and 49**, respectively); Mitcham - North-East and - Hills (47** and 48**); Onkaparinga - Reservoir and - Hills (51** and 62**); Campbelltown - East (57**); Playford - Hills (60); Marion - South (61**); Burnside - North-East (61**); and Tea Tree Gully - Hills (64**).

Country SA

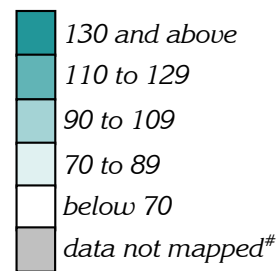
Elevated ratios were recorded across much of the State, in particular in the north and west, and in a majority of the towns (Map 9.14). SLAs with the most highly elevated ratios (and at least 20 deaths over this five-year period) included Anangu Pitjantjatjara (with an SR of 311** and 32 deaths); Unincorporated Far North (292**, 40), Peterborough (217**, 35), Coober Pedy (164**, 40), Ceduna (185**, 38), Flinders Ranges (171**, 24), Barunga West (168**, 35), Port Augusta (163**, 132), Tumby Bay (154**, 32) and Port Pirie Districts - City (149**, 133) in the north and west; and Wattle Range - East (176**, 33) in the south of the State.

The few very low ratios (and at least 20 deaths) were near the city in Adelaide Hills - North (an SR of 60**, 24 deaths), Mount Barker Balance (64**, 31) and Alexandrina Strathalbyn (64**, 38); and Grant, in the south-east (61**, 30)

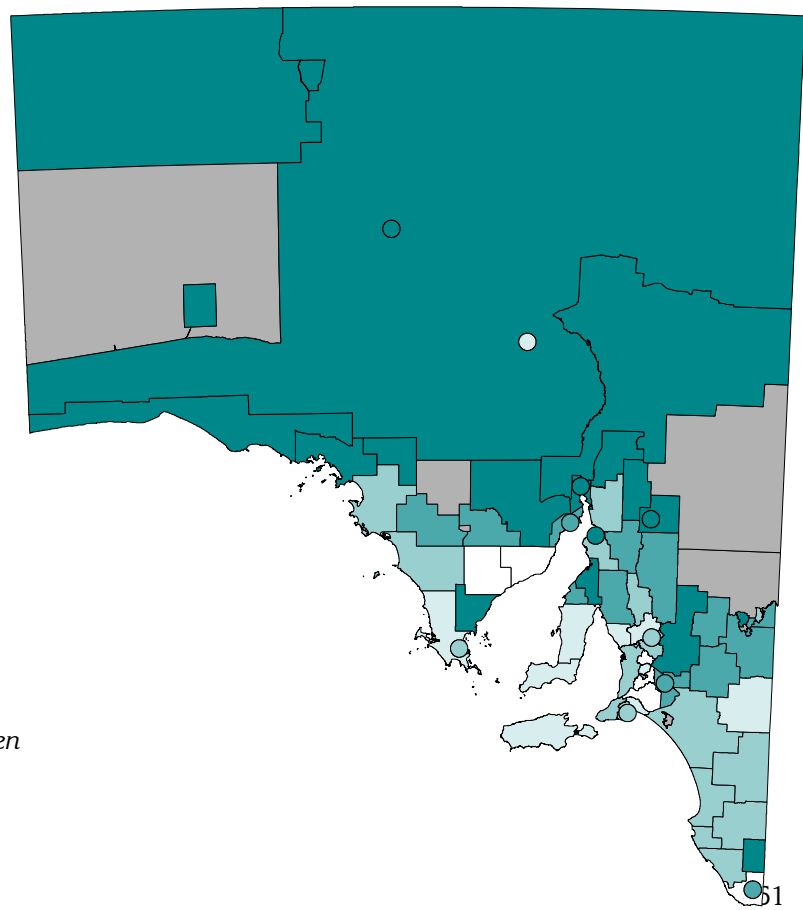
Map 9.13 and Map 9.14: Avoidable mortality, males aged 0-74 years, Metropolitan Adelaide and country SA, 2001 to 2005



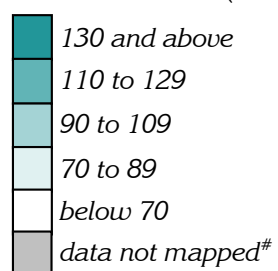
Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on totals for the metropolitan region
 # Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100



Standardised ratio (as an index)*, by SLA



* Expected numbers were derived by indirect standardisation, based on SA totals
 # Data not mapped because there were between one to four deaths over the time period; or the SLA has a population of less than 100

10. Burden of Disease

SA Health are currently updating estimates of the burden of disease on the population (see box opposite). The information presented below, for Health-Adjusted Life Expectancy, is from an earlier analysis based on data for 1999 to 2001. The updated estimates are expected to be available early in 2009.

These estimates 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 (43).

Health expectancies are expressed as Health-Adjusted Life Expectancy (HALE), 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. Health-Adjusted Life Expectancy is useful in making comparisons over time, as it takes into account changes in the extent of disability within the population (42).

Health-Adjusted Life Expectancy, males, 1999 to 2001

Health-Adjusted Life Expectancy was lower for males than for females in both metropolitan regions and country South Australia, although there were only small differences, by sex, within the metropolitan regions and country South Australia (Table 10.1).

The Health-Adjusted Life Expectancy 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 Health-Adjusted Life Expectancies. However, the Burden of Disease areas⁴ with the lowest scores were less densely populated than other areas.

Table 10.1: Health-Adjusted Life Expectancy, by Burden of Disease (BoD) area, South Australia, 1999 to 2001

Health Region	Males	Females	RR M:F ¹
Central Northern	69.7	74.7	0.93
Southern Adelaide	70.4	75.6	0.93
Metropolitan Adelaide (excl. Gawler)	69.9	75.0	0.93
Hills	72.6	76.6	0.95
Southern	72.5	76.1	0.95
Mallee	67.3	75.2	0.89
Hills Mallee Southern	70.8	76.1	0.93
Gawler and Barossa	70.7	74.4	0.95
Balance of Wakefield	69.4	74.6	0.93
Wakefield	69.9	74.7	0.94
Mount Gambier and Grant	68.6	74.9	0.92
Upper South East	70.4	75.1	0.94
South East	69.5	75.0	0.93
Northern & Far Western	66.3	71.1	0.93
Eyre	68.8	74.4	0.92
Mid North	68.6	73.6	0.93
Riverland	68.2	74.0	0.92
Country South Australia (incl. Gawler)	69.2	74.5	0.93

¹ RR M:F is the ratio of the rate for males to that for females

Metropolitan Adelaide

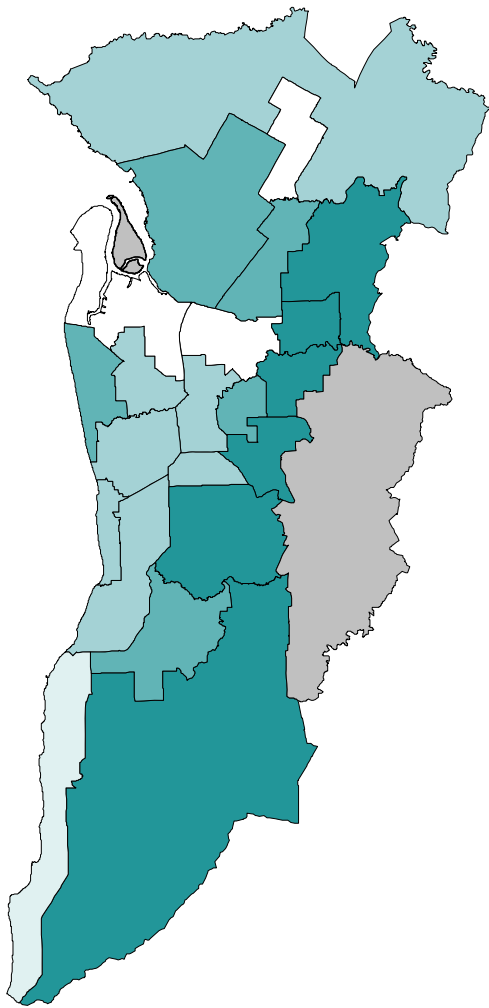
The highest Health-Adjusted Life Expectancy was in the areas to the east, north-east and south-east of the city centre. The lowest was in the outer north, in Playford - Elizabeth, and in the middle northern and north-western Burden of Disease areas of Port Adelaide Enfield - Coast/Port and Port Adelaide Enfield - East/Inner (Map (10.1).

Country SA

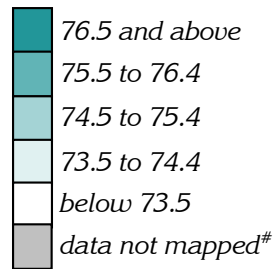
The lowest Health-Adjusted Life Expectancy in country South Australia was calculated for Northern & Far Western region (66.3 years), being 2.9 years lower than that for country South Australia overall (Map 10.2). This was followed by Riverland (68.2 years), Mid North (68.6 years), Eyre (68.8 years), South East (69.5 years), Wakefield (69.9 years) and Hills Mallee Southern (70.8 years).

⁴ Burden of Disease areas are comprised of aggregations of SLAs, with aggregation necessary because of the relatively small numbers of cases used in making these calculations

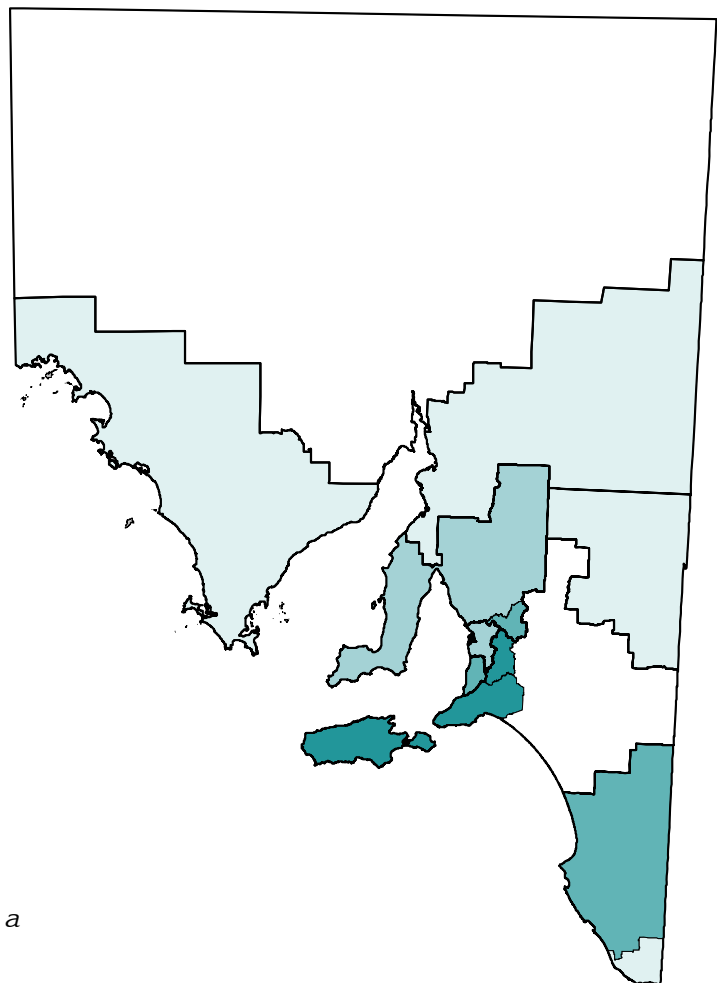
Map 10.1 and Map 10.2: Health-Adjusted Life Expectancy, males, Metropolitan Adelaide and country SA, 1999 to 2001



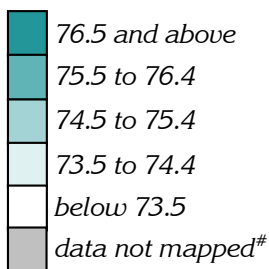
HALE (years), by Burden of Disease area



[#] Data not mapped because the BoD area has a population of less than 100



HALE (years), by Burden of Disease area



[#] Data not mapped because the BoD area has a population of less than 100

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11. Correlation analysis

A correlation analysis has been undertaken to illustrate the extent of association at the SLA level between socioeconomic status and the other indicators mapped: see box. Socioeconomic status is measured here using the Index of Relative Socioeconomic Disadvantage (IRSD – covers both males and females), full-time education participation at age 16 and unemployment (these latter two are based on data for men only). Note that as the IRSD is calculated such that low scores (below 1000) reflect relative disadvantage, and high scores (above 1000) reflect relative advantage, negative (or inverse) correlations between the IRSD and other variables indicate a positive association with socioeconomic disadvantage.

In the following tables, the correlations are based on data for men, unless noted.

Metropolitan Adelaide

There are very strong correlations between men living in socioeconomically disadvantaged areas (as indicated by the IRSD) and their use of the following health services: community health and community mental health services, Child and Adolescent Mental Health Services clinics, SA Dental Service and GPs.

Strong correlations were recorded between socioeconomic disadvantage and men attending public hospital Emergency Departments, or admitted to a hospital for circulatory system diseases or respiratory system diseases. Avoidable hospitalisations of men had a strong correlation with socioeconomic disadvantage, and those for diabetes complications had a very strong correlation.

Both of the chronic diseases for which prevalence estimates were available for men were very strongly correlated with socioeconomic disadvantage – they were the prevalence of mental and behavioural disorders and of mood (affective) disorders.

Of the health risk factor for which data were available, smoking and obesity were both very strongly correlated with socioeconomic disadvantage, while the proportion of the male population who were overweight showed a very weak correlation with areas of high socioeconomic status.

The incidence of lung cancer among the male population is also strongly correlated with socioeconomic disadvantage.

Many of the correlations noted above with the IRSD are similarly strong with the variables for full-time education participation at age 16 (high rates of service use and poor outcomes inversely correlated

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.

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% shared variation (r^2 greater than or equal to 0.5): these are referred to as being 'very strong' correlations. Correlations just below plus or minus 0.50 are referred to in the text as being 'moderate'; and those below plus or minus 0.30 are referred to as 'weak'.

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 Metropolitan Adelaide and country South Australia, are shown in the following table: coefficients from 0.5 to 0.7 and from 0.71 to 1 (both positive and negative) are highlighted in the table.

with high rates of education participation) and unemployment (high rates of service use and poor outcomes correlated with high rates of unemployment).

Country SA

There are fewer indicators in country South Australia with sufficient data to undertake the correlation analysis, and many of the correlations

are quite weak, in part because of the relatively small number of cases in these low-population areas.

There are strong correlations between socioeconomic disadvantage and high death rates from premature causes (all cause deaths and deaths from circulatory system diseases) and avoidable causes (each of these categories includes deaths before 75 years of age). A similar relationship exists between areas with high unemployment rates high rates of attendance of adults at SADS clinics; as well as admissions for mental and behavioural problems.

There is also a strong correlation between high rates of participation in full-time education at age 16 and socioeconomic advantage.

Table 11.1: Correlation coefficients for SLAs in Metropolitan Adelaide

Table 11.2: Correlation coefficients for SLAs in country South Australia

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Appendix

Table A.1: Hospital admissions for selected injury conditions, by sex and condition

Injury admissions	Males		Females	
	No.	Rate	No.	Rate
Total	32,688	4,325.3	29,501	3,824.3
Transport accidents	2,912	385.3	1,402	181.7
Falls	5,129	678.7	7,364	954.6
Exposure to mechanical forces	3,648	482.7	1,413	183.2
Accidental drowning and submersion	20	2.6	9	1.2
Other accidental threats to breathing	292	38.6	163	21.1
Exposure to electric current, radiation and extreme ambient air temperature and pressure	58	7.7	29	3.8
Exposure to smoke, fire and flames	505	66.8	249	32.3
Exposure to venomous animals and plants	366	48.4	198	25.7
Accidental poisoning	627	83	689	89.3
Other external causes of accidental injury	3,032	401.2	1,946	252.3
Intentional self-harm	971	128.5	1,598	207.2
Assault	1,172	155.1	520	67.4
Event of undetermined intent	75	9.9	93	12.1
Legal intervention and operations of war	8	1.1	2	0.3
Complications of medical and surgical care	12,402	1641	13,056	1,692.5
Sequelae and supplementary factors	1,471	194.6	770	99.8

Table A.2: Premature mortality 0 to 74 years, by age, sex and major cause, South Australia, 2001-2005

Age (years)	Males		Females		RR M:F ¹
	No.	Rate ²	No.	Rate ²	
Cancer					
0-14	23	3.1	17	2.4	
15-24	38	7.3	22	4.5	
25-44	248	22.9	272	25.5	
45-64	1998	213.1	1689	176.9	
65-74	2463	886.2	1606	533.0	
Total	4,770	134.1	3,606	102.6	1.31
Circulatory system diseases					
0-14	13	1.8	1	0.1	
15-24	12	2.3	6	1.2	
25-44	225	20.7	110	10.3	
45-64	1336	142.5	464	48.6	
65-74	1959	704.9	966	320.6	
Total	3,545	99.6	1,547	44.0	2.26
Respiratory system diseases					
0-14	6	0.8	7	1.0	
15-24	7	1.3	4	0.8	
25-44	38	3.5	35	3.3	
45-64	225	24.0	159	16.7	
65-74	532	191.4	318	105.5	
Total	808	22.7	523	14.9	1.52
External causes					
0-14	61	8.3	41	5.8	
15-24	315	60.6	91	18.5	
25-44	828	76.3	204	19.1	
45-64	512	54.6	178	18.6	
65-74	160	57.6	81	26.9	
Total	1,876	52.7	595	16.9	3.12
Other					
0-14	205	27.8	195	27.8	
15-24	36	6.9	37	7.5	
25-44	262	24.1	131	12.3	
45-64	750	80.0	424	44.4	
65-74	764	274.9	577	191.5	
Total	2,017	56.7	1,364	38.8	1.46
Total deaths	13,016	365.8	7,635	198.1	1.85

¹ RR M:F is the ratio of the rate for males to that for females

² Rate is the number of deaths per 100,00 population

Data sources

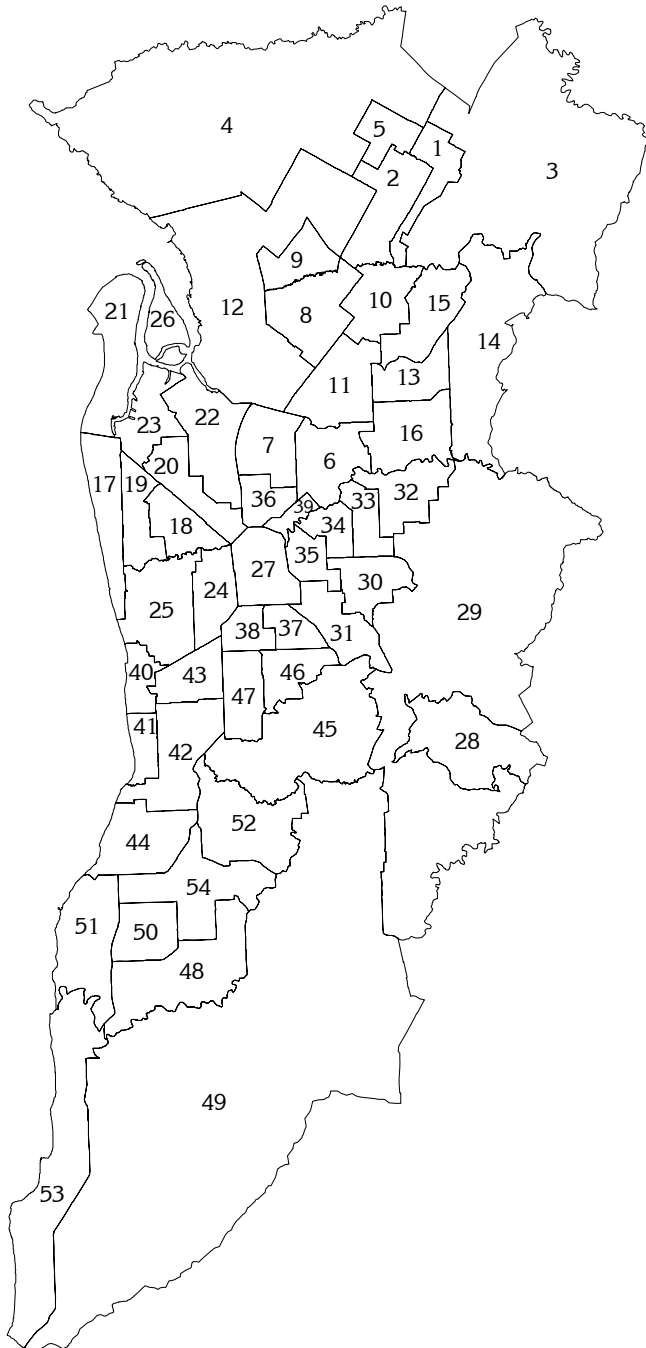
The source of data collected specifically for this project has not been included with each table in the report: rather, details are provided in the following table (Table A3).

Table A.3: Project data sources

Chapter	Data source
Chapter 4	<p>Data provided by SA Health are</p> <ul style="list-style-type: none"> - Clients of community health and community mental health services - Accident and Emergency Department attendances - Hospital admissions, including admissions of Aboriginal and Torres Strait Islanders and potentially avoidable hospitalisations <p>Data provided by individual health services are</p> <ul style="list-style-type: none"> - Clients of Child and Adolescent Mental Health services - Clients of domiciliary care services - Clients of Royal District Nursing Service - Patients of the South Australian Dental Service and dental health of 12 year old children - General medical practitioner services, purchased by PHIDU from Medicare Australia
Chapter 5	<p>Data provided by ABS</p> <ul style="list-style-type: none"> - Prevalence of selected chronic disease
Chapter 6	<p>Data produced by ABS</p> <ul style="list-style-type: none"> - Prevalence of selected risk factors
Chapter 7	<p>Data provided by SA Health are</p> <ul style="list-style-type: none"> - Cancer incidence
Chapter 8	<p>Data provided by ABS Census 2006</p> <ul style="list-style-type: none"> - Disability
Chapter 9	<p>Data provided by ABS</p> <ul style="list-style-type: none"> - Premature and Avoidable mortality
Chapter 10	<p>Data produced by SA Health</p> <ul style="list-style-type: none"> - Burden of Disease

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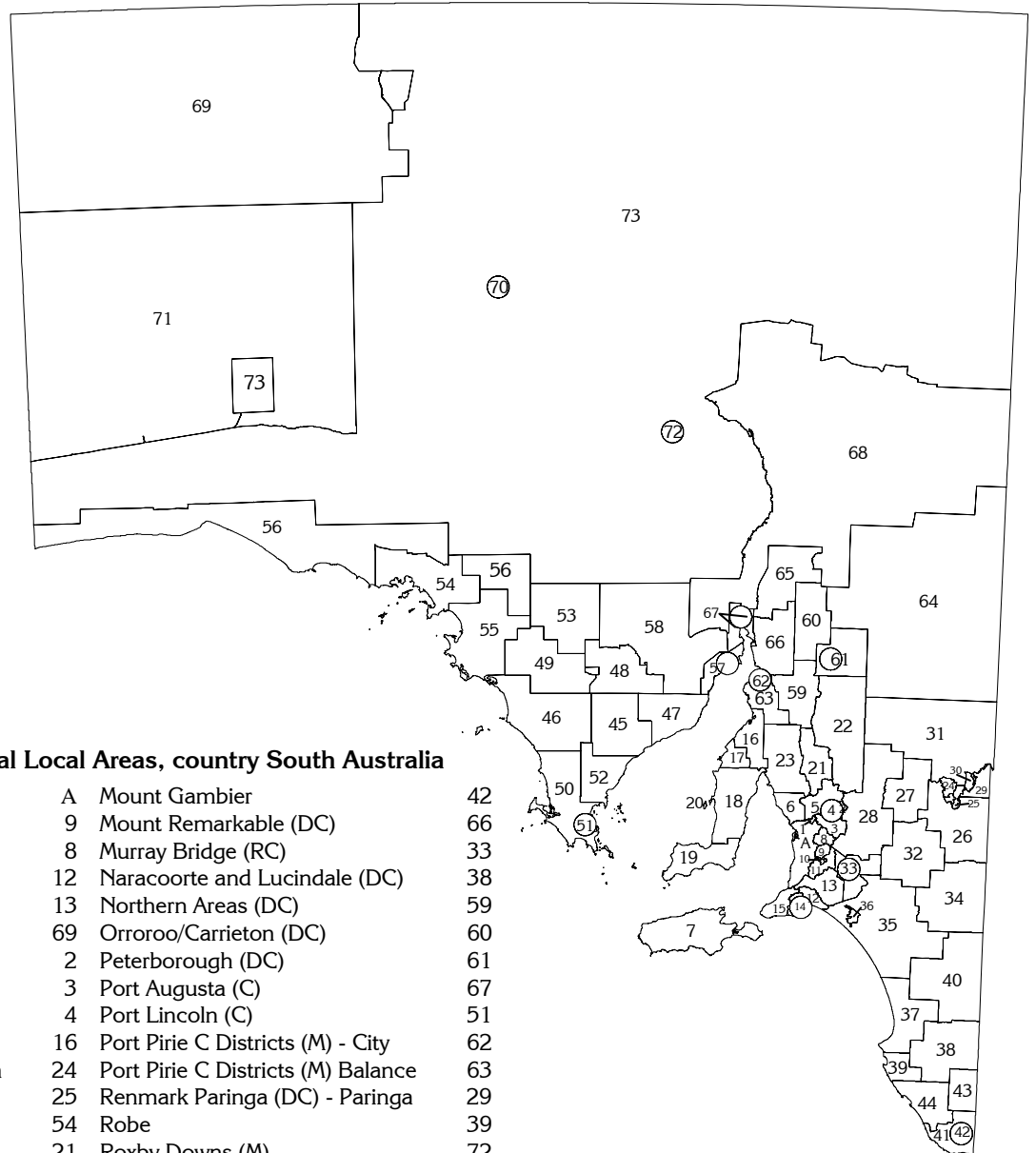
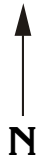
Key 1: Key to areas mapped by Statistical Local Area, metropolitan regions, South Australia, 2006



Alphabetical key to Statistical Local Areas, metropolitan regions, South Australia

Adelaide (C)	27
Adelaide Hills (DC) - Central	28
Adelaide Hills (DC) - Ranges	29
Burnside (C) - North-East	30
Burnside (C) - South-West	31
Campbelltown (C) - East	32
Campbelltown (C) - West	33
Charles Sturt (C) - Coastal	17
Charles Sturt (C) - Inner East	18
Charles Sturt (C) - Inner West	19
Charles Sturt (C) - North-East	20
Holdfast Bay (C) - North	40
Holdfast Bay (C) - South	41
Marion (C) - Central	42
Marion (C) - North	43
Marion (C) - South	44
Mitcham (C) - Hills	45
Mitcham (C) - North-East	46
Mitcham (C) - West	47
Norwood Payneham St Peters (C) - East	34
Norwood Payneham St Peters (C) - West	35
Onkaparinga (C) - Hackham	48
Onkaparinga (C) - Hills	49
Onkaparinga (C) - Morphett	50
Onkaparinga (C) - North Coast	51
Onkaparinga (C) - Reservoir	52
Onkaparinga (C) - South Coast	53
Onkaparinga (C) - Woodcroft	54
Playford (C) - East Central	1
Playford (C) - Elizabeth	2
Playford (C) - Hills	3
Playford (C) - West	4
Playford (C) - West Central	5
Port Adelaide Enfield (C) - Coast	21
Port Adelaide Enfield (C) - East	6
Port Adelaide Enfield (C) - Inner	7
Port Adelaide Enfield (C) - Park	22
Port Adelaide Enfield (C) - Port	23
Prospect (C)	36
Salisbury (C) - Central	8
Salisbury (C) - Inner North	9
Salisbury (C) - North-East	10
Salisbury (C) - South-East	11
Salisbury (C) Balance	12
Tea Tree Gully (C) - Central	13
Tea Tree Gully (C) - Hills	14
Tea Tree Gully (C) - North	15
Tea Tree Gully (C) - South	16
Unincorporated Western	26
Unley (C) - East	37
Unley (C) - West	38
Walkerville (M)	39
West Torrens (C) - East	24
West Torrens (C) - West	25

Key 2: Key to areas mapped by Statistical Local Area, country South Australia, 2006



Alphabetical key to Statistical Local Areas, country South Australia

Metropolitan Adelaide	A	Mount Gambier	42
Adelaide Hills (DC) Balance	9	Mount Remarkable (DC)	66
Adelaide Hills (DC) - North	8	Murray Bridge (RC)	33
Alexandrina (DC) - Coastal	12	Naracoorte and Lucindale (DC)	38
Alexandrina (DC) - Strathalbyn	13	Northern Areas (DC)	59
Anangu Pitjantjatjara (AC)	69	Orroroo/Carrieton (DC)	60
Barossa (DC) - Angaston	2	Peterborough (DC)	61
Barossa (DC) - Barossa	3	Port Augusta (C)	67
Barossa (DC) - Tanunda	4	Port Lincoln (C)	51
Barunga West (DC)	16	Port Pirie C Districts (M) - City	62
Berri & Barmera (DC) - Barmera	24	Port Pirie C Districts (M) Balance	63
Berri & Barmera (DC) - Berri	25	Renmark Paringa (DC) - Paringa	29
Ceduna (DC)	54	Robe	39
Clare and Gilbert Valleys (DC)	21	Roxby Downs (M)	72
Cleve (DC)	45	Southern Mallee (DC)	34
Cooper Pedy (DC)	70	Streaky Bay (DC)	55
Copper Coast (DC)	17	Tatiara (DC)	40
Elliston (DC)	46	The Coorong (DC)	35
Flinders Ranges (DC)	65	Tumby Bay (DC)	52
Franklin Harbour (DC)	47	Unincorporated Far North	73
Gawler	1	Unincorporated Flinders Ranges	68
Goyder (DC)	22	Unincorporated Lincoln	53
Grant (DC)	41	Unincorporated Murray Mallee	36
Kangaroo Island (DC)	7	Unincorporated Pirie	64
Karoonda East Murray (DC)	32	Unincorporated Riverland	31
Kimba (DC)	48	Unincorporated West Coast	56
Kingston (DC)	37	Unincorporated Whyalla	58
Le Hunte (DC)	49	Unincorporated Yorke	20
Light (Reg C)	5	Victor Harbor (C)	14
Lower Eyre Peninsula (DC)	50	Wakefield (DC)	23
Loxton Waikerie (DC) - East	26	Wattle Range (DC) - East	43
Loxton Waikerie (DC) - West	27	Wattle Range (DC) - West	44
Mallala (DC)	6	Whyalla (C)	57
Maralinga Tjarutja (AC)	71	Yankalilla (DC)	15
Mid Murray (DC)	28	Yorke Peninsula (DC) - North	18
Mount Barker (DC) - Central	10	Yorke Peninsula (DC) - South	19
Mount Barker (DC) Balance	11		