South Australia: Our Health and Health Services

Released 2008

Government of South Australia
SA Health

The National Library of Australia Cataloguing-in-Publication entry:

Title: South Australia [electronic resource]: our health and health services / SA Health.

Publisher: Adelaide: SA Dept of Health, 2008.

ISBN: 9780730898207 (pdf)

Subjects: Public health–South Australia.

Other Authors/Contributors: South Australia. Dept. of Health.

Dewey Number: 362.1099423

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Foreword

South Australia: Our Health and Health Services 2008 is the first publication to provide a comprehensive picture of the health status of South Australians. The report uses population health information and an extensive array of other health and demographic data to portray our current state of health and to illustrate how risk factors associated with lifestyle choices, socioeconomic circumstances and environmental conditions can lead to ill health. The report also contains information on the health services and facilities that serve the people of South Australia and the initiatives — both underway and planned — that will lead to improvements in the health and wellbeing of our people.

Most South Australians enjoy good health. Our hospitals provide a comprehensive range of services to people who are acutely ill. Our out-of-hospital sector provides a broad range of services designed to improve, stabilise or maintain our health and wellbeing. These services include post-acute care, the management of people with chronic health conditions, the management of people with mental health illnesses, early intervention programs to prevent the onset of disease, and a range of health promotion activities to encourage healthy living and good lifestyle choices.

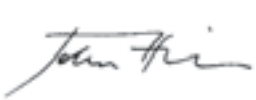
Our health system is comprehensive and our standards of health care are very high. The health outcomes that our system delivers to the people of South Australia are matched by very few other countries in the world; this does not mean however, that better outcomes cannot be achieved.

Good health is not experienced by all South Australians and it is our Government's goal to advance the health and wellbeing of those individuals, and of specific populations groups, whose health status is not as high as the general population. *South Australia's Strategic Plan* has a range of targets relating to improved health status, and there are programs and activities in place to ensure we achieve these targets.

The *SA Health Care Plan* describes the planned reformation of our health system and how these changes will help us to deal with the ever-increasing demand for health services and improving the health status of South Australians. The Plan's key objectives are to improve significantly the coordination of care across the system, to ensure care is provided in the most appropriate setting, to place a much a greater emphasis on early prevention, to promote further the benefits of healthy living and to better manage people with long-term health problems.

The Social Inclusion Board provided a series of recommendations on how our mental health system should be reformed, in the Report 'Stepping Up'. The reforms are aimed at rebuilding, relocating and restructuring our mental health services and will be phased in over the next five years. These changes will ensure that consumers have access to a wider variety of high quality, client focused services, closer to where they live.

The importance of data and information in evaluating health status and the effectiveness of health programs and services cannot be overstated. This report contains a wealth of information that describes South Australians' current state of health. The same information also will be used as a 'marker' for measuring future changes in health status and will help the Health Performance Council to determine whether or not our health system is providing the right level of health care, and has the right blend of services, to achieve the best possible health status for the people of South Australia.



Hon John Hill MP
Minister for Health

Hon Gail Gago MLC
Minister for Mental Health and Substance Abuse

Acronyms

AACAT	Adelaide Aged Care Assessment Team
ABDC	Audit and Best Practice in Chronic Disease research program
ABS	Australian Bureau of Statistics
ACAM	Australian Centre for Asthma Monitoring
ACIR	Australian Childhood Immunisation Register
AHMAC	Australian Health Minsters' Advisory Council
AIDS	Acquired Immune Deficiency Syndrome
AIHW	Australian Institute of Health and Welfare
AIMS	Advanced Incident Management System
APAC	Australian Pharmaceutical Advisory Council
APY	Anangu Pitjantjatjara Yankunytjatjara
BEACH	Bettering the Evaluation and Care of Health
BFV	Barmah Forest arbovirus
BLIS	Booking List Information System
BMI	Body mass index
CALD	Culturally and linguistically diverse populations or communities
CAMHS	Child Adolescent Mental Health Services
CATI	Computer-Assisted Telephone Interview
CBIS	Community-based Information System
CCC	Country Consolidation CME
CI	Confidence interval
CKD	Chronic Kidney Disease
COPD	Chronic obstructive pulmonary disease
CPI	Clinical Practice Improvement
CRF	Cultural Respect Framework
CYH	Child and Youth Health
DALY	Disability adjusted life years
DASSA	Drug and Alcohol Services South Australia
dmft	Decayed plus missing plus filled deciduous teeth
DMFT	Decayed plus missing plus filled adult teeth
ED	Emergency department
ELD	Expected years lost to disability as a proportion of total life expectancy
EPA	Environmental Protection Authority
ERP	Estimated resident population
ESRD	End-stage renal disease
ESRG	Extended service-related groups
FSF	Family Safety Framework
FWE	Full-time workforce equivalents
GDP	Gross Domestic Product
GFR	Glomerular filtration rate
GP	General practitioner
HACC	Home and Community Care
HALE	Health adjusted life expectancy
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
ICD-10	International Classification of Diseases, Tenth Edition
IHD	Ischaemic heart disease
IMVS	Institute of Medical and Veterinary Science
IRSD	Index of Relative Socioeconomic Disadvantage
ISAAC	Integrated South Australian Activity Collection
IVF	In-vitro fertilisaton
JRA	Juvenile rheumatoid arthritis
K10	Kessler Psychological Distress Scale — 10
LE	Life expectancy
LOS	Length of stay
LSA	Local Service Area
MAHPET	Mapping Aboriginal Health Partnerships for Policy-Evidence Transfer
MDC	Metropolitan Domiciliary Care
MET	Medical Emergency Team

MGP	Midwifery Group Practice
MRSA	Antibiotic–resistant golden staph
NATSIHS	National Aboriginal and Torres Strait Islander Health Survey
NGO	Non-government organisation
NHS	National Health Survey
NIMC	National Inpatient Medication Chart
NIPS	National immunisation programs schedule
OBD	Occupied bed day
OECD	Organisation for Economic Co-Operation and Development
PBS	Pharmaceutical Benefits Scheme
PEHS	Patient Evaluation of Health Services
PHIAC	Private Health Insurance Administration Council
PHIDU	Public Health Information Development Unit
PIRSA	Primary Industry and Resources South Australia
RACF	Residential Aged Care Facility
RAISE	Regional Aboriginal Integrated Social and Emotional
RRV	Ross River arbovirus
RCA	Root Cause Analysis
RDNS	Royal District Nursing Service
RFE	Reasons for encounter
RIST	Remote Aboriginal Stores and Takeaways
SA	South Australia
SADS	SA Dental Service
SAIMMS	South Australian Integrated Mosquito Management Strategy
SAMSS	South Australian Monitoring and Surveillance System
SAPOL	South Australian Police
SASP	South Australia's Strategic Plan
SD	Statistical Division
SEIFA	Socioeconomic indexes for areas
SHA	System of Health Accounts
SIDS	Sudden infant death syndrome
SLA	Statistical Local Area
STD	Sexually transmitted disease
STED	Septic tank effluent disposal
TQEH	The Queen Elizabeth Hospital
UN	United Nations
WCH	Women's and Children's Hospital
WHO	World Health Organization
YLD	Years lost to disability or illness
YLL	Years of life lost

Executive Summary

The health of South Australians generally is very good. Life expectancy is a universally accepted indicator of health status. Australia has the fourth highest life expectancy of all OECD countries. The average life expectancy for males in South Australia is 78.1 years, marginally below the Australian average of 78.5 years and the average life expectancy for females in South Australia is 83.4 years, slightly above the national average of 83.3 years. The median age at death for males and females in South Australia is 77.5 years and 83.6 years respectively; the highest of all states and territories in Australia.

Infant mortality rate is another international comparator for assessing the health of populations. The rate varies between 3 and 7 deaths per 1 000 live births in developed countries; it rises to 100 or more in some developing countries. South Australia's infant mortality rate is the lowest of any Australian state or territory, at 4.0 deaths per 1 000 live births compared to the national average of 4.8.

South Australians also rate their own health status as high. The South Australian Monitoring and Surveillance System (SAMSS) is a randomised survey of approximately 6 000 South Australians per annum undertaken by the Department of Health. Just over 83 per cent of respondents aged 16+ years, when asked about their state of health in the 2006–07 SAMSS survey, reported their overall health as either excellent, very good or good.

Most South Australians enjoy good health, yet more can be done to further improve the overall health status of people living in the state. Health and wellbeing is influenced by a variety of factors. Biology and genetic make-up clearly influence health status, and the propensity for people to develop diseases and to migrate towards ill-health, but they are not the only factors. Lifestyle choices and environmental, social and political factors also have a bearing on how long people remain in a state of good health and wellbeing.

This report describes not only the health of South Australians and the factors that impact on their health, but also the range and use of health services provided in the state, and the initiatives being undertaken and planned to achieve higher levels of health and wellbeing for the people of South Australia.

The key features and statistics from each of the report's 11 chapters are provided below.

Population profile (chapter 1, page 12)

The estimated residential population of South Australia at June 2007 was 1 584 513.

Females slightly outnumber males and the proportion of females in the population increases with age.

South Australia's population is projected to reach 1 768 391 people based on the *High series* method. It is government policy that South Australia's population will increase to 1 736 879 people by 2021, and 2 million people by 2050, based on the *2 Million by 2050* method.

The population is predominantly urban, but the state has to deal with the issue of extreme remoteness for some of its residents.

The Index of Relative Socioeconomic Disadvantage score at the 2001 Census for the metropolitan regions was 1 007, marginally higher than for South Australia at 1 000.

There were an estimated 26 044 Aboriginal people living in South Australia at June 2006.

Health status (chapter 2, page 24)

South Australia during the last 20 years has shown a steady increase in life expectancy at birth, and also in health adjusted life expectancy at birth.

The burden of disease in South Australia decreased slightly between 1999–2001 and 2001–2003, with males recording a higher disease burden than females.

South Australia's age adjusted death rate in the 20 years to 2005 decreased by 32 per cent.

Cardiovascular disease and malignant neoplasms were responsible for almost two-thirds of life lost to premature mortality in 2001–2003.

Seventy per cent of the years of life lost to death in South Australia in 2001–2003, occurring in people aged younger than 75 years, was categorised as potentially avoidable.

The rate of potentially avoidable mortality is 86 per cent higher in the most disadvantaged geographical areas compared to the least disadvantaged. The largest absolute differences between high and low disadvantage areas occurred in smoking, diabetes and alcohol harm.

Health priority areas (chapter 3, page 46)

Injury, domestic violence, cardiovascular conditions, cancer, diabetes, asthma, renal disease/failure, arthritis and musculoskeletal conditions together account for over 60 per cent of South Australian's burden of disease.

Prevention strategies continue to provide the greatest opportunities for health improvements for these conditions at the population level.

Injury is the leading cause of mortality in South Australians aged 1–44 years. Falls remain the most prominent injury threat among older people.

Mortality due to cardiovascular conditions has declined over the past decades, but this condition remained the leading cause of death in South Australia in each of the five years from 1999–2000 to 2003–04.

About one in three people will have cancer during his or her life. There were 8 456 new cases of cancer diagnosed, and 3 302 deaths, in South Australia in 2005.

The prevalence of diabetes has been increasing in South Australia over recent decades.

Asthma was reported by 13.4 per cent of South Australians aged 16+ years, and in 14.8 per cent of those aged 2–15 years.

The prevalence of respiratory conditions has remained relatively stable over the past five years.

The number and rate of people in South Australia requiring kidney dialysis and/or transplantation has increased progressively over recent years, in common with the rest of Australia.

Twenty per cent of South Australians reported that they had arthritis.

Risk factors for health (chapter 4, page 72)

Nearly 21 per cent (20.7) of people aged 15+ years self-reported being current smokers. People aged 20–49 years were significantly more likely to report being current smokers than were people in other age groups. Males were significantly more likely than females to report being current smokers.

About 90 per cent of people surveyed aged 19+ years were not eating the recommended five serves of vegetables per day; this figure was even higher for people aged 80+ years.

Nearly 30 per cent of people surveyed in 2006–07 aged 16+ years were classified as being at risk of harm from alcohol in the short-term; this risk was greater for people aged 50–69 years.

Close to 60 per cent of people were classified as overweight or obese. In general, men more than women, as well as people aged 40–69 years, were significantly more likely to be classified as overweight or obese.

Just over 50 per cent of people surveyed were doing enough physical activity; the proportion of those aged 16+ years in this category significantly increased in 2006–07.

The 2004–05 National Health Survey shows a higher percentage of South Australian people aged 18+ are at risk or high risk of harm from alcohol compared to the Australian population. A higher percentage of South Australians over Australian people are overweight or obese. There is a lower percentage of South Australians than Australians who currently smoke, and fewer who exercise at moderate and high levels.

The proportion of adults aged 16+ years with high blood pressure has not changed in recent years.

Not quite 15 per cent of people aged 16+ years self-reported having high cholesterol, with about the same levels in males and females. Many more older people reported having current high levels of cholesterol than did younger people.

Notifications of chlamydia infections (in both males and females) have increased considerably. The number of Hepatitis C Virus incident cases has increased slightly.

Nearly one-quarter-of-a-million doses of influenza vaccine were distributed in 2005–06, an increase on 2004–05. Most people aged 65+ years received annual influenza vaccination.

South Australia maintains immunisation coverage above 90 per cent for children aged 12–15 months and 24–27 months; this coverage is at or above national levels.

The coverage in June 2006 for meningococcal C vaccine in South Australia was 84.7 per cent for children aged 1–5 years compared to Australia coverage of 83.9 per cent.

There has been a marked increase in the numbers of notified cases of gonorrhoea and syphilis in recent years.

There were over 800 000 screening mammograms provided to nearly one-quarter-of-a-million individual women across South Australia from July 1988 to June 2006. Just over 4 400 breast cancers were diagnosed by BreastScreen SA from January 1989 to December 2005.

Nearly 70 per cent of women aged 20–69 years were screened for cervical cancer in 2004–05.

Mental illness (chapter 5, page 98)

Psychological distress decreased for people 16+ years between 2002–03 and 2006–07. People aged 16–19 years and 20–29 years had higher levels of psychological distress than did other age groups. More women than men in South Australia experience distress.

Mental illness accounted for nearly 10 per cent of the total burden of disease in South Australia in 2003 measured by Disability adjusted life years (DALYs). The burden of disease was 12.3 per cent if alcohol and substance use illnesses were included. The highest ranked burden of disease in the mental health category was depression.

South Australia in 2006–07 had nearly 17 000 hospital separations for mental health-related illnesses — just over 4 per cent of all public hospital separations. Depression was the most common diagnosis for mental health hospital separations, while schizophrenia accounted for the most patient days in hospital. Mental health hospital separations increased by 3.1 per cent between 2002–03 and 2006–07.

There were nearly 400 000 community mental health contacts during 2006–07, with about equal rates for males and females; 80 per cent of the encounters related to depression, sleep disturbance and anxiety, with depression the highest at 42.5 per cent.

The standardised death rate from suicide in South Australia was 10.7 per 100 000 population in 2006 (16.7 for males and 4.9 for females). This figure is higher than the national average of 8.6 per 100 000 population (13.6 for males and 3.8 for females).

Oral health (chapter 6, page 112)

Around 40 per cent of the population experiences pain from teeth, gums or dentures in a 12-month period.

There has been more than a 40 per cent increase in dental decay among South Australian children since the late 1990s, paralleling a similar national trend. Forty per cent of children by five years of age have decay experience and 60 per cent of this is untreated.

Children from country areas, lower socioeconomic backgrounds, CALD (culturally and linguistically diverse populations or communities), or who are Aboriginal, have more dental decay experience than do others.

The proportion of South Australian adults with all their teeth extracted (edentulous) has fallen by 60 per cent over the past 30 years.

There has been a 12 per cent increase in decay for low-income adults attending public dental clinics since the cessation of the Commonwealth Dental Health Program in 1997. The amount of untreated decay has increased by 50 per cent.

Aboriginal adults have fewer teeth with dental decay experience and less gum disease than do other concession card holders attending public dental clinics.

There are 54.8 practising dentists per 100 000 population compared with the national average of 46.9 per 100 000 in 2000.

Nearly all primary school and secondary school aged children receive dental care within a two-year period. Attendance at the dentist reduces for adults after the school years, and is lowest at 71 per cent for people aged 25–44 years old.

Waiting lists have reduced in recent years, except for specialist dental services.

Mothers, babies, children and youth (chapter 7, page 123)

Around 19 000 women give birth in South Australia each year and, after more than a decade of decline, this number is now increasing. Fertility in under-30-year-old women is declining, while that for over-30s is increasing.

Infant mortality in South Australia is currently around 4.0 per 1 000 live-births, comparing very favourably with other developed countries. Much improvement can be attributed to the fall in cases of Sudden Infant Death Syndrome (SIDS).

South Australia has very low maternal deaths by international standards; however, the rate in Aboriginal women is 5.4 times higher than for others in the community.

The proportion of women giving birth by caesarean section in South Australia is rising, with more occurring in private than in public hospitals.

Nearly 4 per cent of South Australia's 15–19 year-old girls became pregnant in 2006; a decline of 1 percentage point over the past decade. Around half these teenage pregnancies are terminated.

Nearly 5 000 pregnancies were terminated among women of all ages in 2005; this number has been declining steadily since 2001.

There are around 53 000 hospital admissions each year of people aged 0–17 years. Major medical reasons for admission are asthma and bronchitis, 'croup', and gastroenteritis; nearly all these conditions are treated in public hospitals. The most common surgical procedures are tonsillectomy/adenoidectomy and myringotomy, with at least half of these procedures occurring in private hospitals.

Nearly all children in South Australia are immunised by the age of two years. Rubella cases have fallen over the past 10 years, as have whooping cough cases in 0–4-year-olds.

Around 14.1 per cent of South Australia's 4–17 year-olds have mental health problems, but only 29 per cent of them receive any services. Help is described by half the parents of these children as too expensive or the location of its availability is unknown.

Around 4 000 children aged 0–17 years in South Australia may have physical disabilities sufficiently severe that they require rehabilitation services.

Older people (chapter 8, page 150)

Arthritis is the most prevalent chronic condition for older men, followed by cardiovascular disease and diabetes. The most prevalent chronic conditions for older females are arthritis, osteoporosis and cardiovascular disease.

The largest proportion of older people in hospital for chronic disease were there for 'care involving dialysis', followed by chronic obstructive pulmonary disease and stroke.

Dementia and Alzheimer's disease are the leading causes of the morbidity burden in older people of both genders.

Death rates for older people declined quite significantly over the period from 1995 to 2004.

Older patients accounted for 38 per cent of all hospital separations in 2006–07 and for 51 per cent of all patient days, yet represented only 15 per cent of the state's population.

Just over 10 per cent of older people have a current doctor-diagnosed mental health condition.

There were 9 095 separations in both private and public hospitals as a result of falls by older people during 2006–07.

Aboriginal people (chapter 9, page 168)

Life expectancy for South Australian and Western Australian Aboriginal people (1996–2001) as a combined group was 58.5 years for males and 67.2 for females (separate data for South Australia is not available).

The median age of death for Aboriginal males in 2005 was 42.4 years and for Aboriginal females 47.5 years.

External causes of death such as transport accidents, intentional self–harm and assault accounted for 23.9 per cent of South Australian Aboriginal deaths in 2005.

The leading causes of premature mortality for Aboriginal South Australians between 2001–2003 were ischaemic heart disease, road traffic accidents, suicide and self-inflicted injuries, and Type 2 diabetes.

Aboriginal women accounted for 2.7 per cent (487) of the confinements in South Australia in 2005. Aboriginal teenage women have a higher proportion of confinements than do non-Aboriginal teenage women; typically around 20 per cent (21.5 per cent in 2005), compared to around 5 per cent.

The crude hospitalisation rate for diabetes for Aboriginal South Australians in 2006–07 was 3.3 times higher than for other South Australians.

The crude hospitalisation rate for renal disease for Aboriginal South Australians in 2006–07 was eight times higher than for other South Australians.

The crude hospitalisation rate for mental health conditions for Aboriginal South Australians in 2006–07 was 3.5 times higher than for other South Australians.

Survey data in 2004–05 show that well over half of Aboriginal South Australians were current smokers, and the same proportion were overweight or obese.

South Australian Aboriginal children (4–16 years of age) have higher rates of dental decay, missing teeth, filled teeth and unhealthy gums than do other South Australian children.

Health care services and resources (chapter 10, page 204)

Hospital use has increased progressively over the years, with an increase of nearly four per cent from 2005–06 to 2006–07.

Separations in private hospitals between 2002–03 and 2006–07 increased by 13.3 per cent. Separations in public hospitals increased by 11.8 per cent. The average length of stay in South Australian hospitals (excluding same-day separations) has decreased.

Presentations in metropolitan public hospital emergency departments increased by 5.8 per cent in 2006–07 over the previous financial year; nearly 50 per cent were resuscitation/emergency/urgent cases.

The percentage of emergency patients seen within the specified waiting time targets has increased among metropolitan public hospitals.

Just over 80 per cent of elective surgery patients during 2006–07 were seen within the clinically appropriate time.

The South Australian GP headcount during 2005–06 was 2 042. The number of full-time workload equivalent GPs practising in the state was 1 404, an increase of 2.9 per cent over the previous year.

The number of potentially preventable hospitalisations increased 6.7 per cent between 2004–05 and 2005–06.

The Royal District Nursing Service of SA Inc (RDNS) had 20 648 clients within metropolitan Adelaide, made over half-a-million nursing and support visits, and conducted nearly a quarter-of-a-million other client contacts during 2006–07.

Metro Home Link provided nearly 15 000 care packages to nearly 13 000 patients during 2006–07; nearly 8 000 of the total were hospital avoidance packages, while the remainder were hospital supported discharge packages.

The State Government provided financing of $3.043 billion to Health Regions and other health entities during 2006–07.

Safety and quality (chapter 11, page 230)

Nearly 20 per cent of red cell transfusions in 2002 were outside the national guidelines. The introduction of the BloodSafe™ program and its implementation in eight metropolitan hospitals has reduced this rate to 6 per cent.

A large proportion of medicine-related incidents — up to 50 per cent — are preventable. Medication errors in the public hospital system are estimated to cost $380 million per annum.

The National Inpatient Medication Chart was in use in all South Australian public hospitals from March 2007.

Health care-associated infection and appropriate antibiotic use in South Australia's public and private metropolitan hospitals has been monitored since 2001; an improvement has been seen during this time in the overall rate of bloodstream infection and the rate of infection due to MRSA (antibiotic-resistant golden staph) has been halved.

The Patient Evaluation of Health Services (PEHS) Program indicated consumers had an overall satisfaction rate of nearly 90 per cent in 2005.

SA Health is committed to learning from adverse events that occur in the health system. The first national sentinel event report was released in 2007 by the Australian Institute of Health and Welfare (AIHW) based on all states (including South Australia) and territories contributing their sentinel event information to a national report. Analysis of adverse events and reporting of improvements made as a result is published annually in the *South Australian Patient Safety Report*.

Introduction

This document is the first publication of *South Australia: our health and health services*. The report:

- provides an overview of the health of the people of South Australia
- describes the determinants of health and outlines the extent to which South Australians are being exposed to the risk factors associated with ill-health
- describes the health and wellbeing of vulnerable populations
- lists the health priority areas, and the initiatives put in place and planned to address health needs in these critical areas
- describes the wide range of health services that are available within South Australia and their use.

The report aims to provide meaningful information and data to people working within the health industry and the wider public; within it is some information that is technical in nature and, where possible, explanations are provided to enhance the readers' understanding of the processes and concepts in relation to these more technical aspects of the report. References also are provided to web sites and publications that provide further background information on these measures.

The report has been structured in such a way that it can be read in its entirety or as individual chapters. Some duplication of information has occurred in making chapters 'self-contained'. This method was considered necessary to accommodate readers whose interests, at a particular point in time, relate to a specific element or feature of South Australia's health and health services. A downloadable version of the report, and its individual chapters, can be obtained on SA Health's web site at <www.health.sa.gov.au>.

The report contains a large number of population health indicators and other pieces of information, in both statistical and narrative form, that provide a comprehensive overview of the health status of people living within South Australia, how that status compares with other jurisdictions within Australia (where appropriate) and how it has changed over time. Interstate comparisons and trends over time enable better evaluation of the health system and population health status by providing reference points for measuring relative performance.

South Australia's health status in many areas compares favourably with that of other jurisdictions and has improved over time. Much can be done to improve health status further, however, and this report describes many of the changes in lifestyle, and the interventions and initiatives that can be introduced or enhanced, that will lead to improved health outcomes; examples include extending disease screening programs, greater monitoring and surveillance of specific diseases, targeting the health needs of specific population groups with poorer health status, and introducing further early intervention programs to promote good health through better lifestyle choices.

The information in this report has been derived from a large number of sources including hospitalisation data, health survey data, deaths data, census data, Medicare Australia data, communicable disease data, disease register and surveillance data, and health publications and journals. The most recent and available data have been presented within this report. Data have been provided in calendar years (for example, 2007) and financial years (for example, 2006–07). Some measures span multiple calendar or financial years.

The report is divided into 11 chapters, beginning with a demographic profile of South Australians and followed by an overview of their health status and the priority areas for improvement. The next chapter is a description of risk factors and their potential impact on the health of South Australians, and this precedes chapters on the specific health programs of mental health; oral health; and maternal, infant and child health. The report also profiles the health status of Aboriginal people within the state, drawing comparisons with non-Aboriginal people; describes the range and type of health service providers and related service use and finally, lists specific safety and quality issues and initiatives within the health arena in South Australia and nationally.

Each chapter begins with a summary of the key issues and indicators, and concludes with a section on the services provided and initiatives undertaken that are relevant to the specific chapter. Details also are provided, as appendices, on the various data collections and sources used to generate the report.

SA Health and health services more generally are undergoing considerable change aimed at ensuring services are available where and when they are needed, avoiding unnecessary duplication and providing the most effective, safe and efficient health services to the people of South Australia.

The new Health Care Bill 2008 provides the mechanism for changes in governance arrangements within SA Health that will make health services and regions directly accountable to the Department of Health, paving the way for a more coordinated and responsive health system. The *SA Health Care Plan* and *South Australia's Strategic Plan* are the blueprints for improved service provision and for improving the health status of South Australians. The indicators and other information in this report, along with the strategic targets within both plans, provide a foundation for measuring future improvements.

1 Population profile

In this chapter

- Age and sex distribution
- Population growth and projection
- Geographic distribution
- Socioeconomic status
- Aboriginal people

Summary

- The estimated residential population of South Australia at June 2007 was 1 584 513.
- The South Australian population continues to age. The median age of the South Australian population in 2003 was 38.3 years, compared with 38.9 years in 2007.
- South Australia has the oldest population of all the states and territories. People aged 65 years or more made up 15.2 per cent of the state's population as at June 2007, compared with 14.9 per cent in 2003.[3]
- The female population in June 2007 slightly outnumbered the male population — 50.6 per cent to 49.4 per cent respectively; this is projected to continue until 2021.
- The proportion of females in the population increases with age. Females in June 2007 made up 55.9 per cent of the South Australian population aged 65 years or more, and 63 per cent of the population aged 80+ years.
- The state is projected to reach 1 768 391 people by 2021 (an average increase of approximately 0.8 per cent per annum) based on the *High series* method. South Australia's population, based on the *2 Million by 2050* method, is projected to increase at an average rate of 0.7 per cent per year, reaching 1 736 879 people by 2021.
- The South Australian population is predominantly urban. Approximately 72 per cent of the South Australian population in June 2006 lived in the metropolitan area, 13 per cent lived in inner regional areas, and 15 per cent in outer regional and remote areas.
- Adelaide in 2021 will remain the dominant population centre in South Australia. A majority of the growth in Adelaide is predicted to occur in the north and south of the city. The populations of most local government areas along the South Australian coast will increase, while the population of most inland areas of South Australia is predicted to decline.
- The Index of Relative Socioeconomic Disadvantage (IRSD) is one of the Socioeconomic Indexes for Areas (SEIFA) based on Census data. Areas can be defined using this index as relatively advantaged (high scores) or relatively disadvantaged (low scores). The IRSD score at the 2001 Census for the metropolitan regions was 1 007, marginally higher than the index score of 1 000 for South Australia as a whole.
- There were an estimated 26 044 Aboriginal people living in South Australia at June 2006, according to experimental estimated residential populations. Aboriginal people accounted for 1.7 per cent of the total South Australian population and 5.0 per cent of the total Aboriginal population in Australia.[3]

Introduction

South Australia has the fifth largest population of Australia's eight states and territories. The estimated residential population (ERP) for South Australia was 1 584 513 people as at June 2007, a 1.0 per cent increase over the previous year, according to the Australian Bureau of Statistics (ABS).[3] The South Australian population comprises 49.4 per cent males and 50.6 per cent females. Aboriginal people comprise 1.7 per cent of the total South Australian population, compared with 2.3 per cent Aboriginal people in Australia.[1]

Approximately 88.2 per cent of South Australians are Australian citizens, and 0.6 per cent overseas visitors.[1] South Australians born overseas accounted for 20.3 per cent of the state's population, compared to 22.2 per cent for Australia.[1]

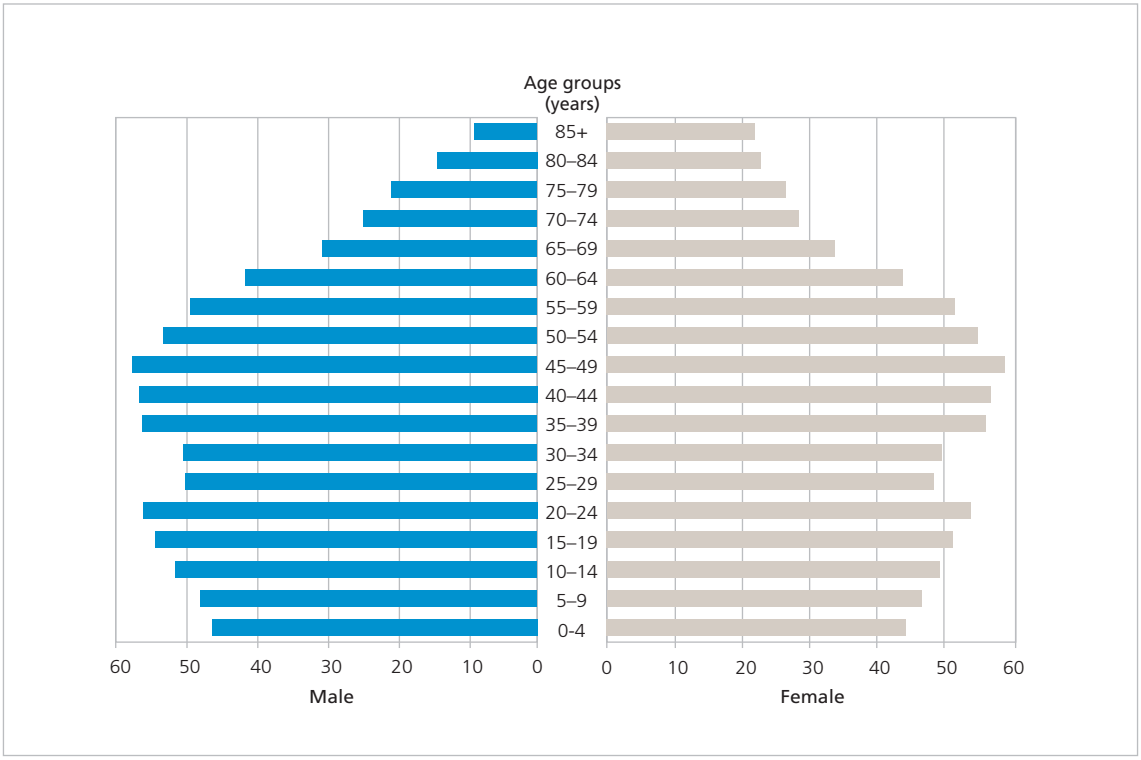
South Australia is a highly urbanised state, with 71.7 per cent of its population living in Adelaide.[1] The Adelaide metropolitan area continues to grow both north and south, as well as east into the Mount Lofty Ranges. South Australia's coastline also is experiencing population growth.[7]

Key demographic indicators associated with health status and health inequalities are critical when considering the current and future health needs of South Australians. These demographic indicators are used within this chapter to describe the South Australian population.

1.1 Age and sex distribution

South Australia has the oldest population of all the states and territories, as a result of lower fertility, disproportionately low migration gain and higher net interstate losses.

Graph 1.1.1 Age and gender profile, June 2007, South Australia ('000)



Source: Australian Bureau of Statistics, 3101.0 Australian Demographic Statistics, TABLE 6 — Estimated Resident Population, Age Groups — at 30 June 2007.

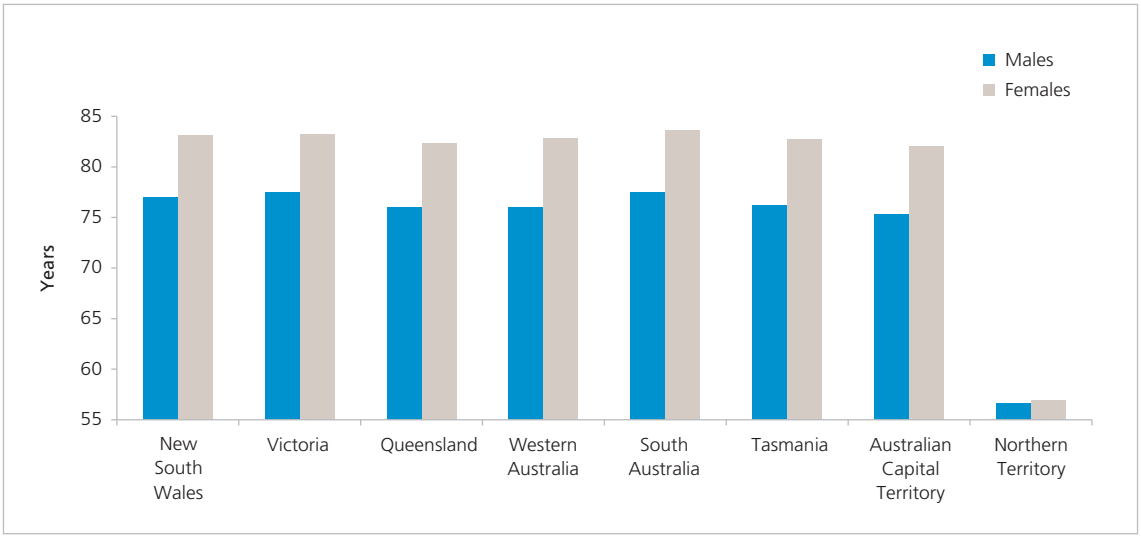
The South Australian population has continued to age, with people aged 65+ years contributing 15.2 per cent of the state's population in June 2007, compared with 14.9 per cent in June 2003. The proportion of younger people continues to decline. The proportion of the state's population in June 2007 who were children aged under 15 years was 18.1 per cent, compared with 18.8 per cent in June 2003.[3]

South Australia's median age continues to be the highest of all states and territories in Australia, with the median age (the age at which half the population is older and half is younger) increasing from 38.3 years in 2003 to 38.9 years in 2007. This increase is consistent with the national trend, with Australia's median age increasing from 36.2 years in 2003 to 36.8 years in 2007.[2]

Females outnumbered males by 19 101 in South Australia in 2007. The state's sex ratio (number of males per 100 females) was 97.6, with 782 706 males and 801 807 females. The sex ratio for South Australia was below that of Australia (98.9).[3]

The number of females in South Australia aged 65+ years (134 463) was 26.5 per cent higher than the number of males in this age group (106 259). There are more than twice as many females (22 092) as males (10 621) aged 85+ years.

Graph 1.1.2 Median age at death, Australia, 2005



Source: Australian Bureau of Statistics, 3101.0 — Australian Demographic Statistics, Mar 2007 (tables 11 & 12).

The median age at death represents the age at which the deaths in a given time period relate to exactly half the people above that age and half below it. Both South Australian males and females had the highest median age at death in 2005, at 77.5 years and 83.6 years respectively. The average median age at death of all Australian males and females, in comparison, was 76.8 and 82.9 years respectively.

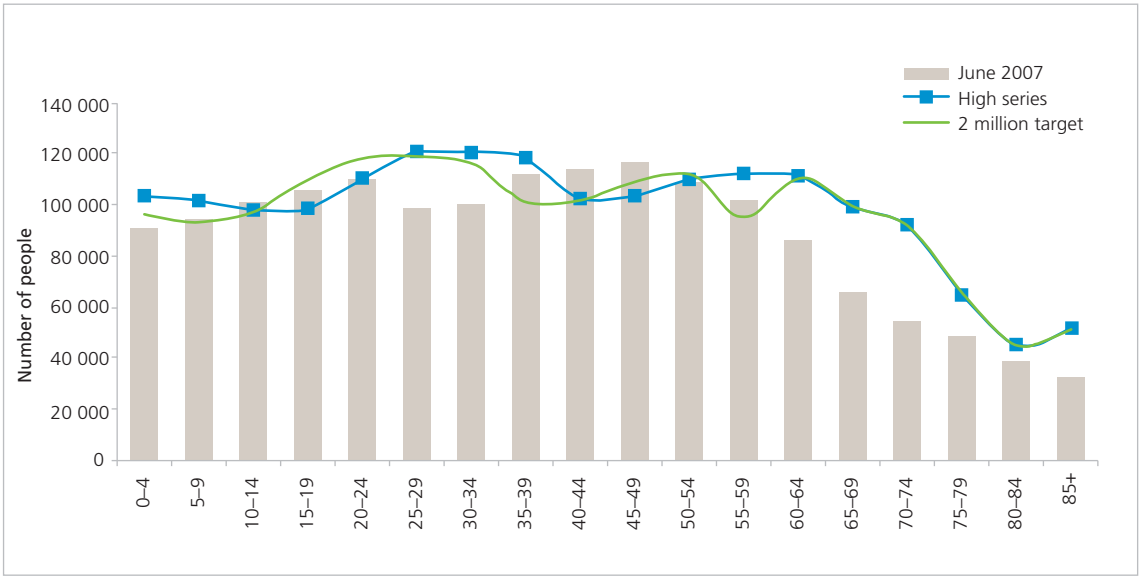
1.2 Population growth and projection

The population of South Australia increased by an average of 0.8 per cent per annum in the five years leading up to June 2007, nearly half that experienced by Australia as a whole (1.4 per cent). The estimated resident population of South Australia at June 2007 was 1 584 513 million people, an increase of 16 309 from the previous year.[3]

South Australia's population increased 4.2 per cent between June 2002 and June 2007, one of the smallest rates of all Australian states and territories.[3] The state's population as at June 2007 was 7.5 per cent of Australia's total.

State population projections based on the *High* series

Graph 1.2.1 State population projections, South Australia



Note: Projected population methods above are the state-level high series, and the target of 2 million by 2050 scenario.
Source: Planning SA, 2007.

Planning SA, a South Australian State Government agency, has produced population projections for South Australia presenting four demographic scenarios — High, Medium, Low and 2 million target. These projection scenarios were prepared with guidance by the Interdepartmental Forecasting Committee and the assistance of academic demographers. These four population projections have been endorsed by State Cabinet for use by South Australian State Government agencies.

Shown here is the High series of Planning SA projections. South Australia's population based on this projection series is projected to steadily increase and reach 1 768 391 people by 2021 (an average increase of approximately 0.8 per cent per annum).

The ageing of South Australia's population, similar to the rest of Australia, is projected to continue. South Australia's age structure will change substantially by 2021, with 47.1 per cent more people aged over 64 years and 1.9 per cent more people aged less than 25 years.

Children aged 0-14 years, at June 2007, represented just over 18 per cent of South Australia's population.[3] This age group is projected by 2021 to represent approximately 17 per cent of the population. People aged 65+ years or more represent just over 15 per cent of the population and are projected to be close to 20 per cent of the total population in 2021.

The Adelaide Statistical Division based on the High series projection is projected to continue as the major driver of population growth in the state. The Estimated Residential Population (ERP) in June 2006 for this division was 1.14 million[5], and it is projected to be 1.29 million by 2021.

This Division will continue to have one of the younger populations and attract the dominant share of overseas immigrants to the State, according to Planning SA. *Outer Adelaide is projected to have the fastest rate of population growth in the State with most of the growth resulting from flows of older retirees to the southern coast and of young home buyers to the Adelaide Hills seeking cheaper land on the outskirts of metropolitan Adelaide.*[9]

The projected average annual rate of population growth between 2006 and 2021 is 1.8 per cent per annum in Outer Adelaide, the highest rate of growth projected for any statistical division in the state, and close to twice the rate of growth projected for Adelaide Statistical Division, the second fastest growing division.[9,5]

1.2.1 State population projections based on the 2 Million by 2050 method

The South Australian Government has a population policy identifying specific population targets that, if achieved, will result in a total state population of 2 million by the end of year 2050.

Planning SA has prepared projections based on this target that show South Australia's population would increase at an average rate of 0.7 per cent per year, reaching 1 736 879 people in 2021.

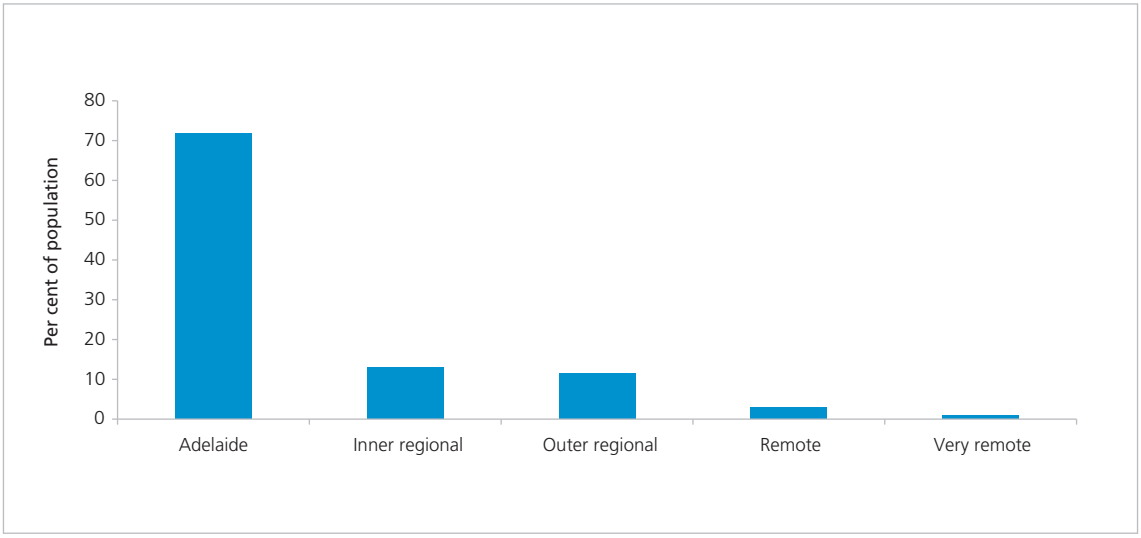
The proportion of people aged 0–24 years is projected to increase by 2.5 per cent by 2021. Older people aged 65+ years at the same time are projected to increase by 46.8 per cent and represent approximately 20 per cent of the state's population.

The major contributors of growth in the South Australian population are natural increases (births minus deaths) and net overseas migration. The projected population numbers for the state in 2021 are affected by assumptions about future migration, from both overseas and interstate.[9]

1.3 Geographic distribution

There are wide variations in regional population growth rates. The geographic distribution of the population within South Australia is concentrated overwhelmingly in Adelaide, the site of most economic activity and employment.

Graph 1.3.1 Population distribution, June 2006, South Australia



	Adelaide	Inner regional	Outer regional	Remote	Very remote
Population	1 115 078	201 348	178 000	46 822	13 408
Per cent of population	71.7	13.0	11.4	3.0	0.9

Source: Australian Bureau of Statistics, Cat. No. 3218.0 — Regional Population Growth, Australia.

The population of Adelaide Statistical Division (SD) at June 2006 was 1.115 million people.[5] Adelaide's yearly population increased by 9 272 people (0.8 per cent), while the remainder of the state increased by 3 288 people (0.7 per cent).[5] Adelaide SD accounted for 71.7 per cent of South Australia's population at June 2006.[5] This proportion is projected to increase to 76 per cent by 2051.[4]

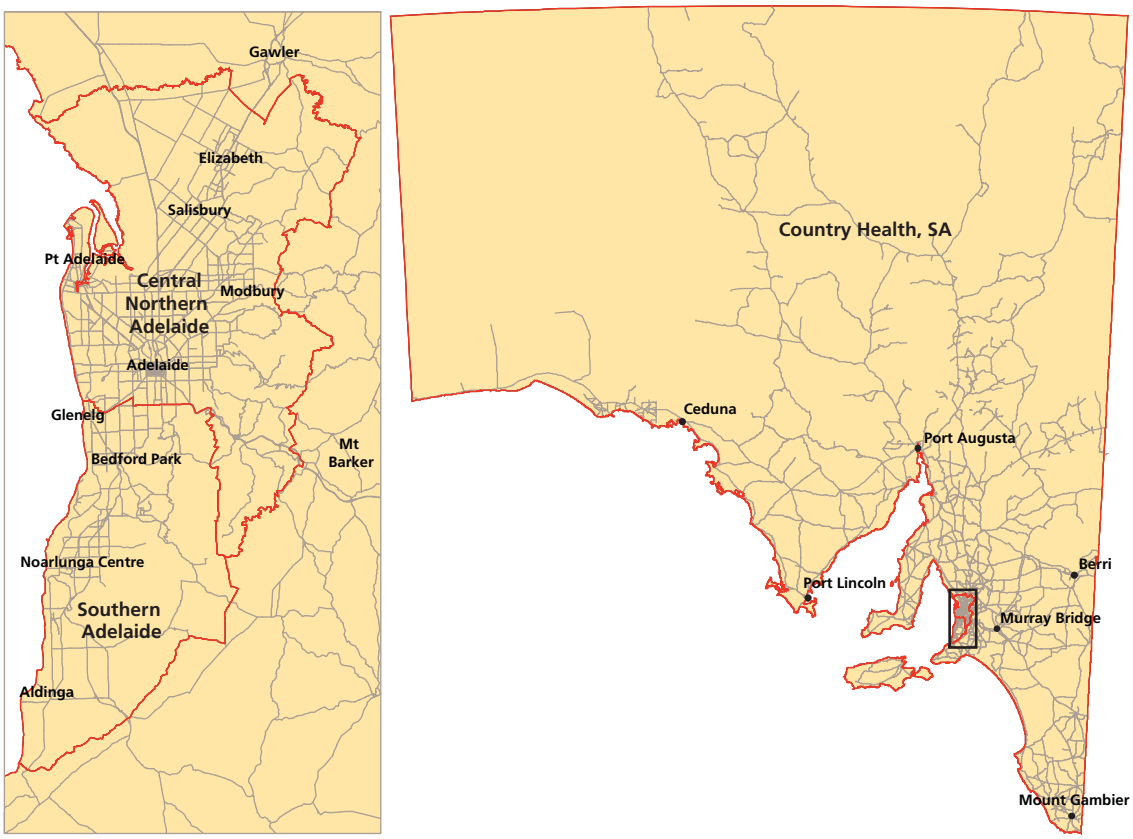
Population growth has been relatively strong in the inner-regional areas, such as Mount Barker in the Mount Lofty Ranges, as well as in suburbs neighbouring the large horticultural industries in the south and north of Adelaide. Other towns within close proximity of Adelaide also are experiencing a share of the state's population growth — for example, Victor Harbor, Goolwa, Barossa Valley, Nuriootpa and Kapunda.[11]

South Australia has approximately 178 000 people living in outer regional areas, and 60 000 living in remote and very remote areas.[4] There have been considerable population increases at regional centres such as Mount Gambier, Port Lincoln and Roxby Downs; this is mainly a result of large agricultural, aquaculture and mining industries in the areas, requiring extensive human resources.[11]

SA Health comprises three regions that manage the provision of health services in the metropolitan area: Central Northern Adelaide Health Service; Southern Adelaide Health Service; and the Children, Youth and Women's Health Service.

The first two regions are responsible for providing services in defined geographical areas while the third region provides statewide services to children, youth and women. Country Health SA — while a single country health region — provides a more integrated system of care across country South Australia. Maps of the three geographical regions are shown opposite.

Figure 1.3.1 South Australian Health Service Regions

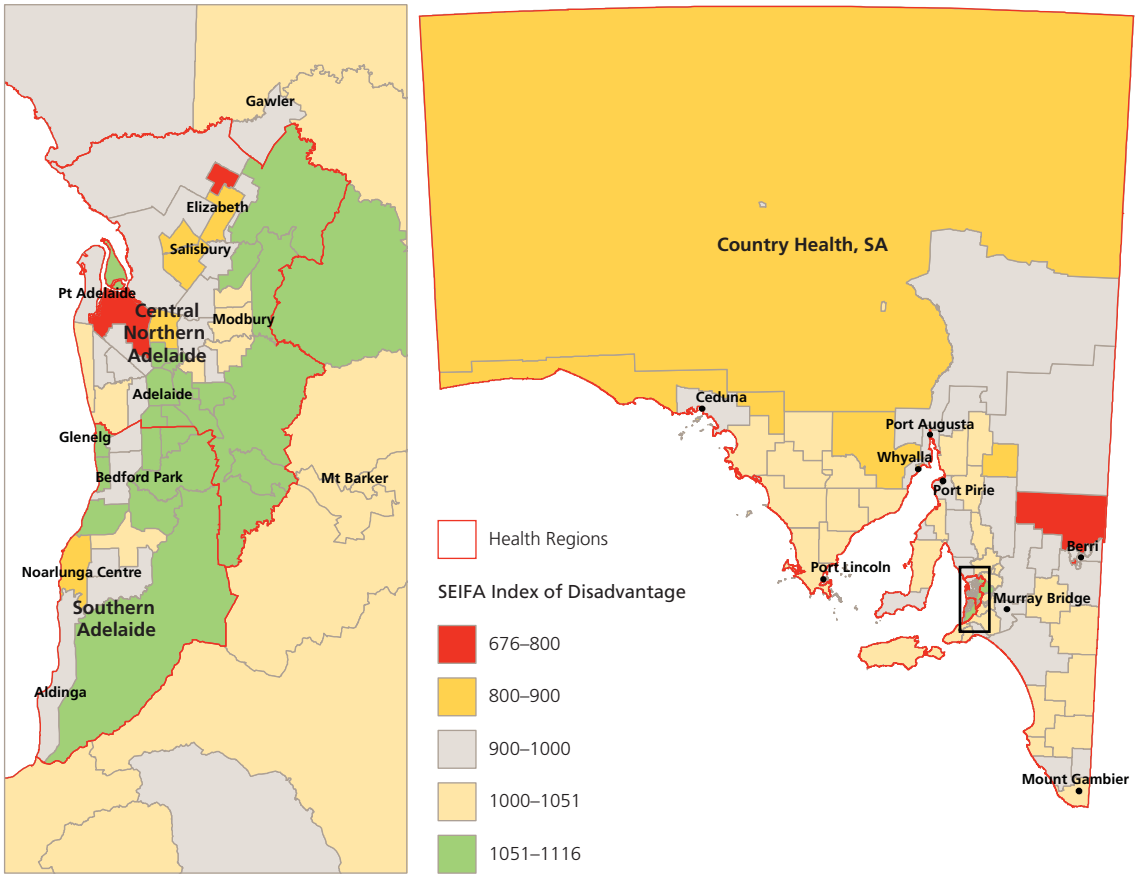


The distribution of population for the SA Health geographic regions, based on the June 2006 Estimated Residential Population, is Central Northern Adelaide with 791 880, Southern Adelaide with 334 833 and Country with 441 491 people.

Refer to Chapter 10 for more information on SA Health services.

1.4 Socioeconomic status

Figure 1.4.1 Socioeconomic status, South Australia, 2001



Source: Australian Bureau of Statistics, Cat. No. 2033.4.55.001 — Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), South Australia — Data Cube only, 2001.

There is a common link among a person's socioeconomic status, health-related behaviour, and health status. People living in areas of low socioeconomic status in South Australia are more likely to be unemployed, or unskilled/semi-skilled, and are less likely to have a motor car, or own a home.[10]

People with low socioeconomic status are more likely to smoke and/or consume large amounts of alcohol, and less likely to be physically active, and/or buy and consume healthy food.[10]

The Index of Relative Socioeconomic Disadvantage (IRSD) is one of the Socioeconomic Indexes for Areas (SEIFA) developed by the Australian Bureau of Statistics based on Census data. The IRSD is based on information available relating to education, income, occupation, Aboriginal status, ethnicity, and housing. Areas can be defined using this index as relatively advantaged (high scores) or relatively disadvantaged (low scores).[12]

The IRSD score at the 2001 Census for the metropolitan regions (excluding Gawler) was 1 007, marginally higher (seven index points) than the index score for South Australia of 1 000.[6]

1.4.1 Central Northern Adelaide Health Services region

This region had a very wide variation in index scores. The most disadvantaged Statistical Local Areas (SLAs) were Playford–West Central (with an index score of 758), Port Adelaide Enfield–Port (795) and Playford–Elizabeth (803). The areas with the highest IRSD scores (most advantaged) were located in the eastern suburbs and included Burnside–South-West (an index score of 1 117), Adelaide Hills–Ranges (1 114), and Adelaide Hills–Central (1 113).[6]

1.4.2 Southern Adelaide Health region

The most disadvantaged SLAs in the Southern region were Onkaparinga–North Coast (an index score of 899), Onkaparinga–Hackham (920), and Onkaparinga–Morphett (953). The SLAs with the highest IRSD scores (most advantaged) in the south were Mitcham–North-East (an index score of 1 111), Mitcham–Hills (1 102), and Onkaparinga–Reservoir (1 086).[6]

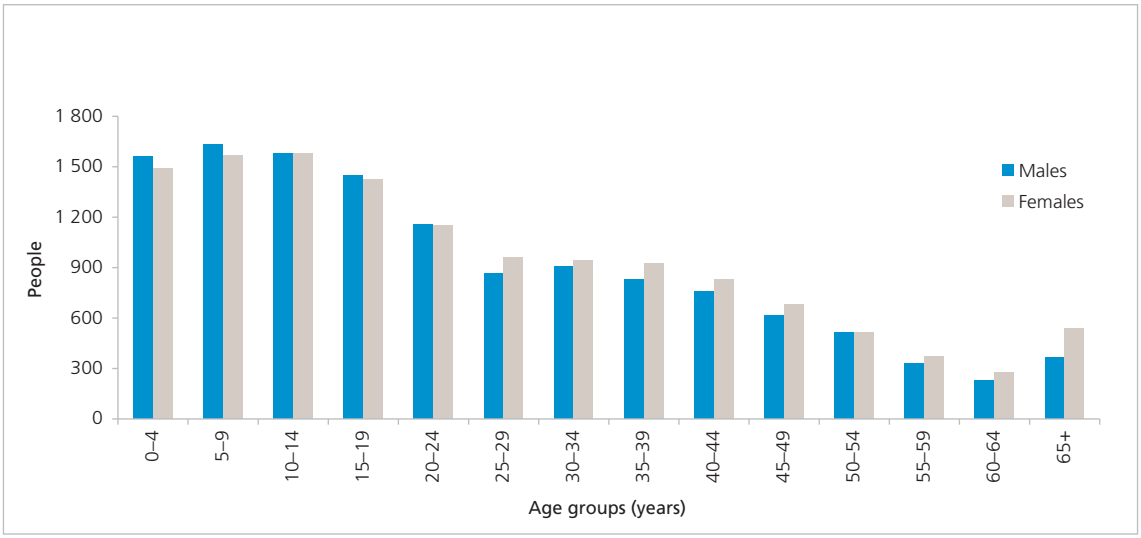
1.4.3 Country Health SA

The IRSD score in 2001 for country South Australia was 983, slightly below the index score for South Australia of 1 000.[6] The lowest index scores were recorded for SLAs in the north and west of the state. The lowest scores coincide with areas having above-average Aboriginal populations.

The majority of the regions in country South Australia had IRSD scores below 1 000, indicating that they experience greater levels of disadvantage than in the state as a whole. The IRSD score for Northern and Far Western (926) was lower than the state average by 74 index points.[6]

1.5 Aboriginal people

Graph 1.5.1 Aboriginal population, June 2006, South Australia



Source: Australian Bureau of Statistics, 3101.0 — Australian Demographic Statistics, Mar 2007 (tables 11 & 12).

There were an estimated 26 044 Aboriginal people living in South Australia at June 2006, according to the experimental Estimated Residential Population. Aboriginal people accounted for 1.7 per cent of the total South Australian population and 5.0 per cent of the total Aboriginal population in Australia.[3]

The Aboriginal population is younger than the rest of the population, with 36.1 per cent of the population under 15 years of age compared with approximately 18.1 per cent of all South Australians.

The highest numbers of Aboriginal people are aged 5–9 years. The number of Aboriginal people within each age group starts to decrease after this age cohort, while the other South Australian population peaks in the 45–49 age group, and decreases after that.

The Aboriginal population in South Australia aged 65 years or more is 3.5 per cent, compared to 15.1 per cent of all South Australians (for June 2006). There also is a substantial drop in the number of Aboriginal people aged between 20–24 and 25–29 years, illustrative of a relatively high mortality rate among young adults.

1.6 Notes

1. Australian Bureau of Statistics, *2006 Census QuickStats: South Australia*, viewed 29 June 2007, <http://www.censusdata.abs.gov.au/ABSNavigation/prenav/ViewData?subaction=-1&producttype=QuickStats&areacode=4&action=401&collection=Census&textversion=false&breadcrumb=PL&period=2006&javascript=true&navmapdisplayed=true&>

2. Australian Bureau of Statistics, 2007, *Population by Age and Sex, Australian States and Territories Jun 2007*, Cat. no. 3201.0, Table 2, viewed 12 December 2007, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3201.0Jun%202007?OpenDocument>

3. Australian Bureau of Statistics, 2007, *Australian Demographic Statistics Jun 2007*, Cat. no. 3101.0, viewed 7 December 2007, <http://www.abs.gov.au/ausstats/abs@.nsf/81d2945d3269ee5cca25709a00138ffb/6949409dc8b8fb92ca256bc60001b3d1!OpenDocument>

4. Australian Bureau of Statistics, 2006, *Population Projections, By age and sex, South Australia — Series A*, Cat. no. 3222.0 Table A4, viewed 2 July 2007, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3222.02004%20to%202101?OpenDocument>

5. Australian Bureau of Statistics, *Regional Population Growth, Australia*, cat. no. 3218.0, ABS, viewed 2 July 2007, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/3218.0Main%20Features52005-06?opendocument&tabname=Summary&prodno=3218.0&issue=2005-06&num=&view=#SOUTH%20AUSTRALIA>

6. Australian Bureau of Statistics, 2006, *Census of population and housing: socio-economic indexes for areas (SEIFA), Australia*, data cube: Excel spreadsheet, Cat. no. 2033.0.55.001, viewed 14 August 2007, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2033.0.55.0012001?OpenDocument>

7. Department for Environment and Heritage, *Current land use in South Australia*, Department for Environment and Heritage, Adelaide, 2007, viewed 18 August 2007, <http://www.environment.sa.gov.au/reporting/land/landuse/current.html>

8. Department for Environment and Heritage, *Changes in population growth*, Department for Environment and Heritage, Adelaide, 2007, viewed 18 August 2007, <http://www.environment.sa.gov.au/reporting/human/population/changes.html>

9. Planning SA, *Population Projections for South Australia (2001–31) and the State's Statistical Divisions (2001–21)*, Primary Industries and Resources SA, Planning SA, Adelaide, June 2007, viewed 18 August 2007, <http://dataserver.planning.sa.gov.au/publications/1173p.pdf>

10. Department of Health, *Better Choices Better Health*, Department of Health, Adelaide, April 2003, viewed 18 August 2007, <http://www.dh.sa.gov.au/generational-health-review/documents/GHR_Main_Report_WEB.pdf>

11. Government of South Australia, *Prosperity through people: a population policy for South Australia*, Government of South Australia, Adelaide, March 2004, viewed 18 August 2007, <http://www.southaustralia.biz/move/Files/Population_Policy.pdf>

12. Department of Health, *A Social Health Atlas of South Australia*, 3rd Ed, Public Health Information Development Unit, Department of Health, Adelaide, 2006 viewed 18 August 2007, <http://www.publichealth.gov.au/publications/a-social-health-atlas-of-south-australia-%5Bthird-edition%5D.html>

2 Health status

In this chapter

Summary

- Health status indicators suggest that South Australia enjoys a high level of health overall. More than three quarters (83.2 per cent) of all respondents aged 16+ years reported in 2006–07 that their health status was excellent, very good or good, according to the South Australian Monitoring and Surveillance System (SAMSS).
- South Australia has shown, during the last 20 years, a steady increase in life expectancy at birth. Life expectancy at birth for the period 2003–2005 was 78.1 years for males and 83.4 years for females. Females continue on average to live longer than males; however, the gap narrowed from 6.9 years in 1984 to 5.3 years in the 2003–2005 period.
- Health adjusted life expectancy at birth has increased in South Australia, from 69.8 years in 1999–2001 to 70.4 years in 2001–2003 for males, and from 74.9 years in 1999–2001 to 75.1 years in 2001–2003 for females.
- The burden of disease in South Australia (measured by years of life lost and years of life lost to disability) decreased slightly between 1999–2001 and 2001–2003, with males recording a higher disease burden than females.
- South Australia's age adjusted death rate in the 20 years to 2005 decreased by 32 per cent to 6.2 per 1 000 persons. The Australian rate, by comparison, fell by 39 per cent to 6.0 per 1 000.
- Cardiovascular disease and malignant neoplasms were responsible for almost two-thirds of life lost to premature mortality.
- Seventy per cent of the years of life lost to death in South Australia, occurring in people aged under 75 years, was categorised as potentially avoidable.
- There are clear differences in disease burden across levels of geographic area grouped by socioeconomic disadvantage. The rate of potentially avoidable mortality is 86 per cent higher in the most disadvantaged areas compared to the least disadvantaged.
- As area disadvantage increases so does health loss attributed to risk factors. The largest absolute differences between high and low disadvantage areas occurred in smoking, diabetes and alcohol harm.

Introduction

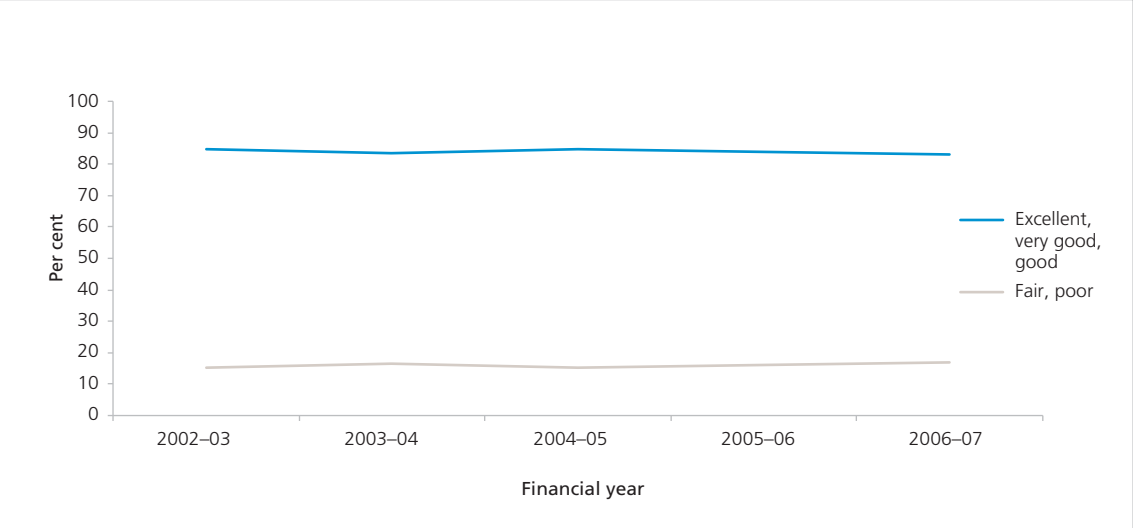
A range of summary indicators describing the health status of the South Australian population is included in this chapter. The indicators include self-reported health ratings, life expectancy and mortality. Healthy life expectancy also is included to provide insight into the relative contribution of various diseases, conditions and causes of injury to the population, and to give a perspective not only on whether South Australians are living longer, but whether this time is being spent in good health.

Avoidable mortality provides a perspective on deaths that are potentially avoidable given available knowledge about social and economic policy impacts, health behaviours and health care.[1]

Health inequalities also are described within the chapter through both avoidable mortality data and burden of disease data; this highlights the relationship between relative socioeconomic disadvantage and population health loss due to disease, injury and death.

2.1 Self-assessed health status

Graph 2.1.1 Self-assessed health status, proportion of the population aged 16+ years



	2002–03	2003–04	2004–05	2005–06	2006–07
Excellent, very good or good	84.8	83.4	84.7	83.8	83.2
Fair or poor	15.2	16.6	15.3	16.2	16.8

Note: Self-assessed health status was determined by asking respondents if they would rate their health as excellent, very good, good, fair or poor.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

A measure of self-assessed health status has been derived from survey data. Respondents to the South Australian Monitoring and Surveillance System (SAMSS) survey were asked whether they perceived their health status to be excellent, very good, good, fair or poor. The indicator provides a simple and global tool which has been used increasingly in studies where researchers seek to understand the factors that contribute to the level of health achieved and health inequalities.[2]

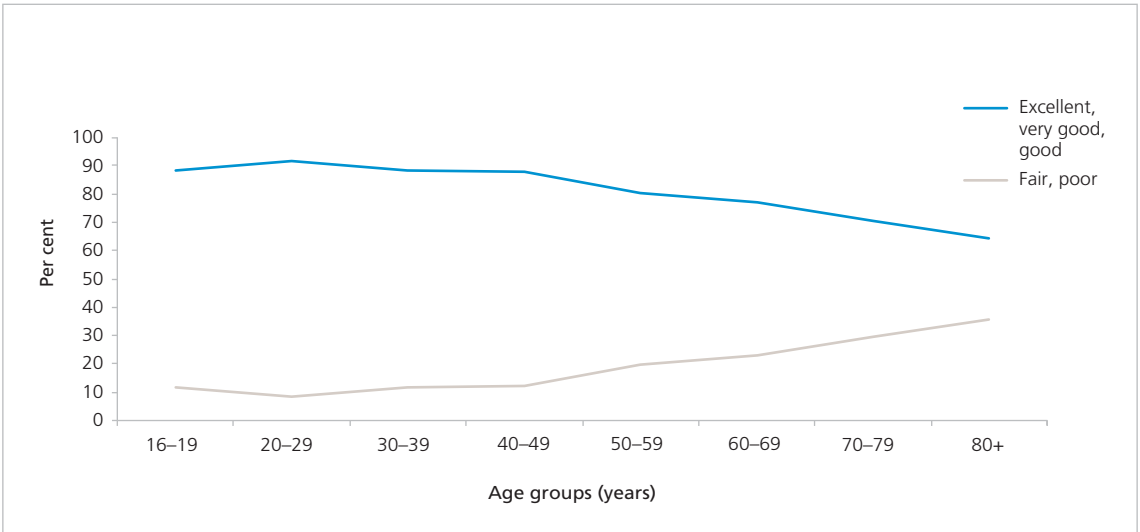
The results of the 2006–07 SAMSS indicate that 83.2 per cent of respondents aged 16+ years reported their overall health as excellent, very good or good, and 16.8 per cent of respondents reported their overall health as fair or poor. There were no significant differences in the proportion of males compared to females who reported their overall health status as excellent/very good/good or fair/poor as shown in the table below.

Table 2.1.1 Self-assessed health status, proportion of the population aged 16+ years, 2006–07

	Males	Females
Excellent, very good or good	83.4	83.0
Fair or poor	16.6	17.0

People aged 50+ years were more likely to report their overall health as fair or poor, while people aged 16 to 49 years were more likely to report their overall health as excellent, very good or good.

Graph 2.1.2 Self-assessed health status, by age group, proportion of the population aged 16+ years

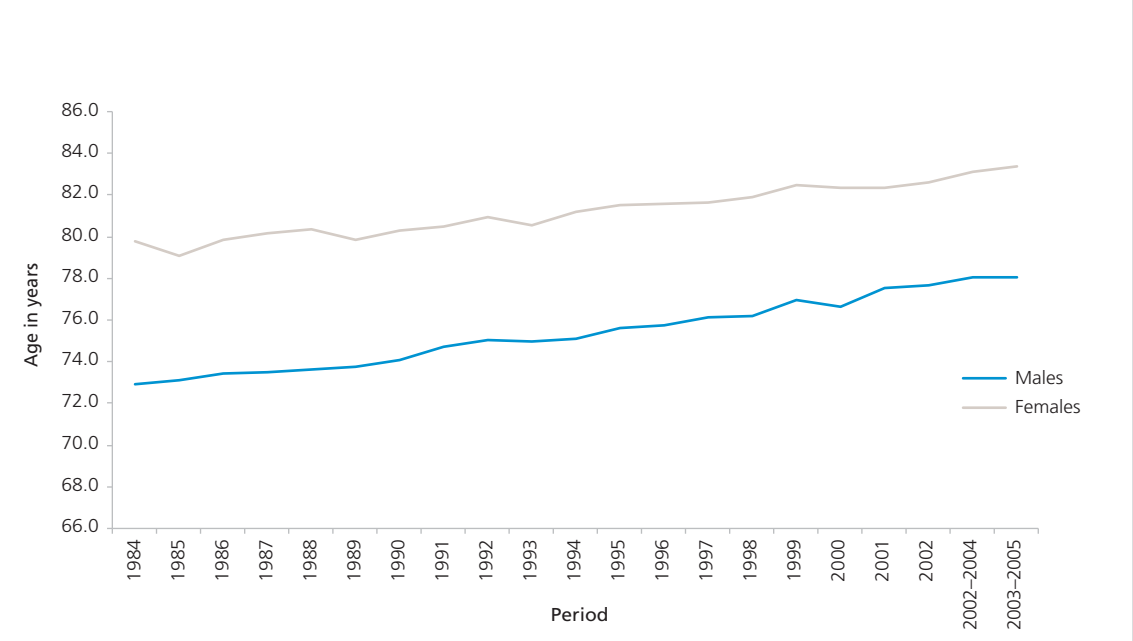


	16–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years	80+ years
Excellent, very good, or good	88.1	91.3	88.4	87.6	80.1	77.1	70.6	64.3
Fair or poor	11.9	8.7	11.6	12.4	19.9	22.9	29.4	35.7

Note: Self-assessed health status was determined by asking respondents if they would rate their health as excellent, very good, good, fair or poor.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

2.2 Life expectancy

Graph 2.2.1 South Australia life expectancy (at birth) by gender



	1984	1989	1994	1995	1996	1997	1998	1999	2000	2001	2002	2002–2004	2003–2005
Males	72.9	73.8	75.1	75.6	75.7	76.1	76.2	77.0	76.6	77.5	77.7	78.0	78.1
Females	79.8	79.8	81.2	81.5	81.6	81.6	81.9	82.5	82.4	82.3	82.6	83.1	83.4

Note: Australian Bureau of Statistics figures are drawn from full period life tables.
Latter two periods are three-year averages.
Source: Australian Bureau of Statistics, provided by consultancy in May 2006.

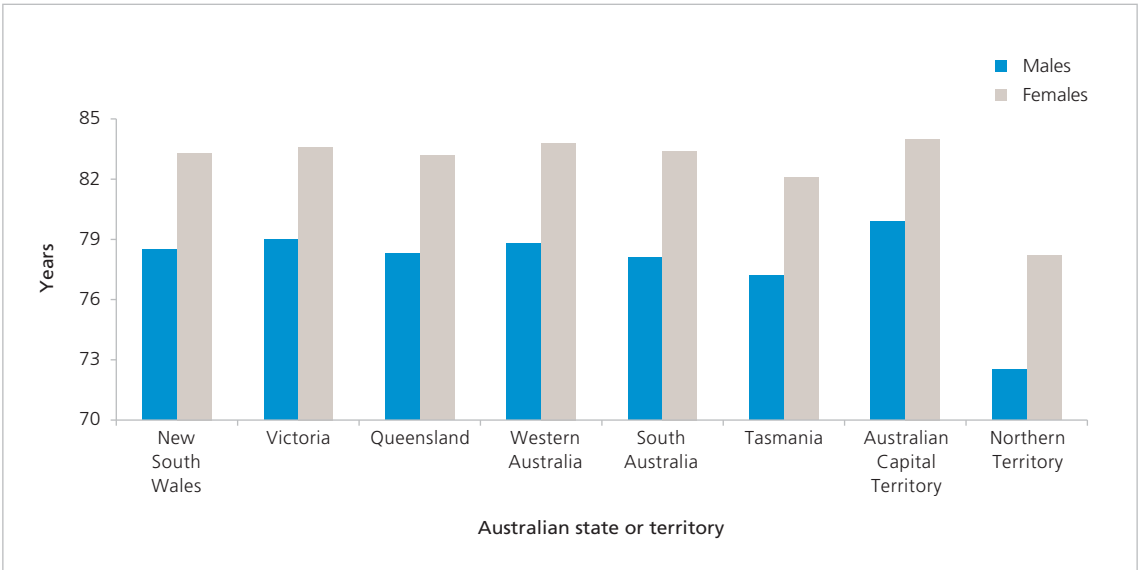
Life expectancy is one form of population health measure estimating the average number of years a person can expect to live, on the assumption that current death rates continue to apply.

Life expectancy at birth in South Australia during the last 20 years shows a near-steady increase, consistent with other developed countries.[5] Life expectancy among males increased by 6.6 per cent to 78.1 years. Female life expectancy started from a higher base and increased at a lower rate of 4.3 per cent to 83.4 years. These different rates of change reduced the sex differences in life expectancy. The gap closed from 6.9 years in 1984 to 5.3 years in the 2003–2005 period.

Average life expectancy at birth in Australia increased by 6.1 years (8.4 per cent) to 78.5 years for males during the last 20 years. Female life expectancy at birth increased to 83.3 years, an improvement of 4.5 years, or 5.7 per cent.[6]

South Australian females had the fourth highest life expectancy at birth in Australia of 83.4 years, over 2003–2005, while South Australian males had the seventh highest of 78.1 years. The average life expectancy at birth for all Australian females over the same period, in comparison, was 83.3, for males was 78.5 years.

Graph 2.2.2 All Australians average life expectancy at birth, 2003–2005



Source: Australian Bureau of Statistics, Deaths 2005, Australia, Cat. no. 3302.0, AusInfo, Canberra.

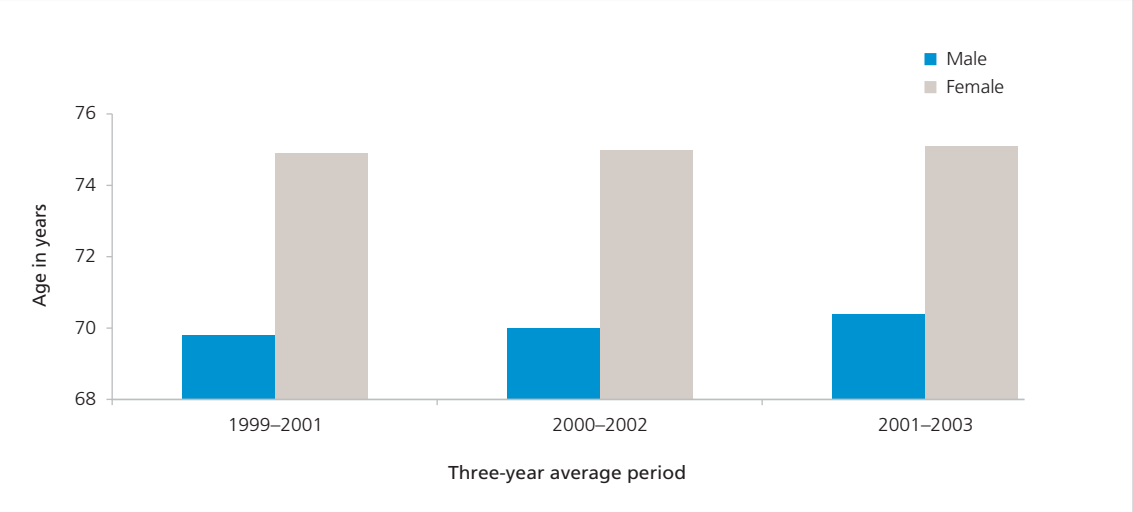
2.3 Healthy life expectancy

Life expectancy (LE) is a familiar summary measure of health accounting for mortality. The question is raised, however — in light of steadily increasing LE in the developed world — of whether or not people are spending this extra time in good health. A range of individual indicators such as health registry records and population health surveys can help to answer this question.

Recent developments in methods to summarise population health include burden of disease studies. These studies use data from many sources to produce summary health measures that account for mortality and morbidity. Health adjusted life expectancy (HALE) uses life expectancy estimates and burden of disease morbidity figures, and makes further adjustments according to the amount of time spent in less than perfect health.

The overall level of population health can be calculated using HALE for a range of ages in a way that is sensitive to probabilities of survival and death, as well as to the prevalence and severity of an exhaustive set of health states amongst the population.[8] HALE has been calculated in a number of burden of disease studies, including the Australian studies.[9-12]

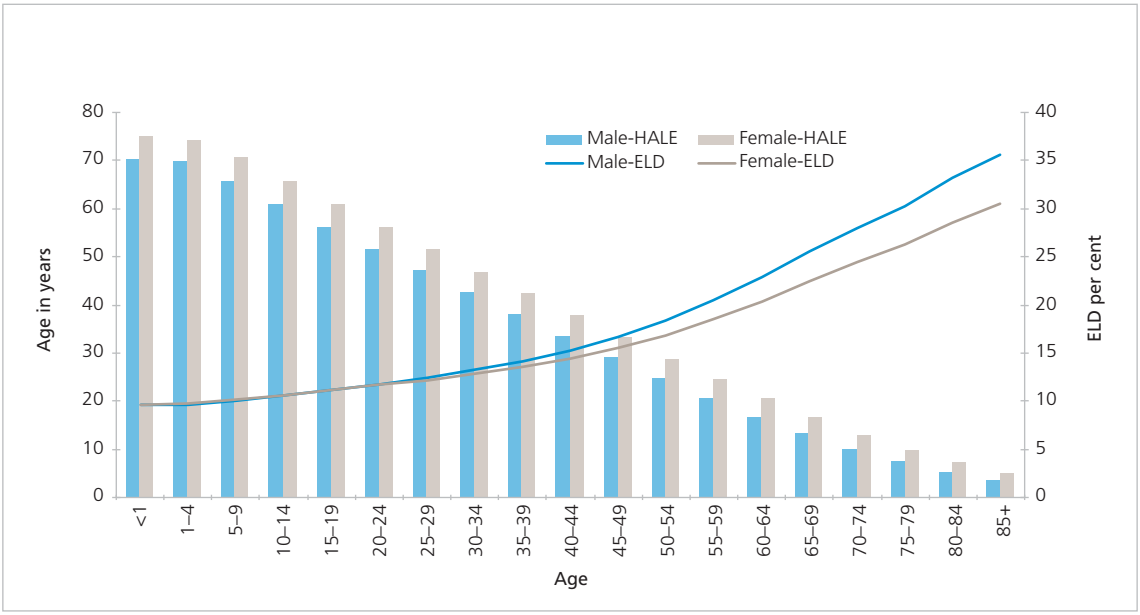
Graph 2.3.1 Health adjusted life expectancy (at birth)



	1999–2001			2000–2002			2001–2003		
Males	LE	HALE	ELD/LE (per cent)	LE	HALE	ELD/LE (per cent)	LE	HALE	ELD/LE (per cent)
Age 0	77.3	69.8	9.8	77.5	70.0	9.7	77.8	70.4	9.6
15	62.9	55.7	11.4	63.1	55.9	11.4	63.3	56.2	11.2
30	48.7	42.1	13.5	48.9	42.3	13.4	49.1	42.6	13.2
45	34.7	28.8	17.2	34.9	28.9	17.0	35.0	29.2	16.7
60	21.4	16.3	23.6	21.6	16.5	23.4	21.8	16.8	22.9
75	10.6	7.2	31.6	10.6	7.3	31.1	10.7	7.5	30.2
Females									
Age 0	83.0	74.9	9.8	83.0	75.0	9.7	83.1	75.1	9.6
15	68.4	60.6	11.4	68.5	60.8	11.3	68.6	61.0	11.2
30	53.7	46.7	13.0	53.8	46.8	12.9	54.0	47.1	12.8
45	39.3	33.0	15.9	39.3	33.2	15.7	39.5	33.4	15.5
60	25.5	20.2	20.9	25.6	20.3	20.6	25.8	20.5	20.4
75	13.4	9.7	27.3	13.4	9.8	26.8	13.5	9.9	26.3

Note: *ELD is the expected years lost to disability as a proportion of total life expectancy.
Estimates are subject to revisions arising from further developments to methods and revision of input data.
Source: SA Health, SA Burden of Disease study, www.health.sa.gov.au/burdenofdisease.

Graph 2.3.2 Health adjusted life expectancy by age, South Australia 2001–2003



Note: Estimates are subject to revisions arising from further developments to methods and revision of input data.
Source: SA Health, SA Burden of Disease study, www.health.sa.gov.au/burdenofdisease.

The developing series of South Australian estimates of HALE begin with three-year averages for 1999–2001.[13] The total HALEs at birth were 69.8 years for males and 74.9 for females. Around 10 per cent of total life expectancy at birth was lost to disease and injury-related disability. HALE increased to 70.4 years for males and 75.1 for females by 2001–2003; this represents an increase in HALE of 0.9 per cent and 0.3 per cent for males and females respectively, and tracks satisfactorily against *South Australia's Strategic Plan* targeted increases of 5 per cent and 3 per cent by 2014.

Average health expectancy is consistently higher among females than males across the lifespan. The proportion of life expectancy lost to severity-weighted illness (ELD), however, is higher among males and becomes increasingly pronounced from around age 50.

The *SA Burden of Disease* study also has produced estimates of HALE for health regions and selected sub-regions, which are available from the study web site. The smaller the area examined, the more variation or statistical error there will be in the estimate, as a general rule.

South Australian level results are in line with earlier Australian estimates in which HALE at birth in 1996 was estimated as 68.7 years for males and 73.6 for females[12]; it is similar also to the Global Burden of Disease study estimates for the established market economies in 1990, in which LE was estimated as 67.4 years for males and 73.9 years for females.

Improving mortality and/or morbidity outcomes in the population can increase HALE; that is, reducing incidence of mortality will improve life expectancy, while reducing incidence of disease and injuries will improve the morbidity component of HALE. The latter reduction also allows for the curing or remission of prevalent disease.

2.4 Burden of disease

Burden of disease methods, like health expectancy measures, account for time lived in health states worse than ideal health and the severity of those states.[14,15] Burden of disease methods differ from health expectancy measures in that they describe health gaps, or the difference between the actual and an optimum or target health of a population for population health outcomes. The key function is a reduction of the impact of both premature mortality and various states of morbidity to a common metric. This metric produces an overview of health in a population at a given point in time.

Disability adjusted life years (DALY) is the measure most frequently used for calculating health gaps. DALY is used to calculate life years lost from a range of diseases and injuries, using a range of assumptions about the severity and duration of mental or physical disability.[16] DALY comprises two components: mortality is represented by the amount of years of life lost (YLL), and morbidity by the amount of years lost to disability or illness (YLD). Refer to the glossary for a detailed description of both YLD and YLL.

Conditions responsible for the most health loss occurring in South Australia are listed in the following tables. These conditions provide a measure of need, while not necessarily indicating areas most amenable to change or prevention, or measuring intervention effect, economic efficiency or equity. This need moreover can be broken down by sex, age, condition, risk factor and for smaller geographic areas.

Table 2.4.1 Leading causes of mortality burden (YLL) by gender and condition, South Australia 2001–2003

Males				Females			
Rank	Condition	YLL	Per cent	Rank	Condition	YLL	Per cent
1	Ischaemic heart disease	11 828	19.5	1	Ischaemic heart disease	8 496	16.7
2	Lung cancer	4 092	6.7	2	Stroke	4 415	8.7
3	Suicide and self-inflicted injuries	3 464	5.7	3	Breast cancer	3 805	7.5
4	Stroke	3 161	5.2	4	Lung cancer	2 553	5.0
5	Colorectal cancer	2 528	4.2	5	Colorectal cancer	2 167	4.3
6	Road traffic accidents	2 490	4.1	6	Pneumonia	1 633	3.2
7	Chronic obstructive pulmonary disease	2 216	3.6	7	Chronic obstructive pulmonary disease	1 542	3.0
8	Prostate cancer	1 985	3.3	8	Dementia and Alzheimer's disease	1 470	2.9
9	Pneumonia	1 384	2.3	9	Ovarian cancer	1 066	2.1
10	Cirrhosis of the liver	1 257	2.1	10	Other cardiovascular disease	981	1.9
11	Type 2 diabetes	1 218	2.0	11	Type 2 diabetes	952	1.9
12	Other chronic respiratory diseases	1 122	1.8	12	Pancreatic cancer	906	1.8
13	Brain cancer	1 018	1.7	13	Road traffic accidents	886	1.7
14	Non-Hodgkin's lymphoma	1 010	1.7	14	Other chronic respiratory diseases	863	1.7
15	Other cardiovascular disease	916	1.5	15	Suicide and self-inflicted injuries	820	1.6
16	Other malignant neoplasms	892	1.5	16	Non-Hodgkin's lymphoma	796	1.6
17	Leukaemia	892	1.5	17	Leukaemia	748	1.5
18	Pancreatic cancer	884	1.5	18	Other endocrine and metabolic	744	1.5
19	Stomach cancer	864	1.4	19	Other malignant neoplasms	651	1.3
20	Oesophageal cancer	744	1.2	20	Brain cancer	647	1.3
	All other conditions	16 801	27.6		All other conditions	14 739	29.0
Total		60 765	100.0	Total		50 882	100.0

Note: Years of life lost (YLL) are uniform age weighted and 3 per cent per annum discounted.
Conditions and categories allocated as per *SA Burden of Disease* study, www.health.sa.gov.au/burdenofdisease.
Source: Australian Bureau of Statistics, Deaths data from Confidentialised Unit Record Files.

South Australians recorded 111 647 YLL or an average of 73.5 years of life lost per 1 000 persons per year from premature death in the period 2001–2003; of these, 60 765 YLL (54.3 per cent of total) were recorded for males and 50 882 YLL (45.6 per cent) for females. It is estimated, using age and gender standardised rates for South Australia, that premature death was responsible for 65.9 YLL per 1 000, down from 68.1 YLL per 1 000 in the period 1999–2001. The Australian average YLL for 2003 was around 64.3 per 1 000.

South Australians recorded 100 473 YLD or an average of 66.1 years of life lost per 1 000 persons per year from disease and injury-related illness in the period 2001–2003; of these, 49 037 YLD (51.2 per cent of total) were recorded for males and 51 436 YLD (48.8 per cent) for females. It is estimated — on age and gender standardised rates for South Australia — that morbidity was responsible for 63.1 YLD per 1 000, down from 64.0 YLD per 1 000 in the period 1999–2001.

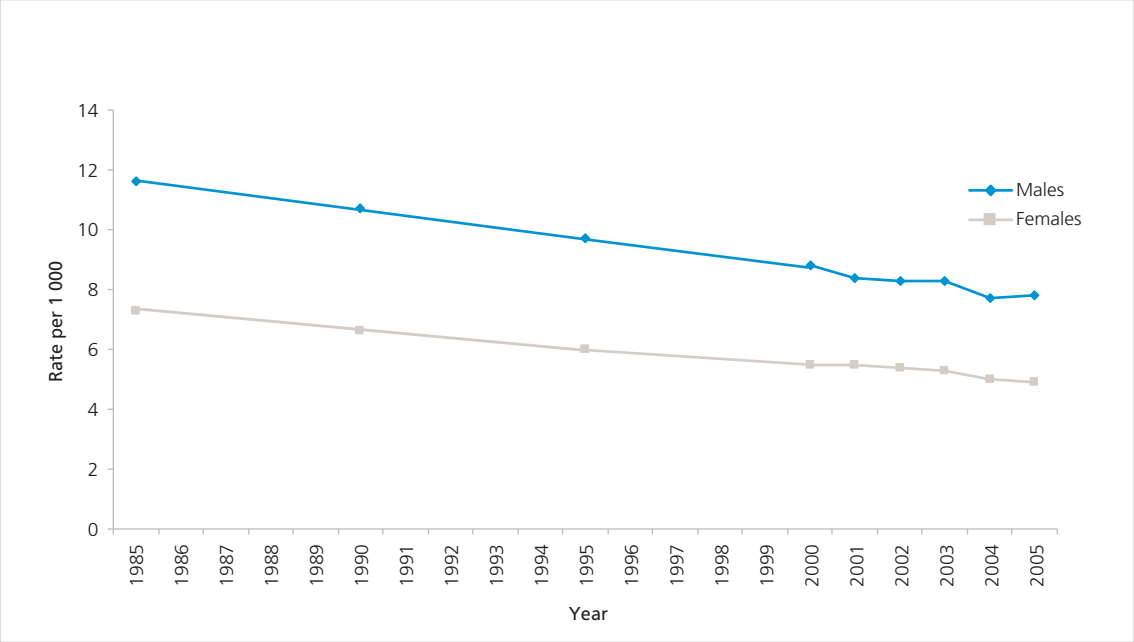
Table 2.4.2 Leading causes of morbidity burden (YLD) by gender and condition, South Australia 2001–2003

Males				Females			
Rank	Condition	YLD	Per cent	Rank	Condition	YLD	Per cent
1	Adult-onset hearing loss	3 291	6.7	1	Depression	4 645	9.0
2	Depression	2 929	6.0	2	Dementia and Alzheimer's disease	4 292	8.3
3	Dementia and Alzheimer's disease	2 737	5.6	3	Osteoarthritis	3 167	6.2
4	Chronic obstructive pulmonary disease	2 248	4.6	4	Asthma	2 414	4.7
5	Ischaemic heart disease	2 233	4.6	5	Age-related vision disorders	1 914	3.7
6	Alcohol dependence and harmful use	2 226	4.5	6	Generalised anxiety disorder	1 706	3.3
7	Stroke	2 166	4.4	7	Type 2 diabetes	1 683	3.3
8	Osteoarthritis	2 100	4.3	8	Stroke	1 596	3.1
9	Type 2 diabetes	1 760	3.6	9	Breast cancer	1 554	3.0
10	Asthma	1 683	3.4	10	Parkinson's disease	1 469	2.9
11	Other nervous system disorders	1 178	2.4	11	Adult-onset hearing loss	1 432	2.8
12	Parkinson's disease	979	2.0	12	Chronic obstructive pulmonary disease	1 392	2.7
13	Prostate cancer	963	2.0	13	Ischaemic heart disease	1 352	2.6
14	Generalised anxiety disorder	920	1.9	14	Other genitourinary diseases	1 003	1.9
15	Borderline personality disorder	820	1.7	15	Alcohol dependence and harmful use	993	1.9
16	Benign prostatic hypertrophy	791	1.6	16	Other nervous system disorders	963	1.9
17	Peripheral arterial disease	733	1.5	17	Social phobia	789	1.5
18	Other genitourinary diseases	726	1.5	18	Schizophrenia	663	1.3
19	Attention-deficit hyperactivity disorder	680	1.4	19	Bipolar affective disorder	656	1.3
20	Schizophrenia	674	1.4	20	Rheumatoid arthritis	594	1.2
	All other conditions	17 199	35.1		All other conditions	17 160	33.4
Total		49 037	100.0	Total		51 436	100.0

Note: Years Lost to Disability/Illness (YLD) are uniform age weighted and 3 per cent per annum discounted.
Conditions and categories allocated as per *SA Burden of Disease* study, www.health.sa.gov.au/burdenofdisease.
Source: SA Health, SA Burden of Disease study.

2.5 Mortality

Graph 2.5.1 Deaths from all causes by gender, South Australia, 1985–2005



	1985	1990	1995	2000	2001	2002	2003	2004	2005
Males	11.6	10.7	9.7	8.8	8.4	8.3	8.3	7.7	7.8
Females	7.3	6.6	6.0	5.5	5.5	5.4	5.3	5.0	4.9
Persons	9.1	8.4	7.6	6.9	6.8	6.7	6.6	6.2	6.2

Note: Deaths per 1 000, age adjusted to Australia 2001.
Source: Australian Bureau of Statistics, Deaths Australia 2005.

South Australia's age adjusted death rate decreased by 32 per cent to 6.2 per 1 000 persons in the 20 years to 2005; by comparison, the Australian rate fell by 39 per cent to 6.0 per 1 000.[6]

The relative reductions in rate by sex were similar, with 33 per cent for both males and females. The age adjusted death rate for males in 2005 was 59 per cent higher than the female death rate; this difference is similar to the rate ratio 20 years earlier in 1985.

The absolute number of South Australian deaths each year increased by 6.7 per cent to 11 975 between 1985 and 2005, with population increasing by 4.9 per cent. The largest increases in death numbers were in people aged 85+; this age group accounted for 34 per cent of all deaths by 2005, a 38 per cent increase from 1985.

Cardiovascular disease and malignant neoplasms were responsible for almost two-thirds of life lost to mortality. Cardiovascular disease (40 per cent), malignant neoplasms (21 per cent) and injury (18 per cent) together accounted for four of every five years of life lost among people aged between 25 and 64 years. Cardiovascular disease (particularly ischaemic heart disease and stroke), cancer (particularly lung cancer) and respiratory conditions (chronic obstructive pulmonary disease and pneumonia) contributed 44 per cent, 23 per cent and 12 per cent respectively of total burden of disease in elderly people, aged 75+ years.

Mortality among young people makes up a small amount of overall burden; notwithstanding this, a high proportion of loss (68 per cent) among 15-to-24-years-olds is due to injury, particularly road traffic accidents and suicide/self-inflicted injuries.

Table 2.5.1 Mortality burden (YLL) by category, South Australia, three-year averages 2001–2003

Rank	Category	YLL	Per cent	Deaths
1	Malignant neoplasms	35 929	32.2	3 306
2	Cardiovascular disease	34 280	30.7	4 618
3	Unintentional injuries	6 181	5.5	367
4	Chronic respiratory disease	6 180	5.5	748
5	Intentional injuries	4 779	4.3	219
6	Nervous system and sense organ disorders	4 387	3.9	554
7	Diseases of the digestive system	3 775	3.4	396
8	Acute respiratory infections	3 124	2.8	526
9	Type 1 and Type 2 diabetes	2 597	2.3	295
10	Infectious and parasitic diseases	1 917	1.7	189
11	Genitourinary diseases	1 819	1.6	291
12	Endocrine and metabolic disorders	1 428	1.3	145
13	Mental disorders	1 278	1.1	77
14	Congenital anomalies	1 149	1.0	49
15	Neonatal causes	1 133	1.0	37
16	Musculoskeletal diseases	631	0.6	74
17	Other neoplasms	579	0.5	72
18	Skin diseases	192	0.2	30
19	Ill-defined conditions	159	0.1	9
20	Nutritional deficiencies	108	0.1	18
21	Maternal conditions	17	0.0	1
22	Oral health	6	0.0	1
	Total	**111 647**	**100.0**	**12 021**

Note: Years of life lost (YLL) are uniform age weighted and 3 per cent per annum discounted.
Conditions and categories allocated as per *SA Burden of Disease* study, www.health.sa.gov.au/burdenofdisease.
'Ill-defined conditions' is a term used within the ICD categories (The International Statistical Classification of Diseases and Related Health Problems).
Source: Australian Bureau of Statistics, Deaths data from Confidentialised Unit Record Files.

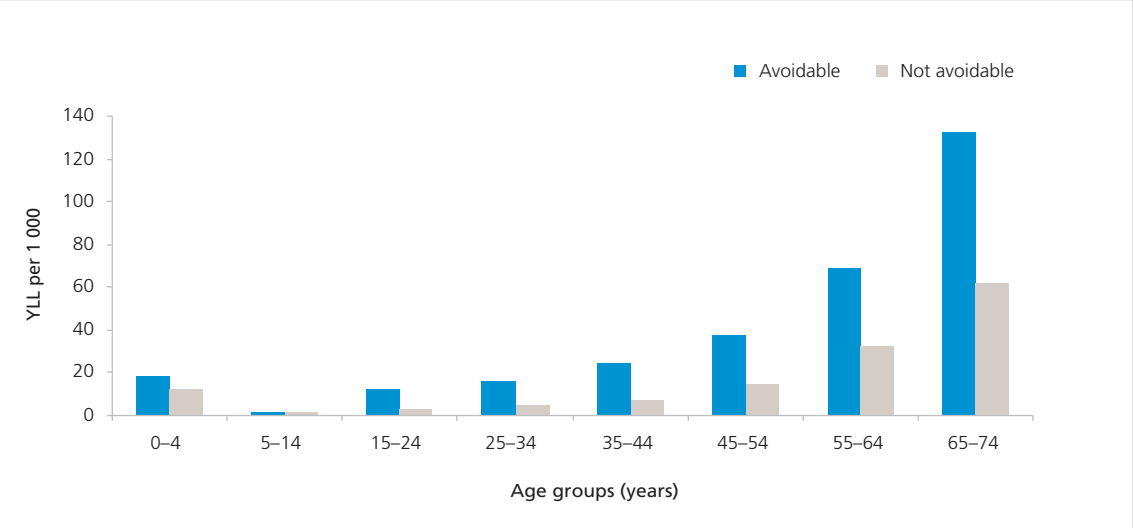
Table 2.5.2 Mortality burden (YLL) by age, South Australia, three-year averages 2001–2003

Category	0–4 years	5–14 years	15–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65–74 years	75+ years
Acute respiratory infections	30	0	9	62	63	142	206	306	2 306
Cardiovascular disease	65	10	125	472	1 173	2 315	4 090	7 130	18 899
Chronic respiratory disease	0	39	48	62	170	333	779	1 756	2 993
Congenital anomalies	726	20	87	81	74	45	35	35	47
Type 1 and Type 2 diabetes	0	0	10	38	143	237	353	678	1 139
Diseases of the digestive system	0	0	39	45	331	593	769	675	1 325
Endocrine and metabolic disorders	123	19	39	36	57	198	181	276	499
Genitourinary diseases	0	0	0	24	34	37	103	236	1 385
Ill-defined conditions	144	0	0	0	0	0	0	0	15
Infectious and parasitic diseases	122	0	75	86	181	255	253	243	701
Intentional injuries	66	10	829	1 162	1 355	809	284	191	72
Malignant neoplasms	79	157	384	660	2 189	4 937	7 886	9 518	10 118
Maternal conditions	0	0	0	9	8	0	0	0	0
Mental disorders	0	0	101	411	354	121	76	72	142
Musculoskeletal diseases	0	10	0	18	57	61	34	153	298
Neonatal causes	1 123	10	0	0	0	0	0	0	0
Nervous system and sense organ disorders	118	89	106	222	211	336	429	631	2 243
Nutritional deficiencies	0	0	10	0	0	7	0	4	87
Oral health	0	0	0	0	0	0	0	3	3
Other neoplasms	21	10	0	0	8	68	71	88	313
Skin diseases	0	0	0	0	8	8	10	43	124
Unintentional injuries	278	294	1 342	1 132	853	794	483	397	609
Total	**2 895**	**667**	**3 204**	**4 520**	**7 269**	**11 296**	**16 043**	**22 435**	**43 318**

Note: Years of life lost (YLL) are uniform age weighted and 3 per cent per annum, discounted.
Conditions and categories allocated as per *SA Burden of Disease* study, www.health.sa.gov.au/burdenofdisease.
Source: Australian Bureau of Statistics, Deaths data from Confidentialised Unit Record Files.

2.6 Avoidable mortality

Graph 2.6.1 Potentially avoidable mortality (0-74 years), South Australia, three-year averages 2001–2003



	Males						Females					
	Avoidable			Not avoidable			Avoidable			Not avoidable		
	YLL	Per cent of total	Rate/ 1 000	YLL	Per cent of total	Rate/ 1 000	YLL	Per cent of total	Rate/ 1 000	YLL	Per cent of total	Rate/ 1 000
0–4	726	2.5	15.7	646	5.6	14.0	956	5.3	21.5	488	5.7	11.0
5–14	196	0.7	1.9	205	1.8	2.0	128	0.7	1.3	139	1.6	1.4
15–24	1 864	6.3	18.1	417	3.6	4.0	622	3.4	6.3	227	2.7	2.3
25–34	2 496	8.5	23.9	622	5.4	6.0	911	5.0	9.0	345	4.0	3.4
35–44	3 448	11.7	30.2	877	7.6	7.7	2 047	11.3	17.9	727	8.5	6.4
45–54	4 820	16.4	45.7	1 766	15.3	16.7	3 174	17.6	29.4	1 395	16.3	12.9
55–64	6 706	22.8	86.0	2 986	26.0	38.3	4 140	22.9	52.4	2 102	24.5	26.6
65–74	9 169	31.2	166.0	3 988	34.7	72.2	6 088	33.7	101.5	3 139	36.7	52.4
Total	29 425	100.0	41.8	11 505	100.0	16.3	18 065	100.0	25.9	8 561	100.0	12.3

Note: Years of Life Lost (YLL) are uniform age weighted and 3 per cent per annum discounted.
Categorisation of potentially avoidable deaths made as per Page, et al (2006)[1].
General conditions allocated as per *SA Burden of Disease* study, www.health.sa.gov.au/burdenofdisease.
Source: Australian Bureau of Statistics, Deaths data from Confidentialised Unit Record Files.

Deaths, and Years of life lost, can be categorised as potentially avoidable on the basis of existing health and social structures, and current understanding of lifestyle risks to health.[1] A simple method for gauging the scope of potential gains in population health is to identify conditions as 'potentially avoidable' and calculate the burden associated with these incidents.

Seventy per cent of YLL occurring in people aged less than 75 (43 per cent of YLL in all ages) was categorised as potentially avoidable in South Australia in the period 2001–2003. This rate has fallen from 71 per cent in the period 1999–2001 when South Australian reporting begins.[13] South Australian rates are comparable to the 72 per cent figure for Australia in the period 1997–2001.[1]

Rates of loss of life were higher for males than females. The YLL rate for males was 41.8 per 1 000 which was 61 per cent higher than the female rate of 25.9 per 1 000.

Almost one-third of avoidable YLL occurred in the 65–74 year age group. The 45–64 year age group bore 40 per cent of avoidable mortality with the remaining 38 per cent distributed across the youngest age groups.

Table 2.6.1 Leading causes of potentially avoidable mortality (YLL) by condition and gender, South Australia, three-year averages 2001–2003

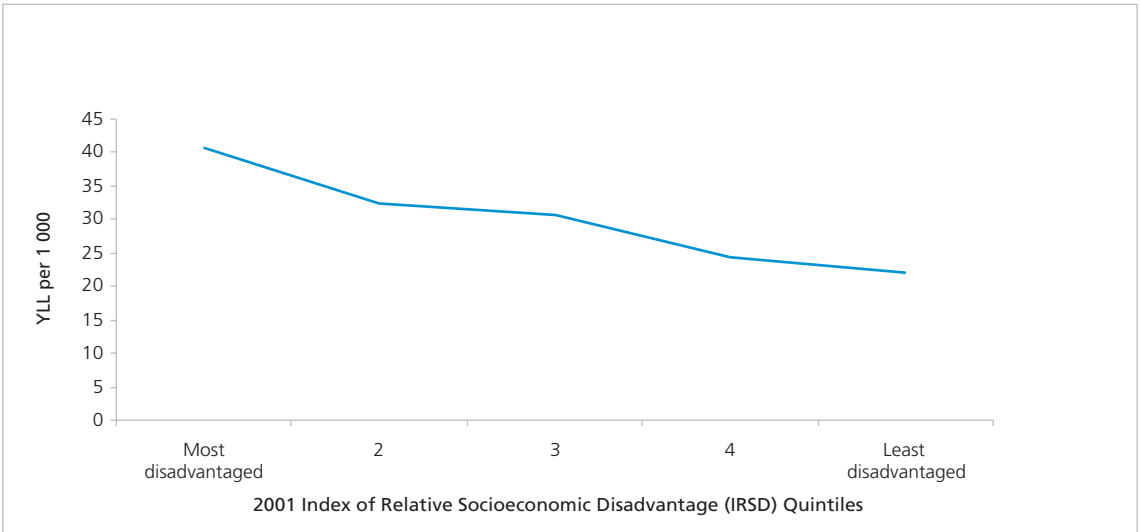
Males				Females			
Rank	Condition	YLL	Per cent of total	Rank	Condition	YLL	Per cent of total
1	Ischaemic heart disease	6 498	22.1	1	Breast cancer	2 935	16.2
2	Suicide and self-inflicted injuries	3 382	11.5	2	Ischaemic heart disease	2 349	13.0
3	Lung cancer	2 723	9.3	3	Lung cancer	1 625	9.0
4	Road traffic accidents	2 326	7.9	4	Colorectal cancer	1 259	7.0
5	Colorectal cancer	1 811	6.2	5	Stroke	1 226	6.8
6	Stroke	1 399	4.8	6	Road traffic accidents	819	4.5
7	Chronic obstructive pulmonary disease	1 102	3.7	7	Suicide and self-inflicted injuries	793	4.4
8	Cirrhosis of the liver	1 026	3.5	8	Chronic obstructive pulmonary disease	771	4.3
9	Type 2 diabetes	720	2.4	9	Type 2 diabetes	418	2.3
10	Stomach cancer	600	2.0	10	Cirrhosis of the liver	319	1.8
	All others	9 817	26.6		All others	5 753	30.7
	Total	**31 406**	**100.0**		**Total**	**18 268**	**100.0**

Note: Years of life lost (YLL) are uniform age weighted and 3 per cent per annum discounted.
Categorisation of potentially avoidable deaths made as per Page, et al (2006)[1].
General conditions allocated as per *SA Burden of Disease* study, www.health.sa.gov.au/burdenofdisease.
Source: Australian Bureau of Statistics, Deaths data from Confidentialised Unit Record Files.

Nine of the 10 leading causes of avoidable mortality were common to both sexes in the period 2001–2003, although the rankings differ; the exceptions were stomach cancer in males and breast cancer, the leading avoidable cause of mortality, in females.

2.7 Health inequalities

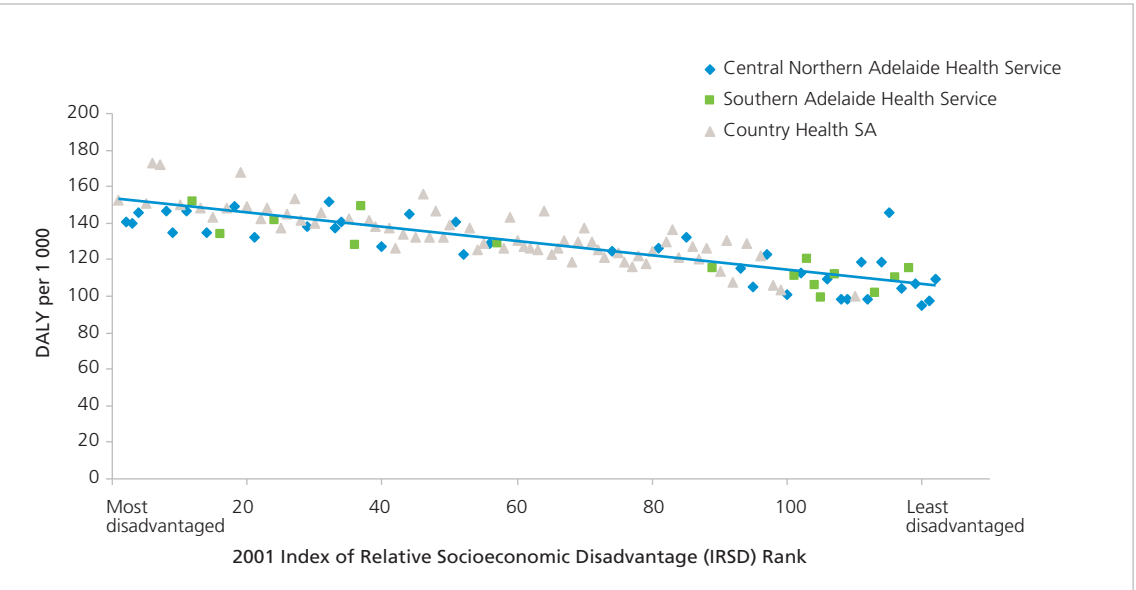
Graph 2.7.1 Potentially avoidable mortality (0-74 years) by Area Disadvantage quintile, South Australia, three-year averages 2001–2003



Note: Years of life lost (YLL) are uniform age-weighted and 3 per cent per annum discounted.
Categorisation of potentially avoidable deaths made as per Page, et al (2006)[1].
General conditions allocated as per *SA Burden of Disease* study, www.health.sa.gov.au/burdenofdisease.
Rates are age- and sex-adjusted to the 2001 Australian population.
Source: Australian Bureau of Statistics, Deaths data from Confidentialised Unit Record Files.

Potentially avoidable deaths offer one way to look at health inequalities within South Australia. YLL rates are higher in areas where relative socioeconomic disadvantage is higher.[17] Areas of least disadvantage are concentrated in the inner suburbs of Adelaide and the eastern metropolitan area, with the most disadvantaged areas scattered across the northwest and southern suburbs, and the more remote areas of the state. There is a clear difference in YLL rates across levels of area disadvantage. The rate of potentially avoidable mortality is 86 per cent higher in the most disadvantaged areas compared to the least disadvantaged.

Graph 2.7.2 Health loss by Statistical Local Area Disadvantage and Health Region, South Australia, three-year averages 2001–2003



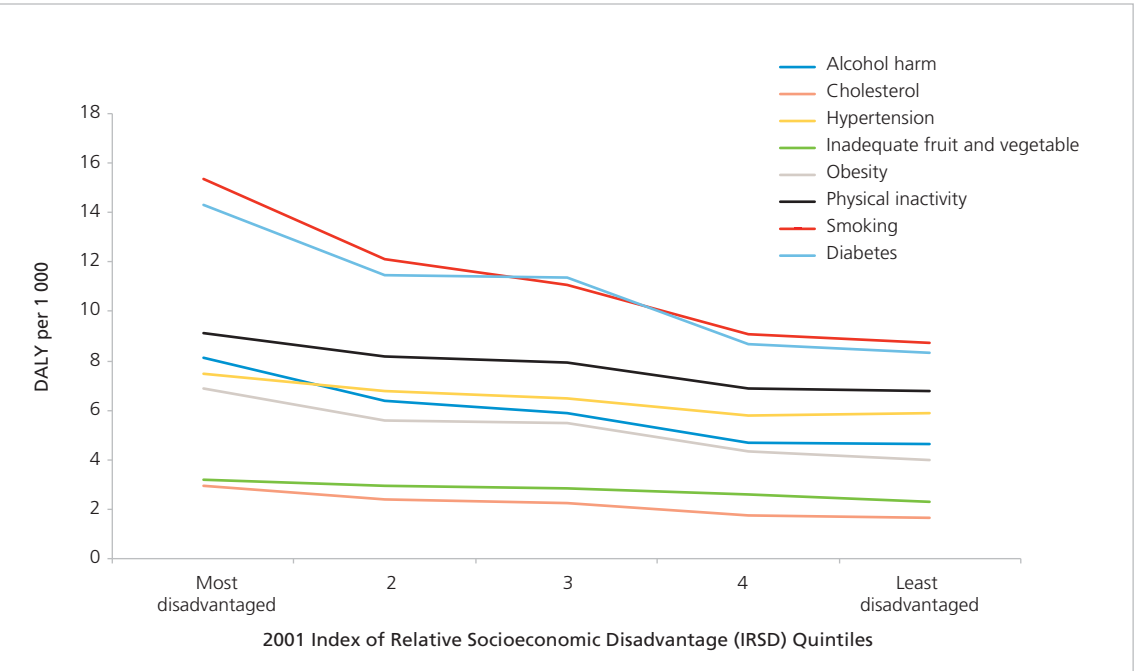
Note: DALYs are uniform age-weighted and 3 per cent per annum discounted.
Rates are age- and sex-adjusted to the 2001 Australian population.
Rates are further adjusted for high-care Residential Aged Care Facility (RACF) numbers.
Source: SA Health, SA Burden of Disease study, www.health.sa.gov.au/burdenofdisease.

Disability adjusted life years provide a fuller description of population health outcomes accounting for mortality and morbidity. DALYs also are used easily in statistical methods to adjust for confounding variables; this is useful because, in South Australia, and particularly in metropolitan Adelaide, residential aged care facilities tend to be concentrated in inner, relatively advantaged suburbs.[13]

The DALY rate for the most disadvantaged area in South Australia was 172.6 per 1 000 persons, around 80 per cent greater than the DALY rate in the least disadvantaged area (94.9 DALYs per 1 000 persons).

An examination of the disease burden due to various risk factors offers another perspective on diseases and injuries that impact upon population health. The prevalence of risk factors is discussed in more detail in Chapter 4. Health outcomes attributed to exposure to discrete risk factors are considered here. DALY outcomes again can be expressed in terms of relative socioeconomic disadvantage.

Graph 2.7.3 Health loss by selected risk factors by Area Disadvantage, South Australia, three-year averages 2001–2003



Area disadvantage				
Most disadvantaged	2	3	4	Least disadvantaged
40.8	32.3	30.7	24.3	22.0

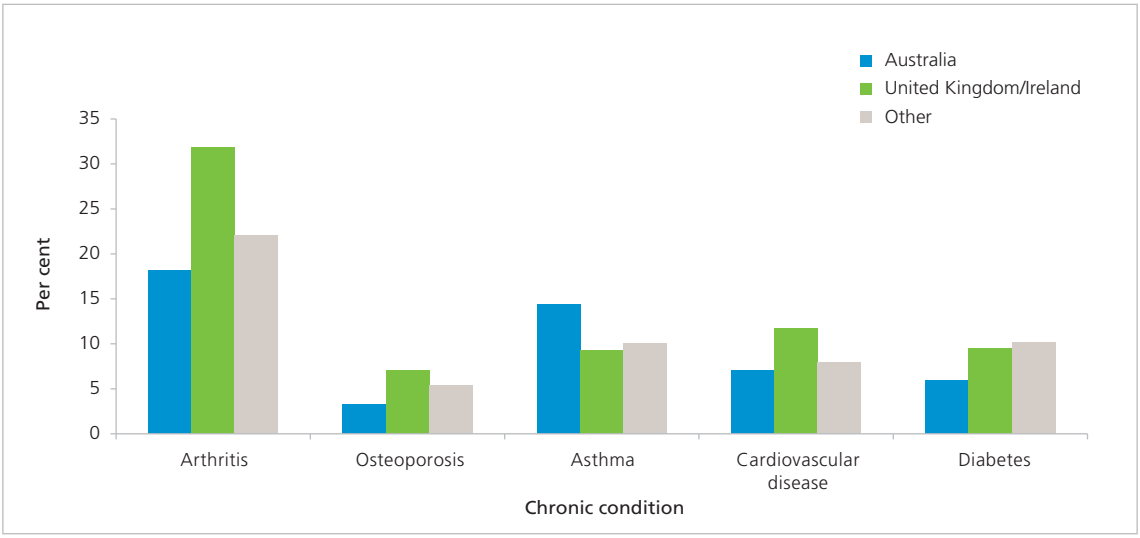
Note: Years of life lost (YLL) are uniform age-weighted and 3 per cent per annum discounted.
Categorisation of potentially avoidable deaths made as per Page, et al. (2006)[1].
General conditions allocated as per *SA Burden of Disease* study, www.health.sa.gov.au/burdenofdisease.
Rates are age- and sex-adjusted to the 2001 Australian population.
Additional data on risk factors of illicit drug use, occupation and unsafe sex are available on the web site above.
Source: Australian Bureau of Statistics, Deaths data from Confidentialised Unit Record Files.

As area disadvantage increases so too does health loss attributed to risk factors. The largest absolute differences between high and low disadvantage areas occurred in smoking (6.6 DALYs per 1 000 persons) followed by diabetes (6.0) and alcohol harm (3.5).

The results of the 2006–07 SAMSS indicate that respondents in the most disadvantaged quintile were more likely to report their health as fair or poor (22.6 per cent) compared to those in the least disadvantaged quintile (13.1 per cent).

SAMSS also shows that respondents born in Australia were more likely to report their health as excellent, very good or good (84.5 per cent) than were those born in the United Kingdom or Ireland (79.7 per cent) or in other countries (77.2 per cent). There was a similar trend with respect to Aboriginal status, with respondents of non-Aboriginal or Torres Strait Islander origin more likely to report their health as excellent, very good or good (84.0 per cent) than were those of Aboriginal or Torres Strait Islander origin (77.2 per cent).

Graph 2.7.4 Prevalence of chronic conditions, 16+ years, by country of birth, 2006–07



Note: These conditions are defined as respondents having been informed by a doctor that they had the condition.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

The graph above indicates that, with regard to some of the major chronic conditions, respondents born in the United Kingdom or Ireland were significantly more likely to have arthritis than were those born in Australia and other countries. There was a similar trend for osteoporosis or cardiovascular disease.

The SAMSS results also show that respondents born in Australia were more likely to have asthma than were those born outside the country. Respondents born outside of Australia, however, were more likely to have been told by a doctor that they had diabetes.

2.8 Services and initiatives

SA Health seeks to improve the health status of South Australians and is committed to a primary health care approach that encompasses the social, economic, cultural, behavioural and biological determinants of health, from the well population to individuals with chronic disease, and from before birth to old age.

The main focus of services and initiatives offered by SA Health, in line with this approach, is aimed at promoting good health and wellbeing, and early intervention and management of health problems that individuals are experiencing. SA Health works collaboratively with a range of partners, both within and outside government, to ensure as much of the community as possible benefits from implementing effective programs of support.

Health and lifestyle programs are being developed and implemented to ensure healthy population outcomes and to prevent major health risk factors, supported by training for specific service providers, particularly in the areas of healthy weight and smoking. Advice and support are provided to populations and individuals to increase the effectiveness of the programs. Legislative and policy approaches are undertaken to reduce exposure to, and increase understanding of, risk factors.

Advice and support are given to people by providing access to coordinated and integrated health services, and through programs aimed at developing the ability of individuals to self-manage conditions. It is expected as a result that those with health-impairing conditions can enjoy the most participative community life, for as long as possible. GP Plus Health Care Centres increasingly will become the focal point in the community, where a range of primary health care service providers work together to improve coordinated delivery of care. SA Health also is working with private, local government, and non-government providers, including Aboriginal Community Controlled Services, to develop and implement more effective and appropriate services across the continuum of care in South Australia.

Increasing awareness and understanding of health conditions in the community, particularly in relation to mental health and chronic illness, is an important community outcome to enhance the capacity of individuals to live as fully in the community as possible. SA Health has a range of initiatives in place, and under development, to raise community awareness in providing support to those in need.

Aboriginal people experience more life risk factors, poorer health, and less acceptable outcomes in a range of life areas when compared to other South Australians. Aboriginal people as a result are among the most disadvantaged groups in the community. The SA Health approach is through a comprehensive, integrated primary health care focus to meet the complex needs of Aboriginal people. Strategies emphasise primary health care through healthy lifestyle programs, child and maternal health, and chronic disease management.

2.9 Notes

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3 Health priority areas

In this chapter

Summary

- Injury, domestic violence, cardiovascular conditions, cancer, diabetes, asthma, renal disease/failure and arthritis and musculoskeletal conditions together account for over 60 per cent of South Australia's 'burden of disease', which measures both Years of life lost (YLL) due to premature death together with years of healthy life lost due to living with disease (YLD).
- The greatest opportunities for health improvements with these conditions at the population level continue to be with prevention strategies aimed at reducing the prevalence of modifiable risk factors, screening, and managing disease with advances in surgical techniques, pharmaceutical therapies and rehabilitation.
- Considerable evidence exists regarding the utility of interventions ameliorating these conditions, with implementation directed by *South Australia's Health Care Plan 2007–2016*. Surveillance systems provide essential information for epidemiological analyses to assist in identifying suitable interventions and monitoring their impact.
- Injury is the leading cause of mortality in South Australians aged one to 44 years. Males are at higher risk than females, with lifestyle and behaviour playing a large role in determining risk. Risks are greatly modified by the environment, and there is a strong inverse association with socioeconomic status. Falls remain the most prominent injury threat amongst older people.
- Domestic violence in 2002–03 was estimated to cost the Australian economy $8.1 billion, including direct and indirect costs.
- Mortality due to cardiovascular conditions including ischaemic heart disease, stroke, heart failure and peripheral vascular disease has declined over the past decades, but together these conditions remained the leading cause of death in South Australia in each of the five years from 1999–2000 to 2003–04. The conditions accounted for 26 717 hospital admissions over 2006–07; of these, 1 714 angioplasties (with or without stent insertion) and 588 coronary artery bypass graft procedures were performed.
- About one in three people will have cancer during his or her life. There were 8 456 new cases of cancer diagnosed, and 3 302 deaths, in South Australia in 2005. Lung cancer remained the leading cause of cancer death in South Australian males, even though a steady decline was observed. Lung cancer, breast cancer and colorectal cancer all accounted for a similar proportion of cancer deaths in females in South Australia. The *Statewide Cancer Control Plan 2006–2009* provides a comprehensive approach to screening and the appropriate management of different types of cancer, many of which have differing risk factors, natural histories and treatments.

- The prevalence of diabetes has been increasing in South Australia over recent decades. Survey data from the South Australian Monitoring and Surveillance System (SAMSS) show 6.8 per cent of South Australians aged 16+ years in the 2006–07 year reported having diabetes diagnosed by a doctor. Hospitalisations with Type 2 diabetes listed as a principal or secondary diagnosis progressively increased over the previous five years by an average of 19 per cent annually to 16 107 in 2006–07. This escalation — together with the known ability to modify risk factors contributing to Type 2 diabetes — has prompted targeted interventions within chronic disease prevention strategies.
- SAMSS survey data indicate that current asthma was reported by 13.4 per cent of South Australians aged 16+ years, and in 14.8 per cent of those aged 2–15 years. There was a downward trend around this disease over the past five years, although the numbers were not statistically significantly different.
- The SAMSS-reported prevalence of respiratory conditions of 4.9 per cent for South Australians aged 16 years or more in 2006–07 had remained relatively stable over the previous five years. There were 22 825 hospitalisations over 2006–07 due to chronic respiratory conditions; 71 per cent of the patients hospitalised were 65 years and older.
- The number and rate of people in South Australia requiring kidney dialysis and/or transplantation has increased progressively over recent years, in common with the rest of Australia. This increase has been due predominantly to an increase in the number of new patients reaching end-stage kidney disease and beginning renal replacement therapy. The age of patients also is increasing. These circumstances have lead to a progressive increase over the previous five years of hospital attendances for dialysis, from 41 148 in 2002–03 to 55 152 in 2006–07. This increase is despite South Australia having the highest rate of therapy with a functioning kidney transplant.
- Twenty per cent of South Australians reported to SAMSS in 2006–07 that they had arthritis. Arthritis prevalence increases with increasing age, with 44 per cent of people reporting arthritis by age 60.
- *South Australia's Strategic Plan* Target T2.6 for chronic diseases aims to increase by five percentage points the proportion of people living with a chronic disease whose self-assessed health status is good or better. Thirty-one percent of people over 16 in South Australia with at least one self-reported chronic disease rated their health status as good or better. South Australia will continue to build on current strategies with the release of a comprehensive Chronic Disease Management Plan.

Introduction

This chapter provides details about South Australian mortality and morbidity attributable to the Health Priority Areas of injury, including domestic violence; cardiovascular health, including stroke; cancer; diabetes; asthma; renal disease/failure; and arthritis and musculoskeletal conditions. These diseases and injuries together account for over 60 per cent of South Australia's 'burden of disease'. These diseases — together with mental health which is discussed in Chapter 5 — have been specifically identified, because their health impact can be improved considerably through targeted preventive interventions. They are all, apart from injuries, often considered collectively as 'chronic conditions' in view of their considerable overlap with regard to risk factors and prevention strategies.

Collaborative preventive interventions use three principal modalities. 'Primary prevention' targets risk factors to prevent these conditions occurring in the first place (see Chapter 4). 'Secondary prevention' uses screening to detect and treat early disease or precursor conditions, such as hypertension or high cholesterol, in well people. 'Tertiary prevention' aims to reverse the condition or halt the progression toward complications once the condition is established.

Monitoring of these conditions and the effectiveness of intervention programs occurs through a series of indicators collected by surveillance systems, including at both the population level and the program level, where interim indicators often are used. Population-level burden-of-disease information, survey results, hospitalisations and mortality are presented within each sub-chapter. Surveillance systems often are condition- and/or system-specific, with differing sources and validation mechanisms; as a consequence, differing time periods appear in this report. Health interventions usually are aimed at sustained or long-term improvement, so that it may take some years to have an effect on population level data and interim measures often are used to measure specific program outcomes. Programs and interventions are highlighted at the end of the chapter.

Observations based on key prevalence measures for chronic disease priority areas taken from departmental surveillance systems show:

- prevalence of asthma, chronic respiratory disease and, to a lesser extent, arthritis has generally reduced over time
- osteoporosis and Type 2 diabetes prevalence generally has increased across the five-year period
- cardiovascular disease (including stroke) prevalence rates have remained relatively stable.

Table 3.1 Summary of prevalence measures for chronic disease priority areas

			Prevalence[a] (per cent)				
Priority	DALY (per cent)	YLL (per cent)	2002–03	2003–04	2004–05	2005–06	2006–07
Cardiovascular (including stroke)	11.3[d]	18.2[d]	7.8[e]	8.3[e]	7.7[e]	7.5[e]	7.6[e]
Cancer	–	21.5	–	–	–	–	–
Type 2 diabetes	2.6	–	5.9[e]	6.4[e]	6.8[e]	6.2[e]	6.8[e]
Asthma	2.1	4.1	18.0[b]	18.4[b]	17.7[b]	16.5[b]	14.8[b]
Chronic respiratory	4.8	–	–	–	5.7[e]	5.4[e]	4.9[e]
Renal disease	–	–	–	–	–	–	11.5[c]
Arthritis	–	–	21.3[e]	21.3[e]	21.0[e]	20.8[e]	20.0[e]
Osteoporosis	–	–	3.2[e]	4.3[e]	4.4[e]	4.3[e]	3.9[e]

Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS); *b* 2-15 years; *c* Source: Northwest Adelaide Health Study, 2007; *d* Ischaemic Heart Disease; *e* 16+ years

Observations for hospitalisations and mortality for the chronic disease priority areas include:

- mortality across the five years for the priority areas, where data was available, in general has reduced, excepting chronic respiratory disease where the trend has fluctuated
- cardiovascular disease, of the priority areas, has the highest number of deaths in any given year
- hospitalisations for renal disease were almost triple that of any other priority area for 2006–07.

Table 3.2 Summary of hospitalisation and mortality for chronic disease priority areas

Priority	Hospitalisations 2006–07	Mortality 1999–2000	2000–01	2001–02	2002–03	2003–04
Cardiovascular (including stroke)	14 792	4 608	4 723	4 596	4 517	4 507
Cancer	17 083	–	–	–	–	–
Type 2 diabetes	16 107	113	100	99	114	102
Asthma	3 444	39	44	30	36	30
Chronic respiratory	22 825	450	456	440	476	460
Renal Disease	55 152					
Musculoskeletal (including arthritis/osteoporosis)	14 772	90	67	75	73	70

Source: Australian Bureau of Statistics, death data 1999–2004.

3.1 Injury

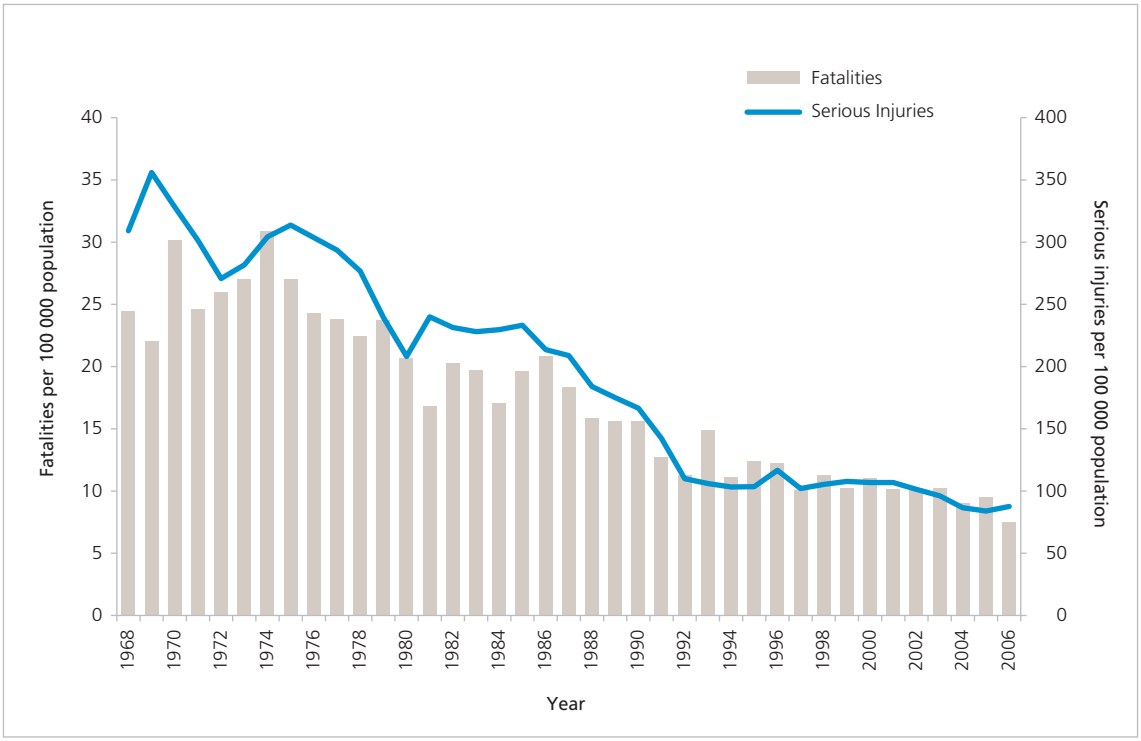
Injury — other than its association with youth — is a phenomenon with many similarities to other health issues. Males in South Australia, for example, are more at risk of injury than are females (as they are with cancer); lifestyle and behaviour play a large role in determining risk (as it does with diabetes); environments are crucial risk modulators (as pertains with communicable diseases); and there is a strong inverse association with socioeconomic status (as exists with mental illness).

Setting priorities in injury prevention is a matter of balancing three key parameters: frequency of event, severity of health effect and opportunity for intervention. It is naturally desirable to address hazards that commonly give rise to injury but, equally so, it is important to address the uncommon, even rare, events that may be associated with catastrophic consequences. Examples of the latter category involve cases of drowning and poisoning.

It must be acknowledged fundamentally that some hazards are susceptible to intervention, while others simply are not. Many playground injuries, for example, can be prevented by enforcing better design of play equipment. Some children nevertheless inevitably will be hurt by, for example, running into each other while distracted during play. Acknowledging the inevitability of some level of injury occurrence in the community, however, is not the same as concluding that injury is a random event, unresponsive to measures of prevention; in fact, quite the opposite is true. Injury control has been cited among all public health issues in Australia as a good example of long-term success. The table on the page opposite demonstrates the long-term declining rate of road accidents in South Australia expressed in terms of death and serious injury.

Young people of different ages in general experience injury in circumstances directly reflecting their developmental stage (for very young children) and their daily activities (for older children, youth and young adults). Children aged 1–4 years who are injured are proportionally more likely to be engaged in routine personal activities (washing, dressing, sleeping, et al.) — as might be expected — than those in other age groups. Children aged 12–15 years who are injured are proportionally more likely to be engaged in sporting activity than those in other age groups. Occupational injury is prominent among 16-29-year-olds while, from age five years onward, all the age groups through age 29 have approximately equal proportional representation in transport-related injury.

Graph 3.1.1 Road accidents per 100 000 population, South Australia, 1968–2006



Source: SA Department for Transport, Energy & Infrastructure, Transport Services Division.

The age group after youth that is second-most susceptible to injury, however, is the elderly. Fall injury in particular is a threat, with nearly one-in-three people aged 70+ years reporting a fall each year. Not every fall results in a hospitalisation, fortunately, but as the population of elderly people increases rapidly in number, those requiring health care after a fall increases as well (see Chapters 8 and 11).

Domestic violence has a significant impact on the health and wellbeing of Australian families and communities. It was estimated that the total annual cost of domestic violence in 2002–03 to the Australian economy was $8.1 billion, including direct and indirect costs. Direct costs are those costs associated with providing resources, facilities and services to people as a result of being subjected to domestic violence. Indirect costs are those associated with the pain, suffering and fear experienced by partners and children who live with domestic violence.[1]

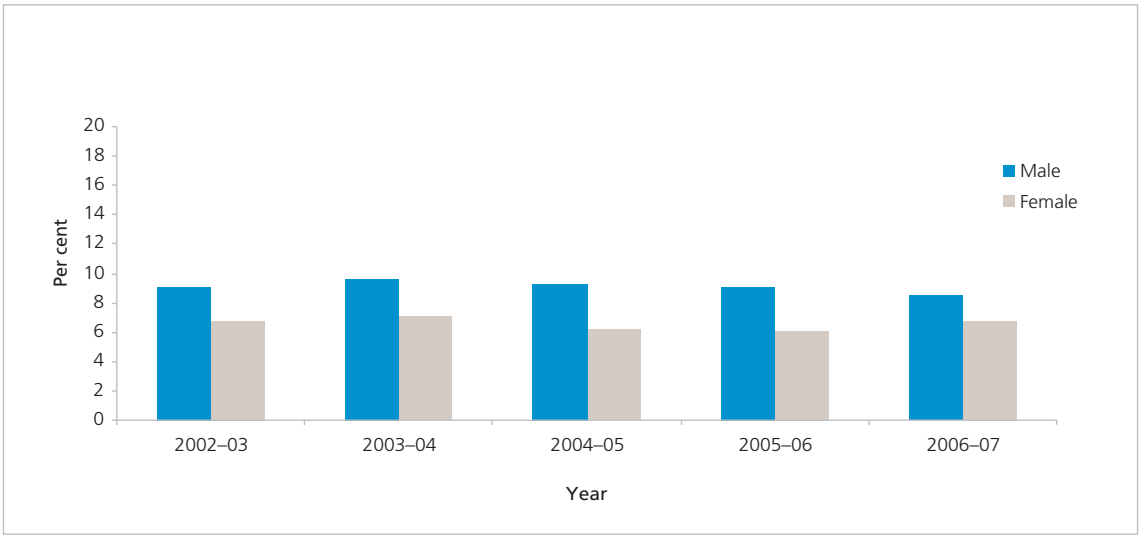
The Federal National Data Collection Agency Annual Report shows that 5 250 women used domestic violence services in South Australia in 2002–03; based on Victorian survey results from 2000[5], the number of women affected by domestic violence would be closer to 105 000 within this state alone. Also within the Victorian survey is evidence that foetal morbidity as a result of domestic violence is more prevalent than gestational diabetes or pre-eclampsia, the two most commonly cited reasons for child death.

3.2 Cardiovascular health, including stroke

Ischaemic heart disease caused the greatest single disease burden in South Australia, accounting for 11.3 per cent of Disability adjusted life years (DALYs) as measured by the burden of disease over 2001–2003 and 18.2 per cent of the Years of life lost (YLL) due to premature mortality. Stroke additionally accounted for 6.8 per cent of YLL and 5.3 per cent toward the total DALYs (see Chapter 2).[3]

The results of the 2006–07 SAMSS indicate that 7.6 per cent of respondents reported having cardiovascular disease. More males (8.5 per cent) reported having cardiovascular disease compared to females (6.7 per cent).[3]

Graph 3.2.1 South Australian prevalence of cardiovascular disease, by gender, 16+ years

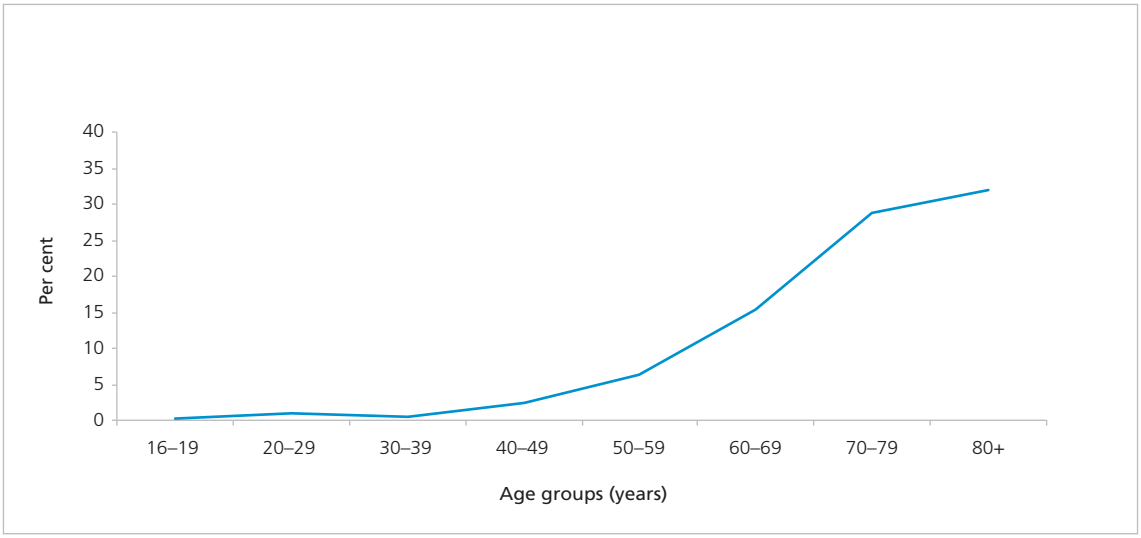


	2002–03	2003–04	2004–05	2005–06	2006–07
Male	9.0	9.7	9.3	9.1	8.5
Female	6.7	7.0	6.2	6.0	6.7

Note: Cardiovascular disease is defined as respondents having ever been told by a doctor that they have had any cardiovascular problems such as heart attack, angina, heart disease or stroke.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

More people aged 60+ years consistently reported having cardiovascular disease throughout the survey years than those in younger age groups.[2]

Graph 3.2.2 South Australian prevalence of cardiovascular disease, by age group, 16+ years, 2006–07



	16–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years	80+ years
Cardiovascular disease	0.2	0.9	0.6	2.4	6.4	15.4	28.8	31.9

Note: Cardiovascular disease is defined as respondents having ever been told by a doctor that they have had any cardiovascular problems such as heart attack, angina, heart disease or stroke.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

There were 47 808 hospitalisations due to ischaemic heart disease (IHD), 12 741 due to stroke, and 14 371 due to heart failure over the past five years to 2006–07. Analysis of these data demonstrates that males accounted for 64 per cent of IHD hospitalisations, 52 per cent for stroke and 53 per cent for heart failure. There were 9 341 IHD hospitalisations; 2 554 for stroke and 2 897 for heart failure in 2006–07.

An average for the period 1999–2000 to 2003–04 of 4 590 deaths per year can be attributed to cardiovascular conditions, comprising 2 459 for ischaemic heart disease, 258 for heart failure and 1 099 each year for stroke. Cardiovascular conditions accounted for 39 per cent of deaths reported throughout this five-year period.

Table 3.2.1 Numbers of deaths in South Australia due to cardiovascular conditions

Cardiovascular condition	1999–2000	2000–01	2001–02	2002–03	2003–04
All cardiovascular conditions	4 608	4 723	4 596	4 517	4 507
Ischaemic heart disease	2 517	2 565	2 485	2 351	2 375
Heart failure	244	255	258	275	257
Stroke	1 082	1 159	1 067	1 082	1 105

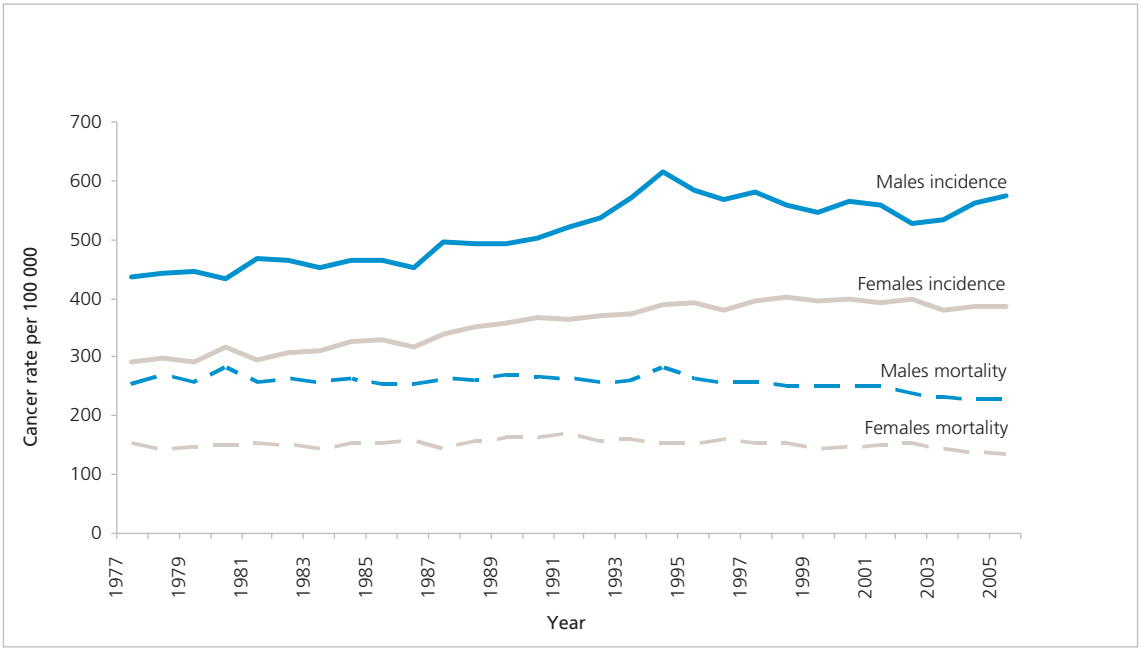
Source: Australian Bureau of Staistics, death data 1999–2004.

3.3 Cancer

There were 8 456 new cases of cancer diagnosed in South Australia in 2005, while there were 3 302 cancer deaths; these figures represent 266 more new cases than reported in the previous year, and 53 more deaths. There was a trend until 2003 towards stable incidence rates for both males and females, but 2004 and 2005 showed an increase in prostate cancer incidence which caused the overall cancers incidence rate for males to rise.

Annual cancer incidence and mortality data on the Central Cancer Registry are validated routinely and completed in the following year. Annual reports are produced that summarise the previous year's statistics. The population-based registry began collecting cancer statistics in 1977 and focuses on collecting data for all cancers that occur within South Australia. Six hospitals also collect more detailed information about specific cancers, enabling clinical units to monitor the care of their patients and the outcomes of this care.[4]

Graph 3.3.1 Cancer incidence and mortality rates by time, South Australian males and females, 1977–2005



Source: SA Health, South Australian Central Cancer Registry.

The most common cancers recorded in 2005 in South Australia for males and females, with lifetime risks and mortality, are listed in Table 3.3.1.

Cancer is predominantly a disease of older people in South Australia with 60 per cent of cancers in 2005 occurring in the 65+ age group. Cancers in the 0–44 age group accounted for only 8 per cent of all cancers. Leukaemias (12 cases), lymphomas (10) and cancers of the central nervous system (9) accounted for 86 per cent of all cancers in people aged 0–14. Melanoma (123 cases), female breast (104), testes (45), non–Hodgkin's lymphomas (37), thyroid (37), cervix (26) and central nervous system (25) were the most commonly reported cancer sites for people in the 15–44 age group. The most common cancers overall predominated in the 65+ age group, with prostate (995 cases), colorectal (757), lung (556), female breast (423) and melanoma (337) being the most commonly diagnosed cancers.

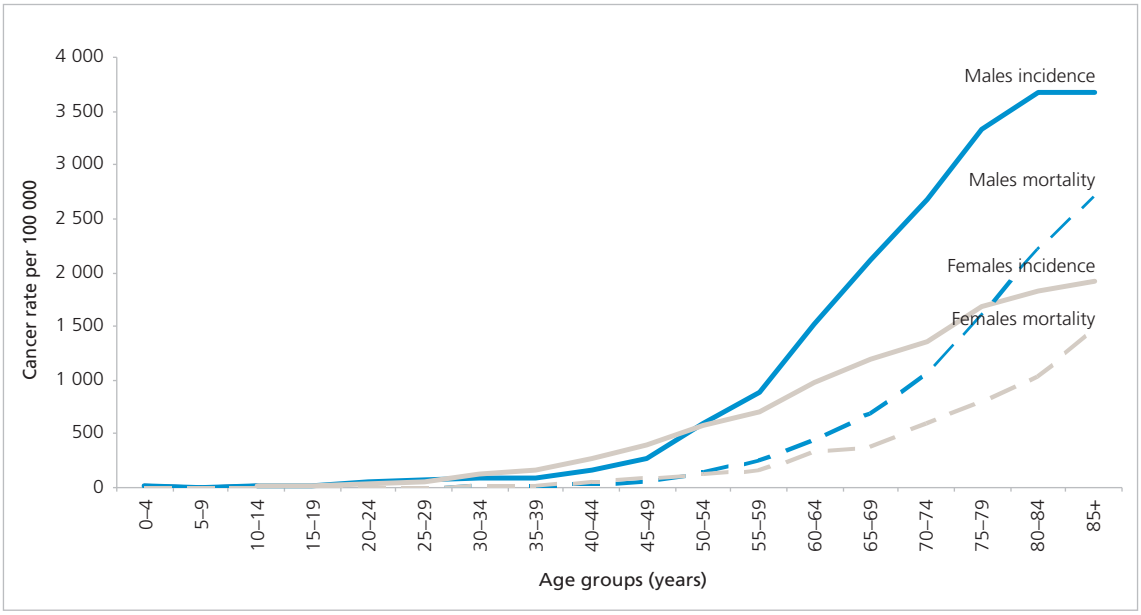
Table 3.3.1 New cases, lifetime risk and mortality rates — most common cancers in South Australia, 2005

Female site name	New cases	Lifetime risk	Mortality rate	Male site name	New cases	Lifetime risk	Mortality rate
Breast	1 010	1 in 12	23.7	Prostate	1 462	1 in 8	32.3
Colorectal	512	1 in 28	19.7	Colorectal	635	1 in 19	28.2
Melanoma	327	1 in 34	2.3	Lung	484	1 in 24	52
Lung	275	1 in 47	22.2	Melanoma	401	1 in 27	6.5
Non-Hodgkin's Lymphoma	186	1 in 73	5.1	Non-Hodgkin's Lymphoma	187	1 in 59	9.9
Uterus	169	1 in 65	2.5	Unspecified	152	1 in 83	13
Unspecified	134	1 in 122	10.3	Kidney	149	1 in 71	5.4
Ovary	93	1 in 135	5.2	Bladder	132	1 in 119	8.3
Pancreas	80	1 in 239	8.3	Pancreas	100	1 in 120	11.4
Thyroid	80	1 in 129	0.4	Stomach	97	1 in 138	8.7
All cancers	**3 96**	**1 in 4**	**135.9**	**All cancers**	**4 760**	**1 in 3**	**228.7**

Note: Rates are expressed per 100 000 and standardised to the Australian 2001 population. Lifetime risk is calculated to age 75. The 'All cancers' category refers to all cancers diagnosed in South Australia in 2005, not to the total of the column above.
Source: SA Health, South Australian Central Cancer Registry.

There has been a decreasing mortality rate over the last 10–15 years for prostate cancer and female breast cancer. Lung cancer remained the leading cause of cancer death in South Australian males (23 per cent), even though lung cancer mortality is declining steadily. Prostate and colorectal — of the other cancers — were the higher number of deaths in males, accounting for a further 26.2 per cent. Lung cancer, breast cancer and colorectal cancer all accounted for a similar percentage of cancer deaths in females in South Australia; this has not always been the case, as lung cancer accounted for only 8 per cent of deaths in 1980. Other leading cancers were those of unspecified primary site, pancreas, non–Hodgkin's lymphoma and ovary (see Table 3.3.1).

Graph 3.3.2 Cancer incidence and mortality by age group, South Australian males and females, 2005



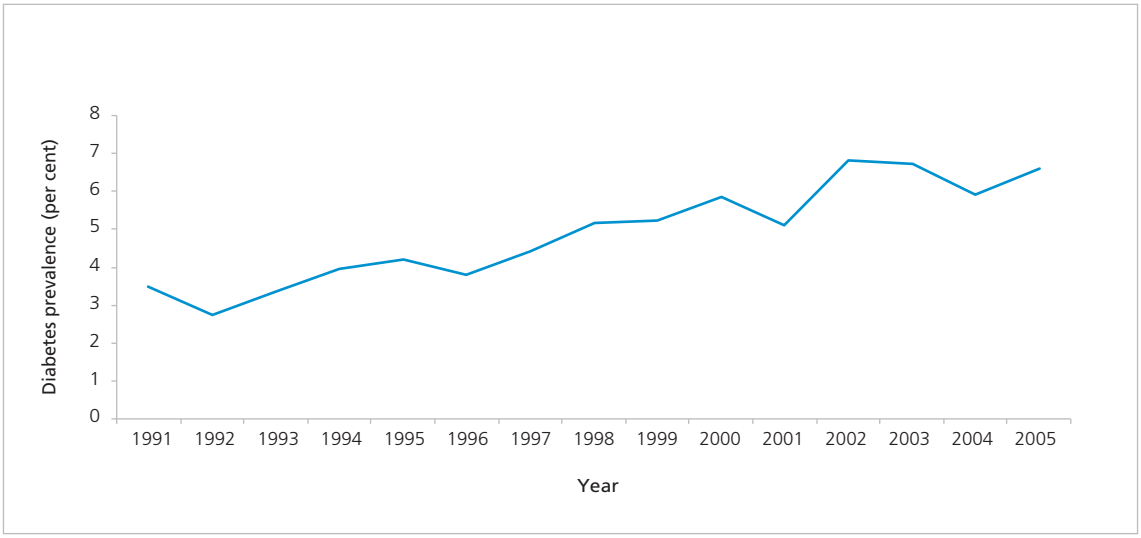
Source: SA Health, South Australian Central Cancer Registry.

There were 82 912 hospitalisations over the past five years, between 2002–03 and 2006–07, of which 60 per cent were due to cancer in people 65+ years.

3.4 Diabetes

South Australia's annual Health Omnibus Survey has shown a gradual increase in the age and gender standardised prevalence of diabetes in South Australia.[7]

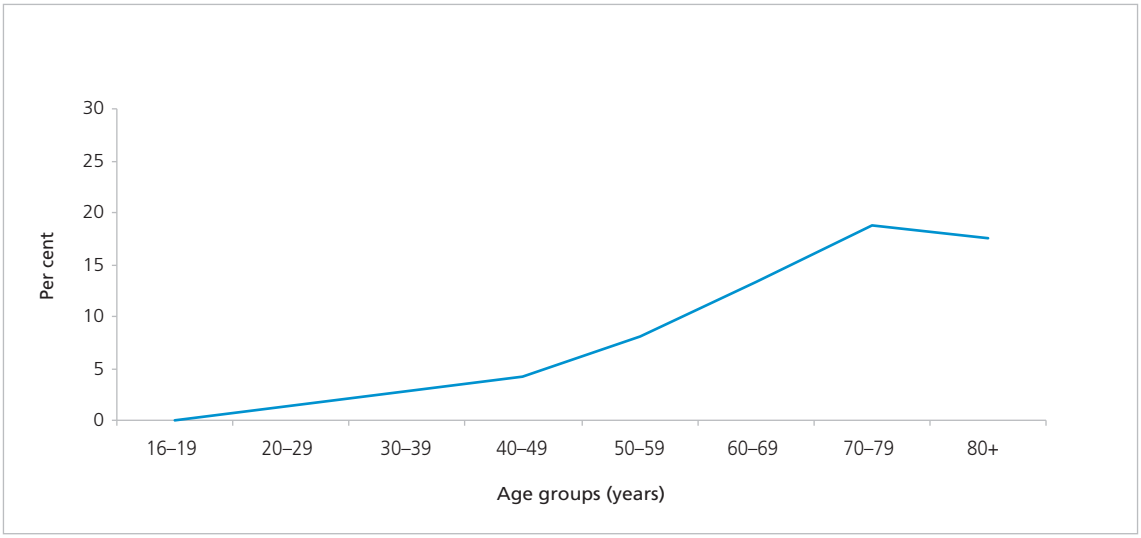
Graph 3.4.1 Age-sex standardised prevalence of diabetes in South Australia 1991–2005



Source: SA Health, Health Omnibus Surveys 1991 to 2005, ages 15+ years.

SAMSS survey data also showed no significant difference between males and females reporting diabetes, but the graph opposite clearly demonstrates the increasing prevalence of the disease with age.

Graph 3.4.2 Prevalence of diabetes, by age groups, 16+ years, 2006–07



Note: Diabetes is defined as respondents having ever been told by a doctor that they had diabetes.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

More than 83 000 South Australians were diagnosed with diabetes by the year 2003. This number is predicted to almost double by 2016, increasing to more than 150 000.[7] The proportion of diabetes cases that are undiagnosed is estimated at approximately 15 per cent by the North West Adelaide Health Study[8]; suggesting that for every five new cases of diagnosed diabetes, there is another case that has not yet been found.

The prevalence of diabetes and associated risk factors is greater among Aboriginal and Torres Strait Islander communities.[9] Risks also are exacerbated for people from lower socioeconomic groups, with South Australian surveillance data showing a prevalence of 11.9 per cent among people living in households where annual income is $20 000 or less, and 10.6 per cent among people from culturally and linguistically diverse backgrounds (CALD).[10]

There were 63 301 hospitalisations over the past five years, between 2002–03 and 2006–07, where Type 2 diabetes was listed as a principal or secondary diagnosis, with 99 per cent of the patients being 35 years and older. Hospitalisations over these five years progressively increased by an average of 19 per cent annually from 9 080 in 2002–03 to 16 107 in 2006–07. There were 12 671 hospitalisations over the same five-year time period with Type 1 diabetes listed as a principal or secondary diagnosis.

Mortality attributed to diabetes as the condition directly leading to death has not changed significantly over the years 1999–2000 to 2003–04, with an average of 280 deaths reported annually; an average of 106 of these deaths over this five-year period were directly attributed to Type 2 diabetes, another 31 deaths to Type 1 diabetes and a further 144 deaths were attributed to diabetes with no type specified. Diabetes (all types) conditions throughout this five-year period accounted for 2 per cent of deaths reported.

Table 3.4.1 Numbers of deaths due to diabetes in South Australia

Condition	1999–2000	2000–01	2001–02	2002–03	2003–04
Type 1 diabetes	30	31	34	24	38
Type 2 diabetes	113	100	99	114	102
Diabetes unspecified	147	139	130	152	153
Total	**290**	**270**	**263**	**290**	**293**

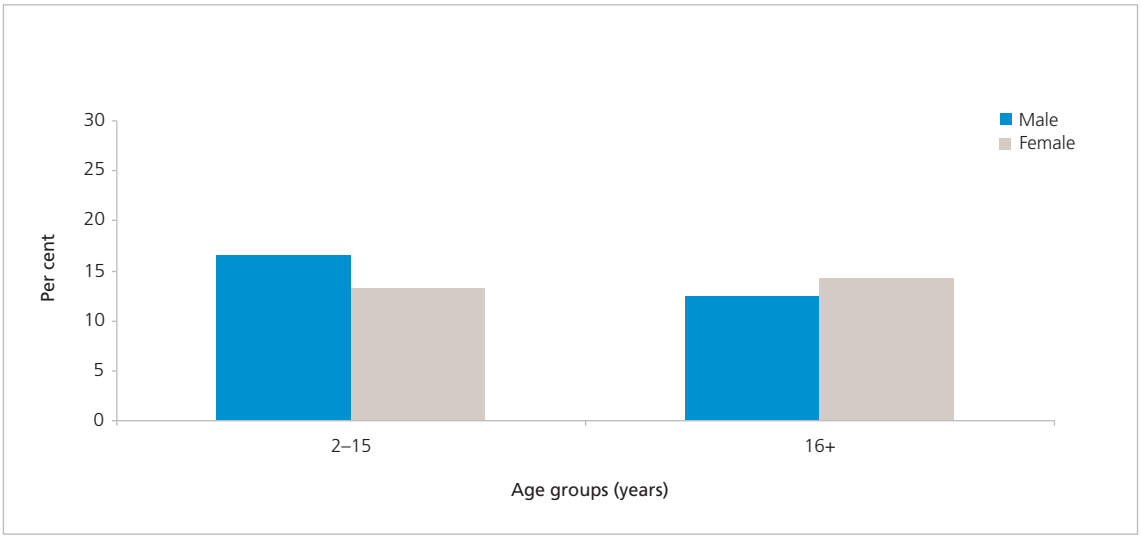
Source: Australian Bureau of Statistics, death data 1999–2004.

3.5 Asthma

SAMSS survey data for 2006–07 indicate that current asthma was reported by 13.4 per cent of South Australians aged 16+ years, and in 14.8 per cent of those aged 2–15 years. Prevalence over the past five years is trending downwards.[3]

The 2006–07 SAMSS results indicate that females were significantly more likely (14.3 per cent) than males (12.5 per cent) to report having current asthma. Similar trends have been observed over time. There was little difference, however, among those aged 2–15 years in asthma prevalence between the genders, except in 2004–05, when males were significantly more likely to report having current asthma.[3]

Graph 3.5.1 Prevalence of asthma, by gender, 2–15 years and 16+ years, 2006–07

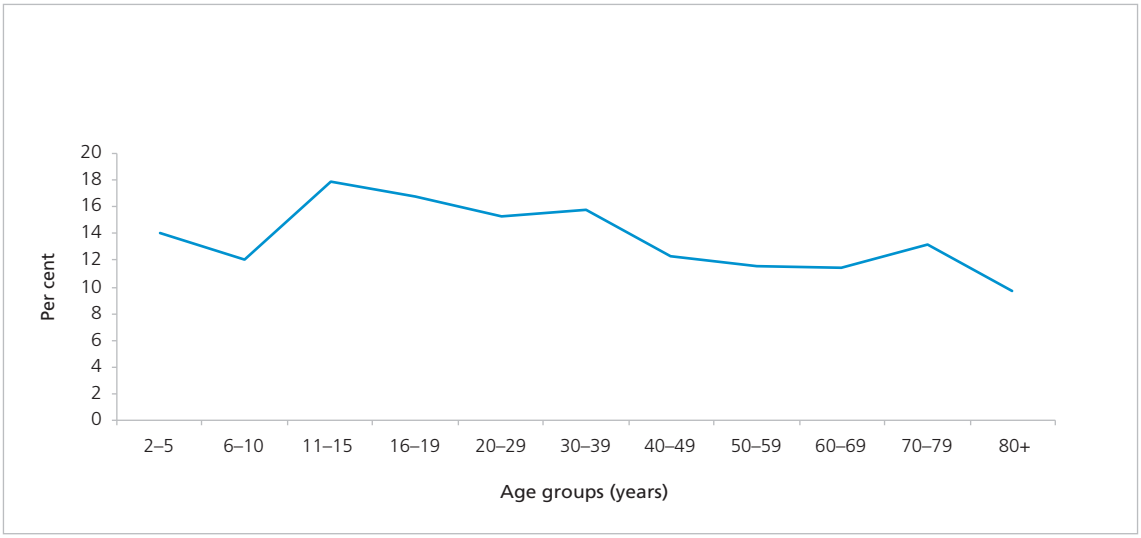


Note: Asthma is defined according to the ACAM definition[2] of whether respondents had ever been told by a doctor that they had asthma, and had experienced symptoms (wheeze, shortness of breath or chest tightness) of asthma in the last 12 months or had taken treatment for asthma in the last 12 months.

Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS). Percentages are calculated separately for the adult population from the 16 years and over dataset, and the child population from the 2–15 year dataset.

Asthma varied across age groups. Asthma in 11 to 15-year-olds was higher in 2006–07 than for the younger age groups, and those aged 6–10 years were least likely to have asthma.

Graph 3.5.2 Prevalence of asthma, by age group, 2+ years, 2006–07

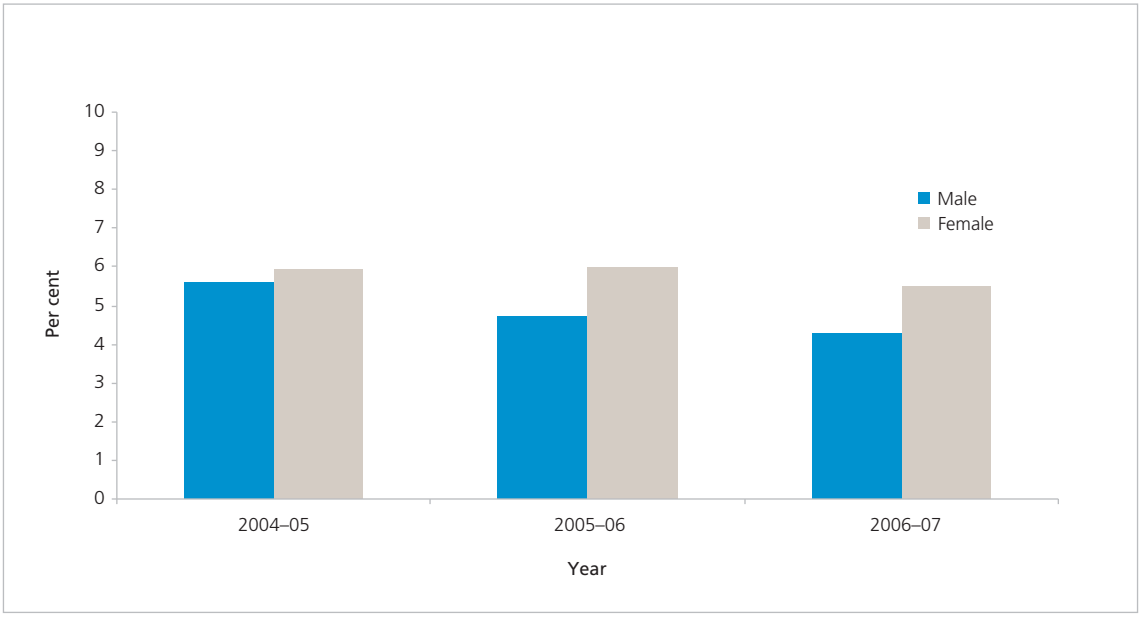


There were 17 792 hospitalisations attributed to asthma between 2002–03 and 2006–07, of which 61 per cent of patients were under 15 years old, with two-thirds of these under 5 years old. Australia-wide comparisons indicate that hospitalisation rates for children under age 18 in 2002–03 were generally higher in South Australia than in other states and territories, yet age mortality rates were consistent with national rates.[11]

3.6 Chronic respiratory conditions

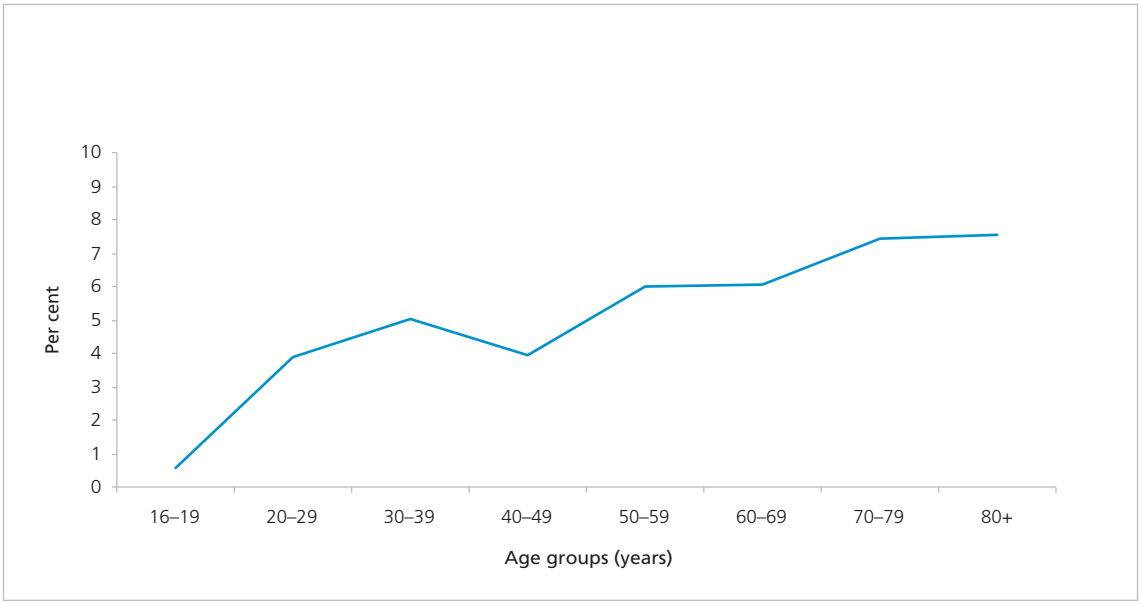
The 2006–07 SAMSS results indicate that 4.9 per cent of respondents aged 16+ years self-reported having a respiratory condition. Females were more likely (5.5 per cent) than males (4.3 per cent) to report having a respiratory condition, as were older people aged 70+ years.[3]

Graph 3.6.1 Prevalence of chronic respiratory conditions, by gender, 16+ years



Note: Chronic respiratory conditions are defined as respondents having ever been told by a doctor that they have any other respiratory problems such as bronchitis, emphysema, or chronic lung disease that had lasted six months or more.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

Graph 3.6.2 Prevalence of chronic respiratory conditions, by age groups, 16+ years, 2006–07



Note: Chronic respiratory conditions is defined as respondents having ever been told by a doctor that they have any other respiratory problems such as bronchitis, emphysema, or chronic lung disease that had lasted six months or more.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

There were 114 421 hospitalisations over the past five years to 2006–07 due to chronic respiratory conditions, of which 73 per cent were aged 65+ years and 99 per cent were aged 35+ years. Hospitalisations over the past five years ranged from 21 435 in 2002–03 to 24 203 in 2005–06.

The number of deaths directly attributed to chronic respiratory conditions did not change significantly during the period 1999–2000 to 2003–04, averaging 456 deaths per annum. Chronic respiratory conditions were 4 per cent of the total deaths reported during these years, with all respiratory conditions accounting for 10 per cent.

3.7 Renal disease/failure

Kidney disease has an important impact on the health system at two levels. First, the requirements of people with the most severe degree of kidney damage — end-stage renal disease (ESRD) — for dialysis and transplantation has a major effect on individuals, hospitals and the broader health system. Dialysis and transplantation collectively are referred to as 'renal replacement therapy', as they allow ongoing survival by replacing the body's own kidney function. Second, milder degrees of kidney disease (various stages of 'chronic kidney disease') are surprisingly common, and have been associated with higher rates of cardiovascular disease, hospital admission and death.[12, 13]

Chronic Kidney Disease (CKD) is categorised into five stages; stages 1 and 2 require the presence of blood or protein in the urine, or a radiological indicator of kidney disease, and stages 3 to 5 are based upon reduced calculated glomerular filtration rate (GFR).[14] The Northwest Adelaide Health Study included some information on the prevalence of CKD in the South Australian community. The structure of the study did not allow exact calculation of stages 1 and 2, as haematuria (blood in urine) was not collected; however, abnormal albuminuria (protein in urine) was present in 5.5 per cent of participants. The prevalence of chronic kidney disease is shown in Table 3.7.1. Stage 3, 4 or 5 CKD was present in 11.4 per cent of participants, with 0.4 per cent having Stage 4 CKD and 0.1 per cent with Stage 5 CKD.

Table 3.7.1 Prevalence of chronic kidney disease

	Stage 2	
	Number	Per cent
No kidney damage, or Stage 1 or Stage 2 chronic kidney disease	2 816	88.6
Stage 3 CKD	348	11.0
Stage 4 CKD	12	0.4
Stage 5 CKD	3	0.1
Total	**3 179**	**100.0**

Source: SA Health, *Northwest Adelaide Health Study*, 2007.

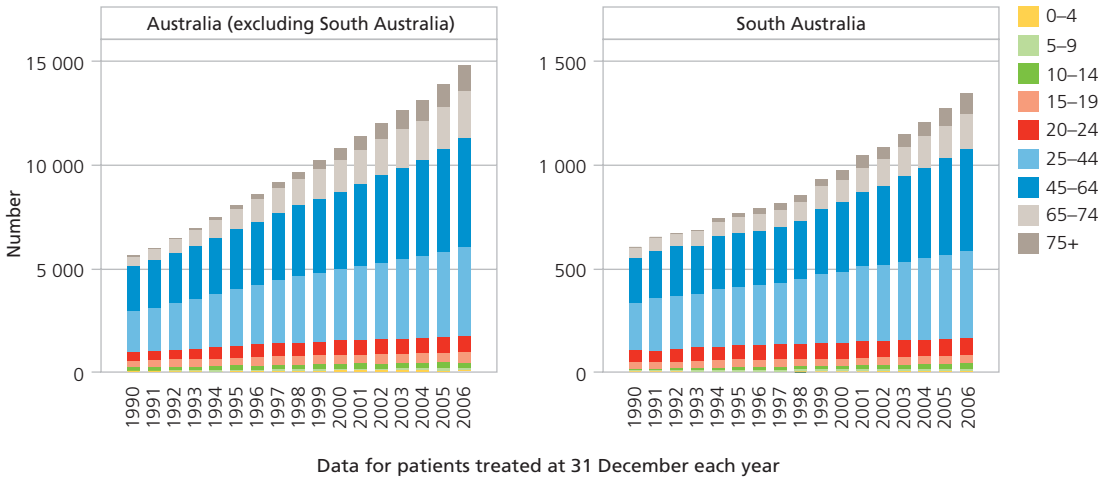
There are national-level data from the AusDiab study (conducted around Australia) about the prevalence of CKD in the community. The national data have been published in both the medical literature[15] and in the form of information sheets (available from <www.kidney.org.au>).

Glomerulonephritis was listed as the cause for 27 per cent of the 173 South Australians diagnosed with end-stage renal disease in 2005, and was the most common cause. Diabetic nephropathy (23 per cent) was the next most common single cause of ESRD, followed by hypertension (13 per cent), polycystic kidney disease (10 per cent), reflux nephropathy (5 per cent) and analgesic nephropathy (2 per cent). The cause was uncertain in 6 per cent of people, and a variety of conditions accounted for a further 13 per cent.

There were 240 588 hospital admissions in the past five years, between 2002–03 and 2006–07, for renal dialysis in South Australian hospitals, of which 43 per cent of patients were aged 65+ years, and 91 per cent of them were aged 35+ years. The age pattern in 2006–07 was similar, with 55 152 hospital attendances; over the previous five years, this increased 8 per cent annually from 41 148 in 2002–03.

The number and rate of people in South Australia requiring renal replacement therapy has increased progressively over recent years, in common with the rest of Australia. This increase has been due predominantly to an increase in the number of new patients reaching end-stage kidney disease (patients beginning renal replacement therapy). The age of patients also is increasing. A small part of this increase is due to the ageing of the population and the increase in numbers within the older age groups. The trends in South Australia are very similar to the rest of Australia.

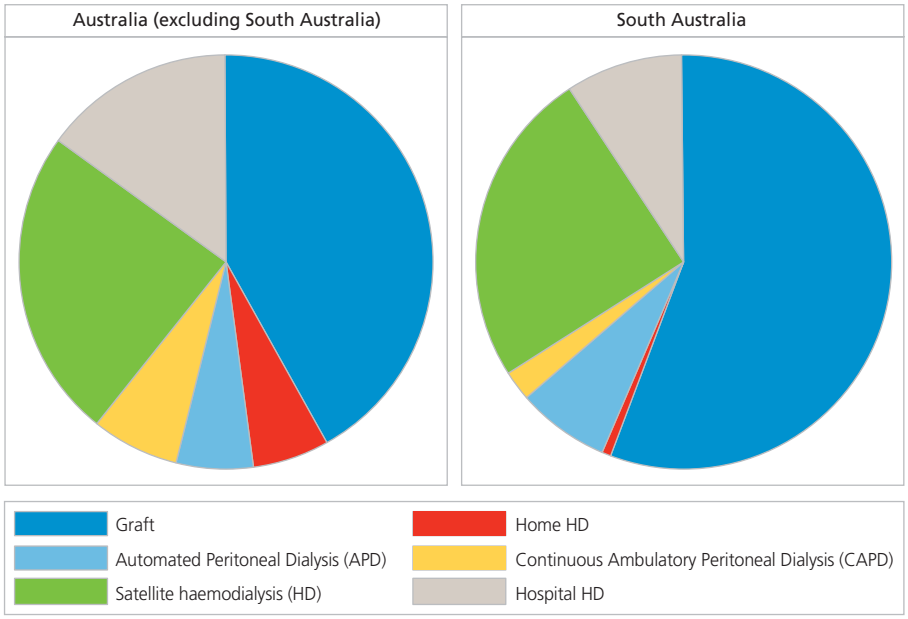
Graph 3.7.1 Number of patients requiring renal replacement therapy, by year



Source: ANZDATA Registry.

South Australia differs from all other states in Australia, in that most people with end-stage kidney failure actually received the renal replacement therapy with a functioning kidney transplant rather than dialysis; this is due to the higher rate of transplantation in South Australia, which in turn demonstrates the higher rates of both deceased organ donation and living donor transplantation. The proportion of transplant from living donors in particular — and, more recently, living unrelated donors — has increased over recent years.

Graph 3.7.2 Distribution of renal replacement therapy for South Australians and the remainder of Australians, at 31 December 2006



Data for prevalent patients 31 Dec 2006; ANZDATA Registry

3.8 Arthritis and musculoskeletal conditions

Osteoarthritis was rated as the third leading cause of morbidity in South Australia, accounting for 5.3 per cent of Years of healthy life lost to disability (YLD) on average over 2001–2003 (see Chapter 2).[2]

The proportion of adults in South Australia who have arthritis has not changed in recent years based on the South Australian Monitoring and Surveillance System (SAMSS). The prevalence of arthritis of 20.0 per cent for people aged 16+ years in South Australia in 2006–07 was not significantly different to prevalence estimates of 21.3 per cent in 2002–03. The proportion of adults reporting osteoporosis, however, was significantly lower in 2002–03 compared to recent years.[3]

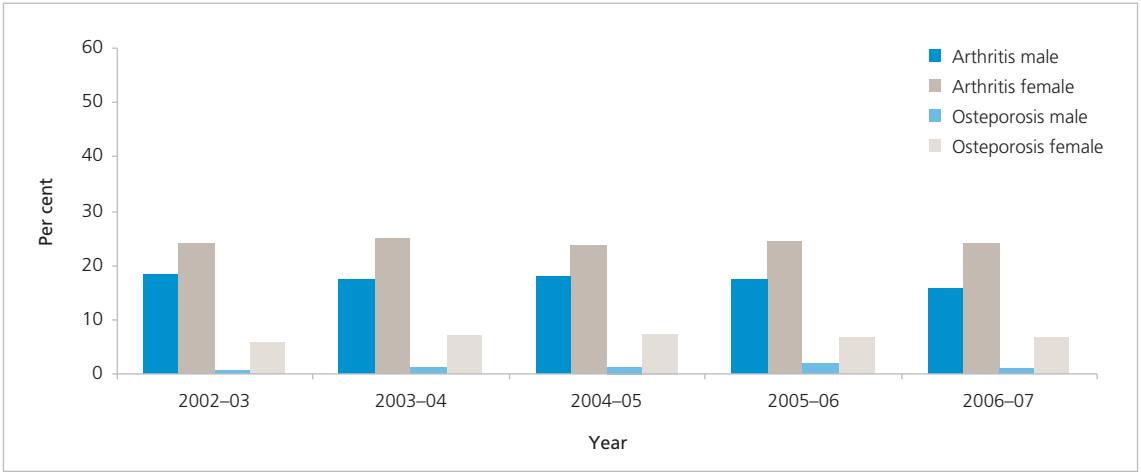
Table 3.8.1 Prevalence of arthritis and osteoporosis in South Australia, 16+ years

	2002–03	2003–04	2004–05	2005–06	2006–07
Arthritis	21.3	21.3	21.0	20.8	20.0
Osteoporosis	3.2	4.3	4.4	4.3	3.9

Note: Arthritis is defined as respondents having ever been told by a doctor that they had arthritis, including osteoarthritis, rheumatoid arthritis, juvenile rheumatoid arthritis (JRA), or any other type of arthritis. Osteoporosis is defined as respondents having ever been told by a doctor that they had osteoporosis.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

Females were significantly more likely (24.2 per cent) than males (15.6 per cent) to report having arthritis for the year 2006–07, and this also was evident with osteoporosis, where 6.7 per cent of females reported having the condition compared to 1.1 per cent of males. This pattern was evident in all the surveys. Arthritis and osteoporosis both are much more prevalent in the older age groups.[3]

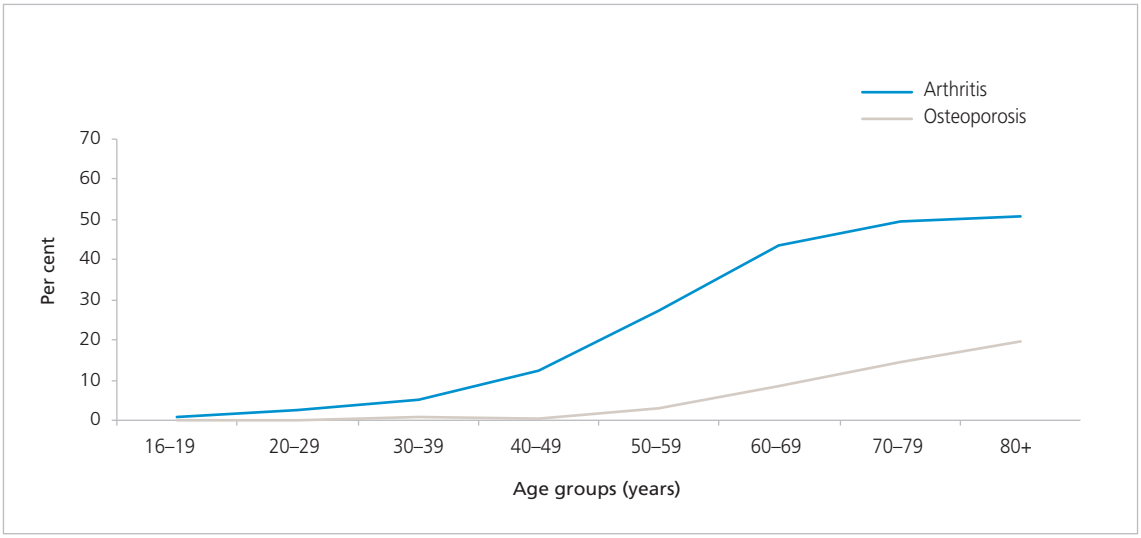
Graph 3.8.1 Prevalence of arthritis and osteoporosis, by gender, 16+ years



		2002–03	2003–04	2004–05	2005–06	2006–07
Arthritis	Male	18.4	17.3	18.1	17.2	15.6
	Female	24.0	25.1	23.9	24.2	24.2
Osteoporosis	Male	0.5	1.4	1.3	1.8	1.1
	Female	5.8	7.1	7.4	6.8	6.7

Note: Arthritis is defined as per Table 3.8.1 above.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

Graph 3.8.2 Prevalence of arthritis and osteoporosis, by age group, 16+ years, 2006–07



	16–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years	80+ years
Arthritis	1.0	2.4	5.0	12.5	27.4	43.4	49.6	50.6
Osteoporosis	0.0	0.0	0.7	0.5	3.0	8.4	14.6	19.7

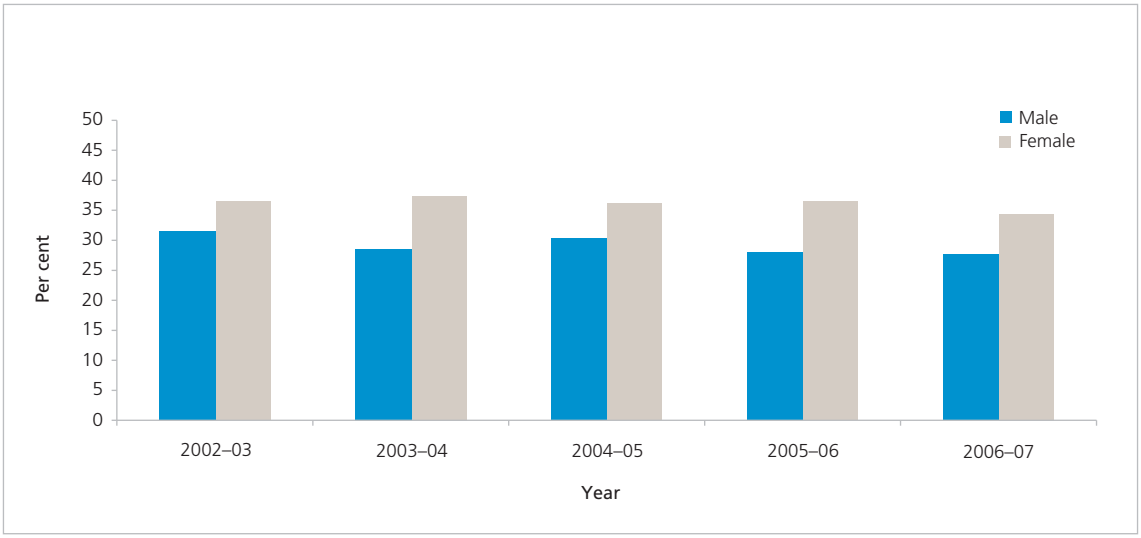
Note: Arthritis is defined as respondents having ever been told by a doctor that they had arthritis, including osteoarthritis, rheumatoid arthritis, juvenile rheumatoid arthritis (JRA), or any other type of arthritis. Osteoporosis is defined as respondents having ever been told by a doctor that they had osteoporosis.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

There were 71 238 hospitalisations due to musculoskeletal conditions over five years between 2002–03 and 2006–07. Nearly 90 (88) per cent of these hospitalisations related to persons who were 35 years and older. Hospitalisation numbers ranged from 13 835 in 2004–05 to 14 772 in 2006–07.

3.9 Living with chronic conditions

South Australia's Strategic Plan Target T2.6 for chronic diseases aims to increase by five percentage points the proportion of people living with a chronic disease whose self-assessed health status is good or better. The South Australian Monitoring and Surveillance System (SAMSS) has been used to monitor this target and has identified that the proportion is decreasing, reaching 31.1 per cent in 2006–07. A breakdown by gender over the past five years is presented in Graph 3.9.1.

Graph 3.9.1 Prevalence of at least one chronic disease/condition for people whose self-assessed health status was good or better, by gender, 16+ years

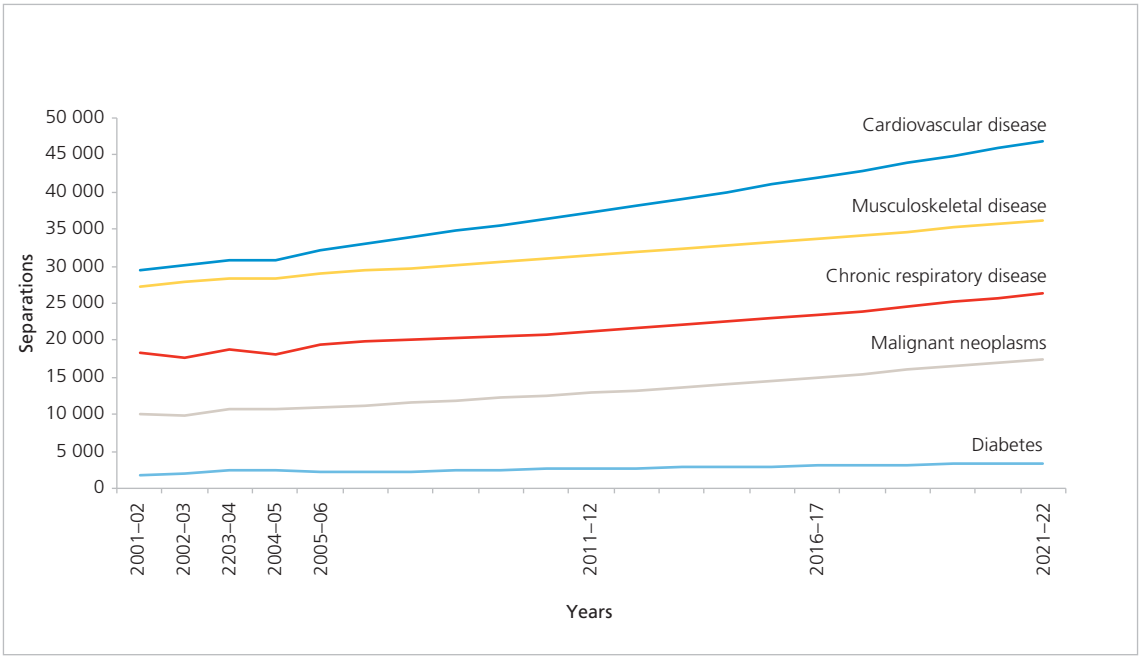


Note: Multiple health conditions were derived by the accumulation of five chronic health conditions. These included diabetes, asthma, cardiovascular disease, arthritis, and osteoporosis.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

Females (34.5 per cent) were significantly more likely than males (27.5 per cent) to report having good or better health, of those respondents (2006–07 SAMSS) with at least one chronic health condition. People aged 50+ years with at least one chronic health condition also were significantly more likely than those in younger age groups to report having good or better health.

The number of people requiring treatment for chronic conditions is expected to rise in South Australia, driven partly by the ageing population and partly through increased risk factors. The following graph shows the projected growth in hospital demand for patients with chronic conditions if steps are not taken to prevent people from developing chronic disease or if those people with chronic conditions are not better managed.

Graph 3.9.2 Estimates of growth in chronic disease hospitalisations in South Australia



Source: SA Health, Integrated South Australian Activity Collection.

The risk factors associated with a number of chronic diseases overlap considerably as represented in Table 3.9.1. Programs targeting a reduction in risk factors for one condition also will often effect a reduction in other chronic diseases.

Table 3.9.1 Relationship between chronic diseases, conditions and risk factors[16]

Disease	Poor diet	Physical inactivity	Tobacco use	Alcohol misuse	Excess weight	High blood pressure	High cholesterol
Heart disease	X	X	X	X	X	X	X
Stroke	X	X	X	X	X	X	X
Lung cancer	–	–	X	–	–	–	–
Diabetes	X	X	–	–	X	–	–
Asthma	–	–	X	–	X	–	–

Data from SAMSS indicated that in South Australia there are approximately 396 300 adults with a single risk factor, 222 300 adults with two or more risk factors, and 92 800 adults with three or more risk factors for chronic disease.

3.10 Services and initiatives

Chronic disease is a high priority in South Australia and a key focus of many services initiatives aimed at reducing the burden of these health priority conditions. *SA's Health Care Plan 2007–2016* focuses on improving the coordination of care — and access to appropriate care — for people with these conditions. Primary prevention strategies focus on risk factors that contribute to developing all these conditions and are further described in Chapter 4.

There has been a significant reduction in road accident fatalities and injuries over the past 30 years as dedicated road accident research findings have been translated into legislation and practice. Injury surveillance units continue to intervene for improved outcomes, using evidence from various injury and trauma surveillance systems. Interventions address not only hazards commonly giving rise to injuries but, importantly, also more rare events or hazards that may be associated with catastrophic consequences, such as drowning and poisoning.

Many initiatives address chronic diseases collectively, due to the overlap in risk factors and management principles, with current and future initiatives encompassed in a Chronic Disease Management Plan for South Australia being developed during 2007–08, and the implementation of *The Statewide Cancer Control Plan 2006–2009*. *SA's Health Care Plan 2007–2016* provides details on how health services will be coordinated better with the support of community and individual initiatives, and new models of early intervention provided through GP Plus Health Care Centres; hospitals will provide access to networks of generalist and specialist care. This methodology also is assisted by the formation of eight clinical networks, including those of cardiology, cancer, renal and orthopaedics.

GP Plus Health Care Centres are being established on the basis of approximately one centre per 100 000 population, and incorporate chronic disease programs and initiatives, based on the service delivery models for existing Centres at Aldinga and Woodville. The GP Plus Practice Nurse Initiative aims to reduce workforce pressure on general practice in areas of high demand or areas with significantly high rates of chronic conditions in metropolitan Adelaide. The Nurse Case Management program will start in 2008 with nurses appointed to the program providing case management that aims to keep out of hospital frail elderly people with complex health conditions.

The Chronic Disease Community Program targets people identified at hospital discharge, or by a general practitioner, as being at risk of hospitalisation because of health deterioration due to a chronic disease. The program has demonstrated a 40–67 per cent reduction in hospital readmission rates for people with chronic disease in metropolitan Adelaide. Teams work in partnership with patients to develop care plans, and provide tailored and targeted care packages. The Metro Home Link service provides care in their place of residence (including residential care facilities) to patients of all ages in the Adelaide metropolitan area at risk of hospital admission or readmission. Care packages incorporate home-supported discharge, avoidance of hospital admission and access to equipment.

Chronic Disease Self Management programs assist people to take an active role in the ongoing management of their chronic disease. A telehome remote monitoring program will be piloted in South Australia in 2008. Remote monitoring enables home-based daily monitoring of people with a diagnosis of one or more chronic disease, to build capacity and confidence in self-management, adherence to care plans, and better access to community and hospital-based services.

A Health Call Centre service for South Australia began operation in July 2007. Statewide implementation by June 2008 will contribute to more integrated health care and improve access to appropriate health advice. HealthConnect is implementing a statewide web-based care planning system to support the care planning and management of people with chronic conditions; implementation through to primary health care providers is due by June 2008. The Risk Factor Register Scoping Study will examine the development of registers for chronic diseases and risk factors following the success of The Gestational Diabetes Mellitus Recall Register.[17]

The Statewide Cancer Control Plan 2006–2009 provides a comprehensive approach to screening and the appropriate management of different types of cancer, many of which have differing risk factors, natural histories, screening opportunities and treatments.

SA Health also is committed, with respect to domestic violence, to implementing the *Women's Safety Strategy* and the *Family Safety Framework*, both of which will work towards providing better safety outcomes for the whole family. The *Family Safety Framework* (FSF) is a cross–government information-sharing model that aims to increase the safety of families in high-risk domestic violence situations through integrated service responses and better agency awareness of risk factors.[18] FSF currently is being trialled in Holden Hill South Australian Police (SAPOL) Local Service Area (LSA), Noarlunga LSA and Pt Augusta LSA. Key representatives from SA Health participate on the Women's Safety Strategy Whole of Government Reference Group and the Family Safety Framework Implementation Committee.

The South Australian Government released the *South Australian Women's Health Policy* in March 2005, which aims to improve the health of all women in South Australia. The Women's Health Policy committed the South Australian health system to developing and implementing annual plans. *The Women's Health Action Plan for 2006–2007* was developed in consultation with key stakeholders and comprises 12 initiatives, of which three focus on women's safety. These initiatives involve developing and implementing:

- accessible, coordinated and integrated services in response to women's safety
- standards of best practice that will be used in providing services for women who have been raped and/or sexually assaulted
- evidence based recovery-focused models of service delivery using an holistic approach that recognises the links between women's experience of domestic violence and/or sexual assault, and women's physical and mental health.[5]

The Department of Health, and the Department for Families and Communities, in 2007 launched the document *Keeping Them Safe, Health and Families SA, Child Protection Information Sharing Protocol, Practice Guidelines 2006*. This initiative focuses on the key principle that the child's right to safety overrides the adult's right to privacy. The guidelines facilitate the release and exchange of relevant information between the two departments to enhance the safety and wellbeing of children, and acknowledges the impact of domestic violence in the family.[6]

3.11 Notes

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4 Risk factors for health

In this chapter

Summary

- Nearly 21 per cent (20.7) of people aged 15+ years self-reported being current smokers. People aged 20–49 years were significantly more likely to report being current smokers than were people in other age groups. Males were significantly more likely than females to report being current smokers.
- About 90 per cent (90.7) of people surveyed aged 19+ years were not eating the recommended five serves of vegetables per day. People aged 80+ years were significantly more likely to be consuming fewer than the recommended five serves of vegetables per day compared to people in other age groups.
- Just over 28 per cent (28.4) of people surveyed in 2006–07 aged 16+ years, were classified as being at risk of harm from alcohol in the short term. People aged 50–69 years were significantly more likely to be classified as at risk of harm from alcohol in the short term than were people in other age groups.
- The 2006–07 survey indicates that 56.7 per cent of people aged 18+ years were classified as overweight or obese. People aged 40–69 years were significantly more likely to be classified as overweight or obese than people in other age groups. Males (64.8 per cent) were significantly more likely than females (48.7 per cent) to be classified as overweight or obese.
- Just over 53 per cent (53.3) of people surveyed were undertaking sufficient levels of physical activity. The proportion of adults (aged 16+ years) in South Australia undertaking sufficient levels of physical activity has significantly increased in 2006–07 (52.9 per cent).
- The proportion of adults aged 16+ years in South Australia with high blood pressure has not changed in recent years. Just over 18 per cent (18.1) of those surveyed aged 16+ years self-reported having current high blood pressure. There was no significant difference between males and females, but older people (aged 50+ years) were significantly more likely to report having current high blood pressure than were younger people.
- Slightly over 14 per cent (14.3) of people aged 16+ years self-reported having high cholesterol. There was no significant difference between males and females, but older people (aged 50+ years) were significantly more likely to report having current high cholesterol than were younger people.

- Notifications of chlamydia infections (in both males and females) increased quite considerably between calendar year 2002 (1806 cases) and calendar year 2006 (3123 cases).
- The number of Hepatitis C Virus incident cases (infections acquired in past 12 months) has slightly increased from 44 cases in calendar year 2002, to 53 cases in calendar year 2006. Of the 53 cases in 2006, 38 (71 per cent) were for males, while 15 (29 per cent) were for females.
- There were 222 130 doses of influenza vaccine distributed in 2005–06, an increase on 2004–05. Almost 84 per cent of people aged 65+ years received annual influenza vaccination.
- South Australia maintained immunisation coverage above 90 per cent for children aged 12–15 months and 24–27 months (that is, 91 per cent and 92.2 per cent respectively) with both cohorts being at or above Australian levels.
- The coverage in June 2006 for meningococcal C vaccine in South Australia was 84.7 per cent for children aged 1–5 years compared to Australia overall at 83.9 per cent.
- The year 2005–06 has seen a marked increase in the numbers of notified cases of gonorrhoea, chlamydia and syphilis.
- There were 865 447 screening mammograms provided to 232 764 individual women across South Australia from 1 July 1988 to 30 June 2006. A total of 4 472 breast cancers were diagnosed by BreastScreen SA from 1 January 1989 to 31 December 2005.
- The participation rate of women screened for cervical cancer in the target population (aged 20–69 years) was 66 per cent in 2004–05; the projected target for the current reporting period (2005–06) was 68 per cent.

Introduction

A recent World Health Organization (WHO) report identified that much of the burden of disease in developed countries can be attributed to seven risk factors.[1] Those seven factors were identified as tobacco smoking, high blood pressure, alcohol use, high cholesterol, overweight, low fruit and vegetable intake, and physical inactivity.

Lifestyle factors influence the health status and health-risk profile of individuals. Tobacco smoking, for example, increases the risk of a range of diseases including cardiovascular disease and certain types of cancer. Lifestyle factors contribute significantly to the burden of disease in South Australia, yet they are largely modifiable, providing considerable scope for health gain.

This section of the report presents a series of indicators profiling a variety of lifestyle behaviours that have an effect on health. The data presented have been derived largely from population health surveys and include the most recent results available for South Australia.

These seven primary risk factors, while significant, are not the only ones that can impinge on a population's health; broader physical and social environmental determinants often can underpin the lifestyle choices of individuals and set the basic preconditions for poor health.

Key observations with regards to risk factors over the past five years are:

- the proportion of persons surveyed who indicated being current smokers has reduced from 24.1 per cent in 2002–03 to 20.7 per cent in 2006–07
- slight increases in the proportion of persons reporting high blood pressure, high cholesterol and overweight/obesity
- relatively stable proportions across the years for other risk factors.

Table 4.1 Summary of risk factors across the past five years

Risk factor	2002–03	2003–04	2004–05	2005–06	2006–07
Current Smoker[d]	24.1	23.6	21.9	19.1	20.7
Fewer than 5 serves of vegetables per day[b]	93.0	91.9	89.5	88.1	90.7
Fewer than 2 serves of fruit per day[b]	57.7	60.4	58.8	57.1	58.1
Short-term — risky/high-risk alcohol[a]	29.1	28.9	29.5	29.9	28.4
Long-term — risky/high-risk alcohol[a]	4.0	4.0	3.9	3.3	3.7
Overweight or obese[c]	54.5	54.6	55.1	55.7	56.7
Underweight[a]	2.5	2.4	2.2	1.8	2.2
Insufficient activity / no activity[a]	–	49.0	50.2	48.7	47.1
High blood pressure[a]	–	17.1	18.6	18.1	18.1
High cholesterol[a]	–	13.2	14.3	13.5	14.3

Note: [a] 16+ years; [b] 19+ years; [c] 18+ years; [d] 15+ years
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2].
The Cancer Council South Australia, SA Health Omnibus Survey (Current smoker).

Key observations with regards to risk factors across age groups for 2006–07 from the results include:

- people aged 20–49 years were significantly more likely to report being current smokers than were people in other age groups
- there is a dramatic increase in the proportion of persons reporting high cholesterol and high blood pressure for their age group for persons 50+ years
- overweight or obese, and insufficient or no activity, are more common risk factors in the elderly, although the proportion of overweight or obese reduces significantly in the 80+ age group.

Table 4.2 Summary of risk factors by age group for 2006–07

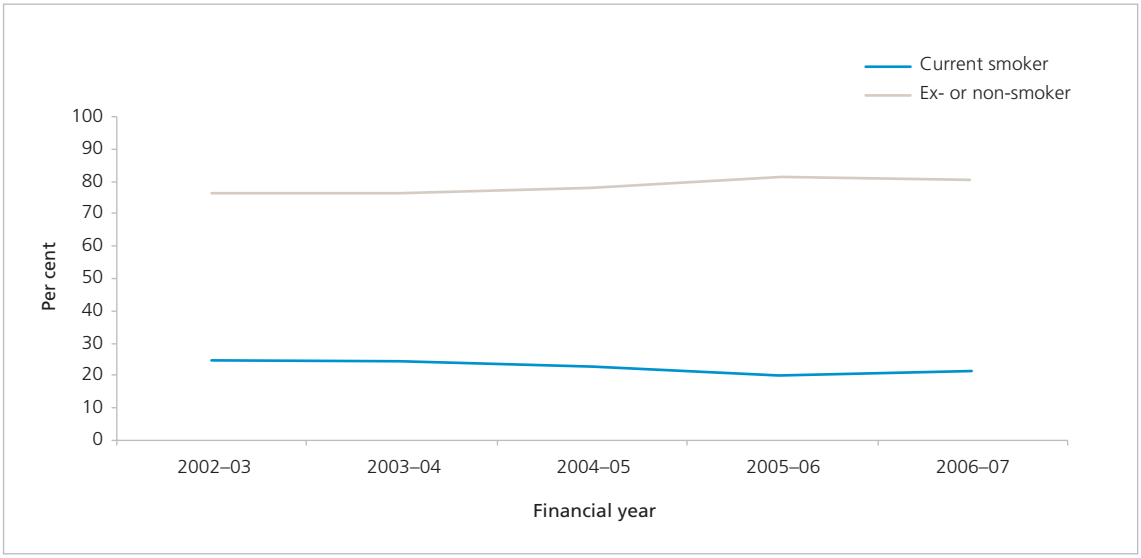
Risk factor	Age group							
	16–19	20–29	30–39	40–49	50–59	60–69	70–79	80+
Current Smoker[d]	13.9	29.1	26.1	25.3	19.7	15.1	8.6	4.0
Fewer than 5 serves of vegetables per day[b]	95.2	92.0	91.8	90.8	88.5	88.5	89.1	95.1
Fewer than 2 serves of fruit per day[b]	54.5	62.6	63.9	62.3	54.0	50.4	50.3	54.7
Short-term — risky / high risk alcohol[a]	23.3	26.2	23.3	29.4	32.0	34.3	31.3	27.3
Long-term — risky / high risk alcohol[a]	2.0	4.7	3.7	4.7	4.1	3.7	2.6	0.7
Overweight or obese[c]	23.3	44.0	52.8	65.8	66.6	65.3	59.0	39.4
Underweight[c]	7.1	4.1	2.5	1.0	0.7	0.7	1.3	5.9
Insufficient activity / no activity[a]	28.6	31.9	47.9	45.7	50.6	49.7	61.3	78.4
High blood pressure[a]	0.2	0.6	3.6	9.1	23.1	38.4	53.1	56.2
High cholesterol[a]	0.4	1.3	3.5	7.7	21.1	31.6	39.2	29.8

Note: [a] 16+ years; [b] 19+ years; [c] 18+ years; [d] 15+ years
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2].
The Cancer Council South Australia, SA Health Omnibus Survey (Current smoker).

4.1 Smoking

The results of the 2006–07 Health Omnibus Survey indicate that 20.7 per cent of respondents aged 15+ years self-reported being current smokers. Males (24.5 per cent) were significantly more likely than females (17.2 per cent) to report being current smokers.

Graph 4.1.1 Prevalence of current smoking, 15+ years



	2002–03	2003–04	2004–05	2005–06	2006–07
Current smoker	24.1	23.6	21.9	19.1	20.7
Ex- or non-smoker	75.9	76.4	78.1	80.9	79.3

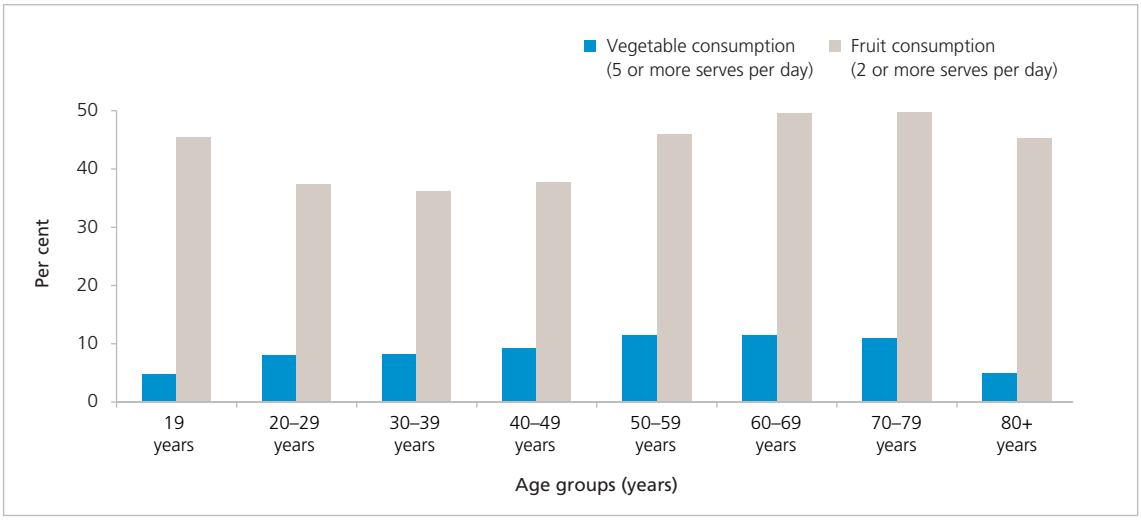
Source: The Cancer Council South Australia, SA Health Omnibus Survey, 15+ years.

The 2004–05 National Health Survey produced by the Australian Bureau of Statistics (ABS) shows that the percentage of current smokers in South Australia aged 18+ years was 22.5 per cent compared to 23.2 per cent nationally.[15]

4.2 Diet and nutrition

The results of the 2006–07 SAMSS indicate that 9.3 per cent of respondents aged 19+ years were eating the recommended (five) serves of vegetables per day. People aged 80+ years were more likely to be consuming fewer vegetables than were people in other age groups. Males (92.7 per cent) were eating fewer vegetables than were females (88.7 per cent).

Graph 4.2.1 Fruit and vegetable consumption by age groups, 19+ years, South Australia

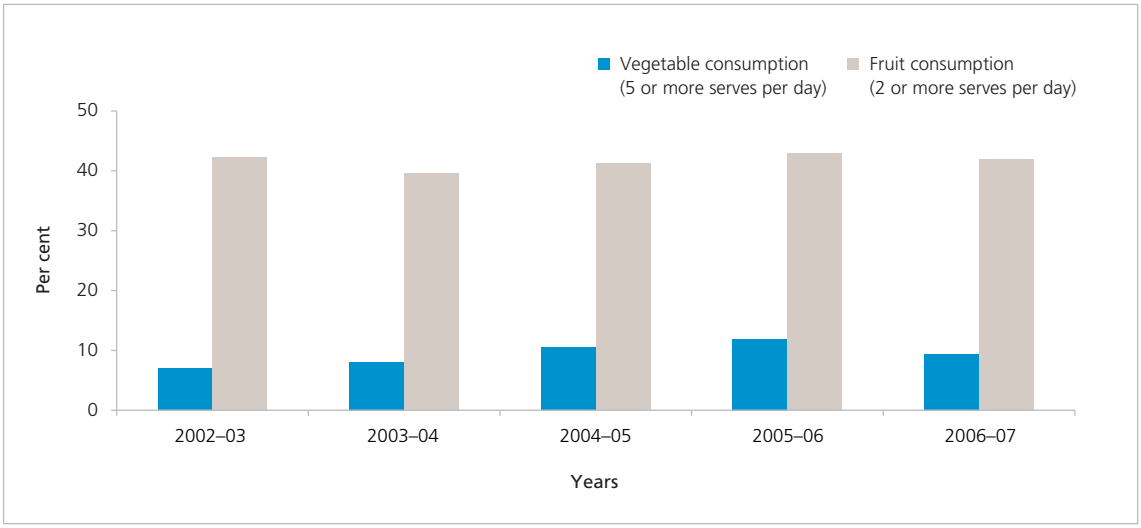


Note: Adequate consumption of vegetables was based on NH&MRC guidelines for the recommended daily intake of vegetables according to age.[3,4] Adequate consumption of fruit was based on NH&MRC guidelines for the recommended daily intake of fruit according to age.[3,4]
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2], 19+ years.

Respondents in the 50–59 and 60–69 age groups were marginally better with their vegetable intake than were other age groups. The younger and more elderly were the lowest consumers of vegetables.

Just over 40 (41.9) per cent of respondents aged 19+ years were consuming the recommended two fruit serves per day, according to the 2006–07 SAMSS. Further breakdowns by age suggest that people aged 20–49 years were significantly more likely to eat less than the recommended daily intake of fruit, whereas higher consumption levels were observed for older people (50+ years). Males (65.2 per cent) were significantly more likely than were females (51.3 per cent) to not consume the recommended serves of fruit per day.

Graph 4.2.2 Fruit and vegetable consumption, 19+ years, South Australia



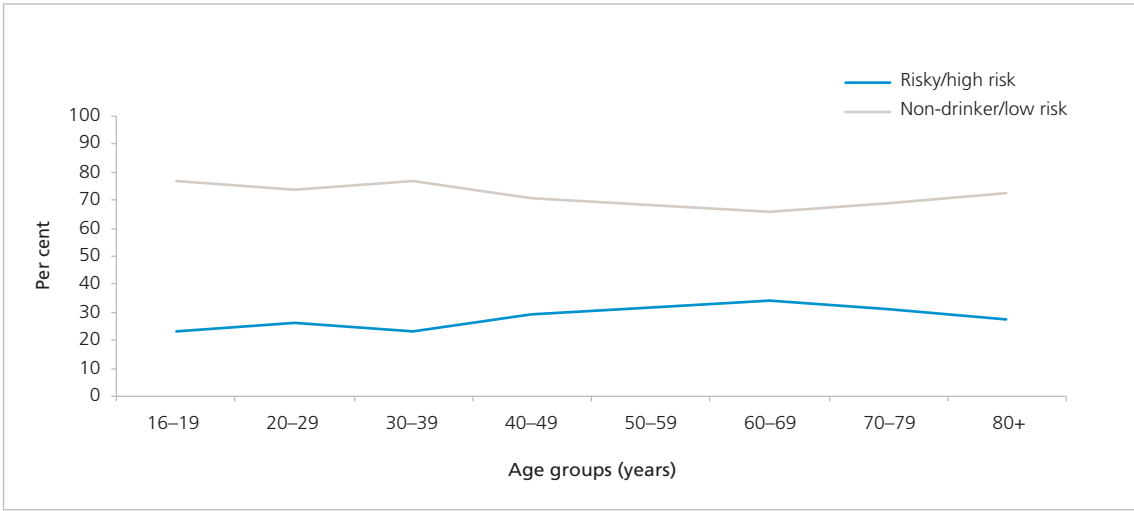
Note: Adequate consumption of vegetables was based on NH&MRC guidelines for the recommended daily intake of vegetables according to age.[3,4] Adequate consumption of fruit was based on NH&MRC guidelines for the recommended daily intake of fruit according to age.[3,4]
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2], 19+ years.

The proportion of adults (aged 19+ years) in South Australia consuming fewer than the recommended two serves of fruit per day has changed slightly over time. A smaller proportion of people were consuming the recommended serves of fruit in 2003–04 (39.6 per cent), compared to 42.9 per cent in 2005–06.

4.3 Alcohol abuse

The results of the 2006–07 SAMSS indicate that 28.4 per cent of respondents aged 16+ years were classified as being at risk of harm from alcohol in the short-term. People aged 50–69 years were significantly more likely to be classified as at risk than were people in other age groups. Males (34.3 per cent) were more likely than females (22.8 per cent) to be classified as at risk of harm from alcohol in the short-term.

Graph 4.3.1 Prevalence of short-term alcohol risk, by age groups, 16+ years



Note: Calculations were based on an Australian Standard Drink and according to NH&MRC guidelines[5] and World Health Organization's International Guide for Monitoring Alcohol Consumption and Related Harm[6].
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2], 16+ years.

The results of the 2006–07 SAMSS indicate that 3.7 per cent of respondents aged 16+ years were at risk of harm from alcohol in the long term. People aged 40–49 years were more likely to be at risk of harm from alcohol in the long term, while people aged 16–19 years, or 80+ years were significantly less likely to be at risk of harm from alcohol in the long-term. Males (4.3 per cent) reported higher levels of alcohol intake than did females (3.1 per cent), predisposing themselves to long-term harm.

The proportion of adults (aged 16+ years) in South Australia at risk of harm from alcohol in the long-term has remained consistent over the years. There also have not been any significant differences in the proportion of males and females at risk of harm from alcohol in the long-term.

Table 4.3.1 Prevalence of long-term alcohol risk by age groups, 16+ years

	16–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years	80+ years
Per cent risky/high risk	2.0	4.7	3.7	4.7	4.1	3.7	2.6	0.7
Per cent non-drinker/low risk	98.0	95.3	96.3	95.3	95.9	96.3	97.4	99.3

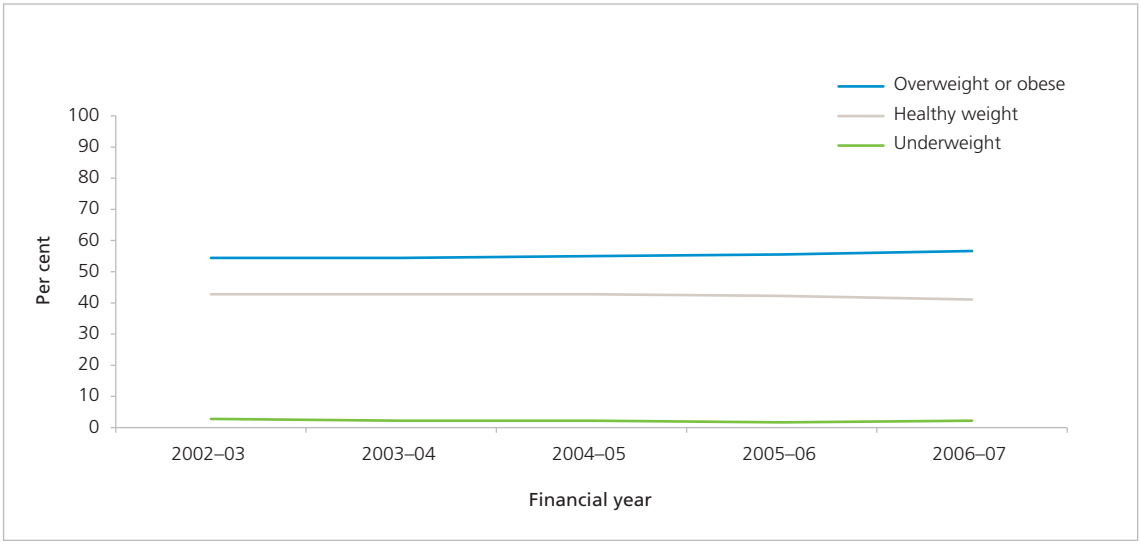
Note: Calculations were based on an Australian Standard Drink and according to NH&MRC guidelines[5] and World Health Organization's International Guide for Monitoring Alcohol Consumption and Related Harm[6].
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2], 16+ years.

The 2004–05 ABS National Health Survey states that the 14.5 per cent of South Australians aged 18+ years were at risk or at high risk of harm from alcohol, compared to 13.5 per cent nationally.[15]

4.4 Overweight and obesity

The proportion of adults aged 18+ years in South Australia classified as overweight or obese according to body mass index (BMI) has increased slightly in recent years based on indicative data from SAMSS.

Graph 4.4.1 Prevalence of overweight and obesity, 18+ years



	2002–03	2003–04	2004–05	2005–06	2006–07
Overweight or obese	54.5	54.6	55.1	55.7	56.7
Healthy weight	43.0	42.9	42.7	42.5	41.5
Underweight	2.5	2.4	2.2	1.8	2.2

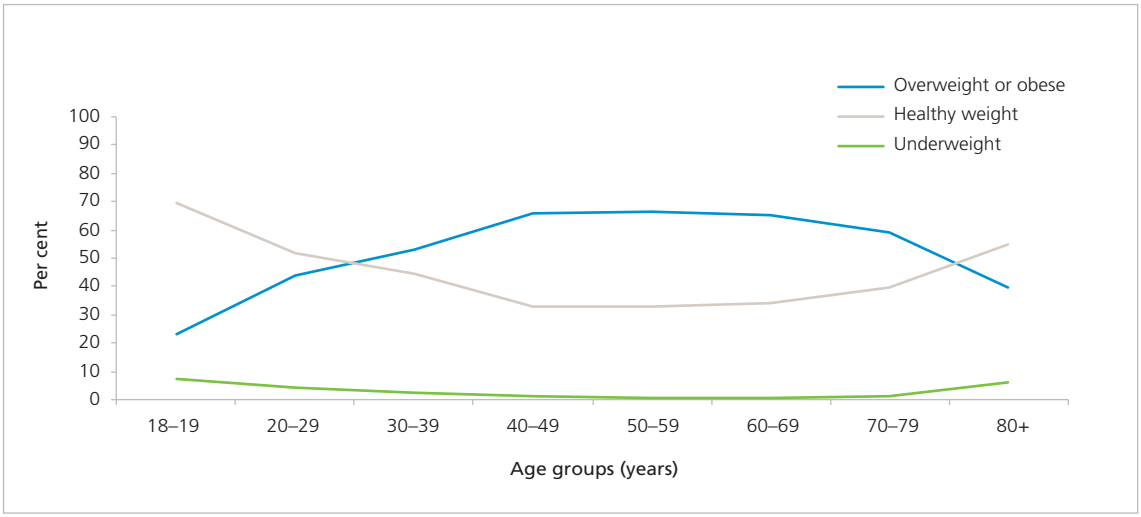
Note: Self-reported height and weight measurements were used to determine categories of body mass index (BMI) using criteria and guidelines from the World Health Organisation[7].
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2], 18+ years.

South Australia's Strategic Plan[8] Target T2.2 Healthy Weight aims to increase by 10 percentage points, by 2014, the proportion of South Australians 18+ years with healthy weight. Just over 40 per cent (41.5) of respondents aged 18+ years in the SAMSS for 2006–07 were classified in the healthy weight range according to BMI.

The 2006–07 SAMSS results indicate that 56.7 per cent of respondents were classified as overweight or obese. Males (64.8 per cent) and people aged 40–69 years were significantly more likely to be classified as overweight or obese than were people in other age groups. These trends were consistent over time.

The ABS National Health Survey for 2004–05 states the percentage of South Australians aged 18+ years who are overweight or obese is 49.7 per cent compared to 49.3 per cent nationally.[15]

Graph 4.4.2 Prevalence of overweight or obesity, by age groups, 18+ years



	18–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years	80+ years
Overweight or obese	23.3	44.0	52.8	65.8	66.6	65.3	59.0	39.4
Healthy weight	69.6	51.9	44.7	33.2	32.7	34.0	39.6	54.7
Underweight	7.1	4.1	2.5	1.0	0.7	0.7	1.3	5.9

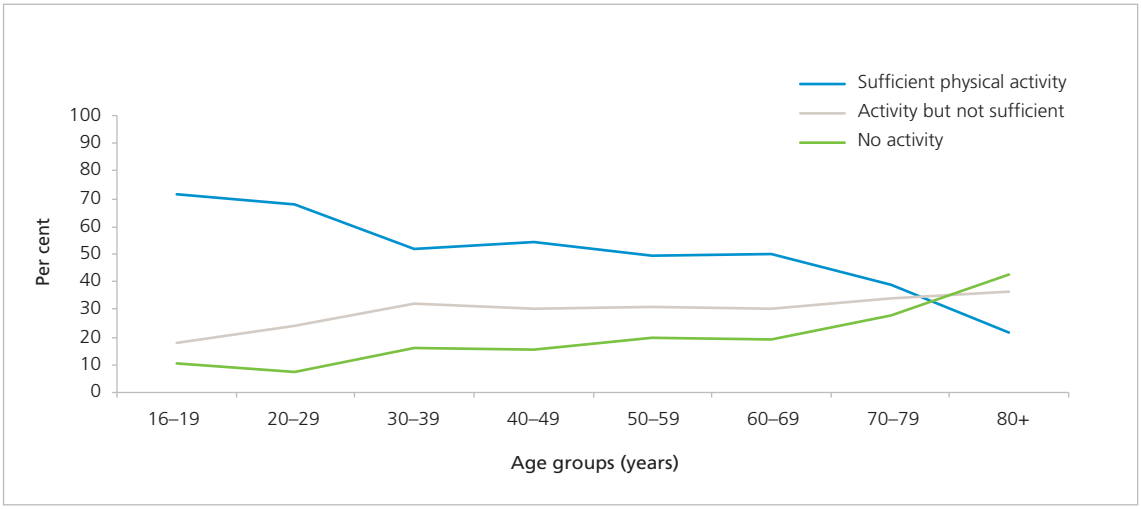
Note: Self-reported height and weight measurements were used to determine categories of body mass index (BMI) using criteria and guidelines from the World Health Organisation[7].
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2], 18+ years.

4.5 Physical activity/inactivity

The proportion of adults (aged 16+ years) in South Australia undertaking sufficient levels of physical activity has increased in 2006–07 (52.9 per cent). A lower proportion of people was undertaking sufficient levels of activity in 2004–05 (49.8 per cent). The goal of *South Australia's Strategic Plan* Target T2.3 Sport and Recreation is to exceed the Australian average for participation in sport and physical activity by 2014.

The results of the 2006–07 SAMSS indicate that 52.9 per cent of all respondents were undertaking sufficient levels of physical activity. Younger people (aged 16–29 years) were significantly more likely to be undertaking sufficient levels of physical activity than older people. Males (55.5 per cent) were more likely than were females (51.3 per cent) to be undertaking sufficient levels of physical activity.

Graph 4.5.1 Prevalence of sufficient physical activity by age groups, 16+ years, 2006–07



	16–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years	80+ years
Sufficient activity	71.4	68.1	52.0	54.3	49.4	50.3	38.6	21.6
Activity but not sufficient	18.2	24.3	32.1	30.5	30.9	30.4	33.8	36.1
No activity	10.4	7.6	15.8	15.2	19.7	19.3	27.5	42.3

Note: Physical activity questions were adopted from the Active Australia Survey[9]. Sufficient Physical Activity is defined by the Australian Institute of Health and Welfare as '… the completion of 150 minutes of walking, moderate or vigorous physical activity (when vigorous is weighted by a factor of two to account for its greater intensity) in the past week.'[10]

Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2], 16+ years.

The 2004–05 ABS National Health Survey shows the percentage of people in South Australia aged 18+ years who exercise at moderate or high levels is the lowest in the country at 27.1 per cent; levels were 29.6 per cent nationally.[15]

4.6 High blood pressure

The results of the 2006–07 SAMSS indicate that close to one-fifth (18.1 per cent) of respondents aged 16+ years self-reported having current high blood pressure. There was no significant difference between males and females, but more older people (aged 50+ years) reported having current high blood pressure than younger people.

Table 4.6.1 Prevalence of current high blood pressure, 16+ years

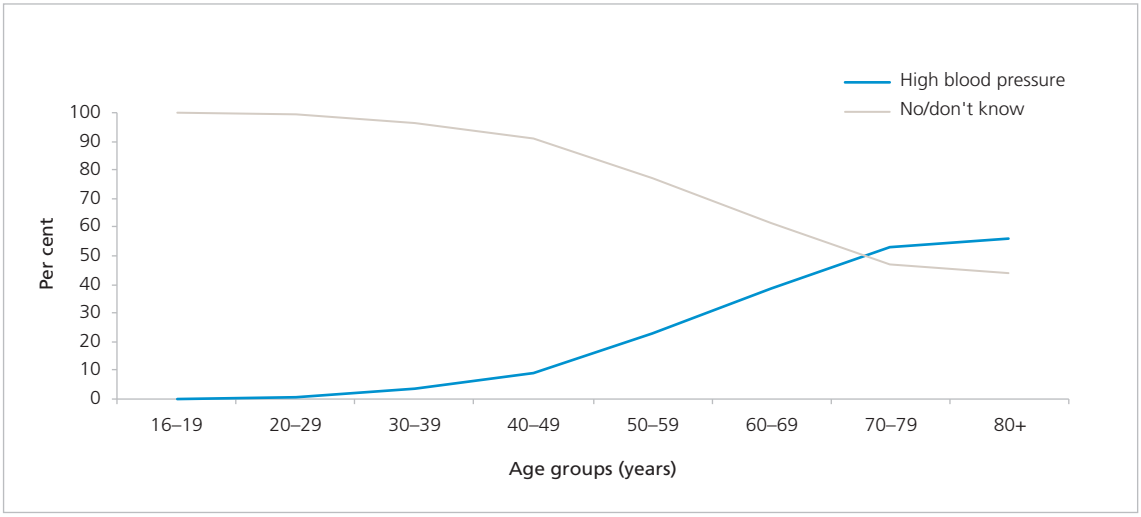
	2003–04	2004–05	2005–06	2006–07
High blood pressure	17.1	18.6	18.1	18.1
No/don't know	82.9	81.4	81.9	81.9

Note: High blood pressure is defined as respondents having been told by a doctor that they have current high blood pressure and/or they are on antihypertensive medication.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2], 16+ years.

The proportion of adults aged 16+ years in South Australia with current high blood pressure has not changed in recent years. The prevalence (18.1 per cent) of current high blood pressure (for people aged 16+ years) in South Australia in 2006–07 was not significantly different compared with prevalence estimates (17.1 per cent) in 2003–04.

The proportions of males and females in South Australia with high blood pressure have remained consistent in recent years, although there were significant differences in the proportion of people reporting high blood pressure by age group over time. Respondents aged 50+ years were more likely in all years to report having high blood pressure than were younger respondents.

Graph 4.6.1 Prevalence of current high blood pressure by age groups, 16+ years, 2006–07



	16–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years	80+ years
High blood pressure	0.2	0.6	3.6	9.1	23.1	38.4	53.1	56.2
No/don't know	99.8	99.4	96.4	90.9	76.9	61.6	46.9	43.8

Note: High blood pressure is defined as respondents having been told by a doctor that they have current high blood pressure and/or they are on antihypertensive medication.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2], 16+ years.

4.7 High blood cholesterol

The results of the 2006–07 SAMSS indicate that 14.3 per cent of respondents aged 16+ years self-reported having current high cholesterol. There was no significant difference between males and females, but older people (aged 50+ years) were significantly more likely to report having current high cholesterol than were younger people.

Table 4.7.1 Prevalence of current high cholesterol, 16+ years

	2003–04	2004–05	2005–06	2006–07
High cholesterol	13.2	14.3	13.5	14.3
No/don't know	86.8	85.7	86.5	85.7

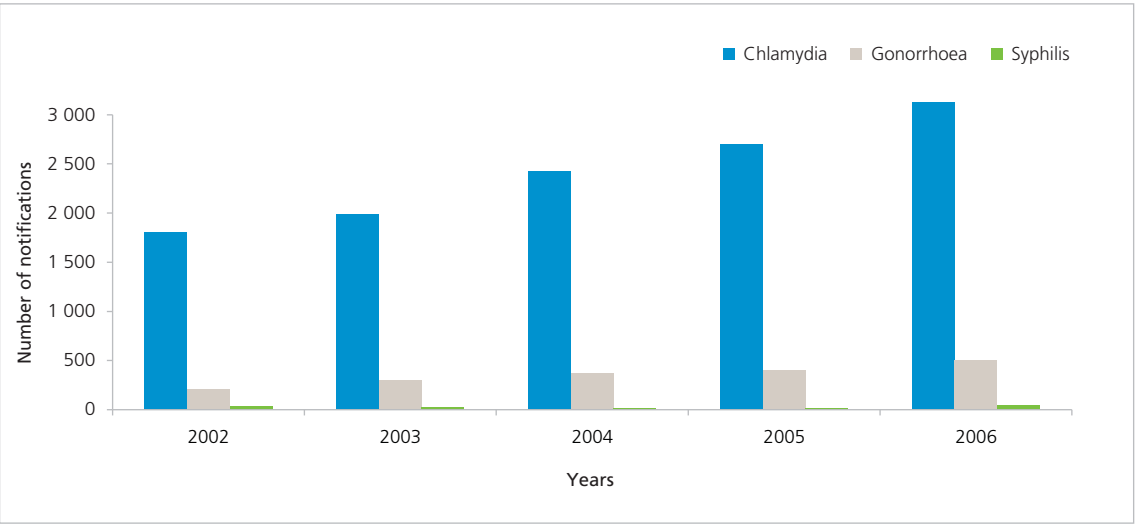
Note: High cholesterol is defined as respondents having been told by a doctor that they have current high cholesterol and/or they are on medication for high cholesterol.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS)[2], 16+ years.

The proportion of adults aged 16+ years in South Australia with high cholesterol has not changed in recent years. The proportions of males and females in South Australia with high cholesterol also have remained consistent over time.

4.8 Sexually transmitted diseases

Sexually transmitted diseases (STDs) are infections that can be transmitted from person-to-person through direct body contact or contact with infected body fluids.[13]

Graph 4.8.1 Sexually transmitted diseases, South Australia



Source: STD Services.[12]

4.8.1 Chlamydia

There has been an increase in the number of cases of chlamydia reported each year, following the introduction of chlamydial tests in the mid-1900s.[12]

Notifications of chlamydia infections (in both males and females) have increased quite considerably between calendar year 2002 (1 806 cases) and calendar year 2006 (3 123 cases).[12]

4.8.2 Gonorrhoea

The number of gonococcal infections reported annually in South Australia has increased noticeably between calendar year 2002 (208 cases) and calendar year 2006 (503 cases).[12] This increase is due mainly to the increased numbers of homosexual men in the state, as well as to the introduction of screening programs within remote Aboriginal communities.

Three-hundred-and-nine (61 per cent) of the 503 medical notifications reported in 2006 were for males and 194 (39 per cent) for females.[12]

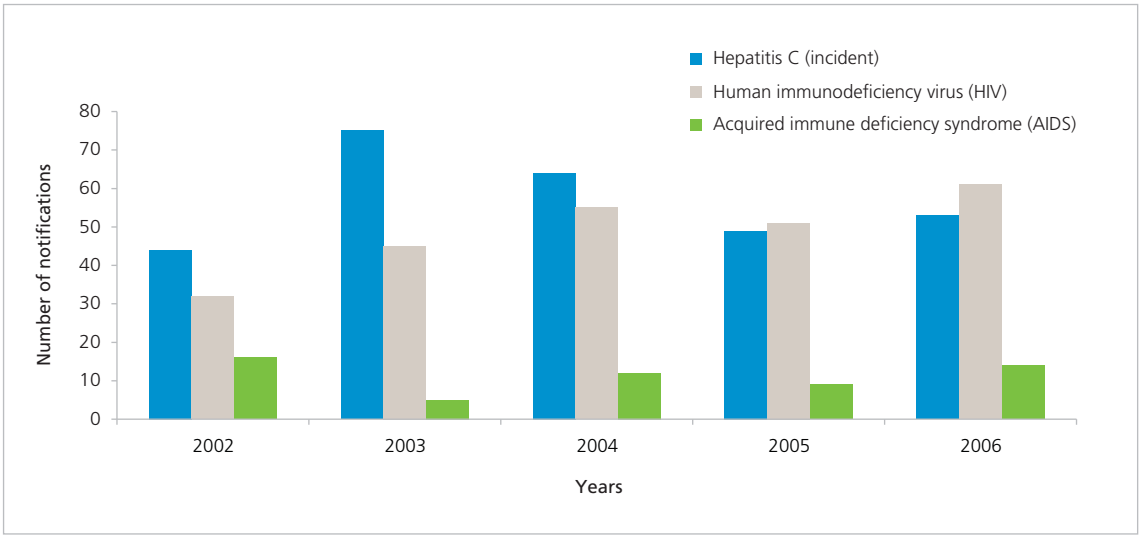
4.8.3 Syphilis

The incidence of infectious syphilis notifications jumped in calendar year 2006 (42 cases), compared with the previous year (13 cases). The increase was due predominantly to an increase in cases in homosexual men. Thirty-five of the 42 cases were males and seven were females.[12]

4.9 Blood-borne diseases

Blood-borne diseases are pathogens carried in, and spread from one person to another through the exchange of contaminated blood.[14]

Graph 4.9.1 Blood-borne diseases, South Australia



Note: Newly diagnosed cases only.
Includes individuals whose HIV infection may have been diagnosed interstate.
Source: STD Services.[12]

4.9.1 Human immunodeficiency virus (HIV)/Acquired immune deficiency syndrome (AIDS)

South Australia remains a state with a relatively small HIV/AIDS epidemic compared to the Eastern states of Australia, but the changes that have occurred interstate have been seen in South Australia. New infections — mainly through male-to-male sex — have increased again since 2002 after reaching a low plateau in the early- to mid-1990s. There has been a steady increase in diagnosed HIV infections from 32 in calendar year 2002 to 61 in calendar year 2006, of which 85 per cent were for males.[12] The availability and success of treatments means that more people living with HIV/AIDS are living longer and healthier lives, and rates of AIDS deaths are declining.

Increasing new infections and decreasing death rates result in growing numbers of people living with HIV/AIDS in South Australia. A growing number of long-term survivors now present with HIV-related brain injuries and require very high-level and intensive individual care and support.

4.9.2 Hepatitis C Virus (HCV)

It is estimated that the peak of the hepatitis C epidemic in South Australia occurred about 15–20 years ago, long before its existence was known. An overall estimate of 15 000–17 000 people in South Australia live with HCV infection (1–1.5 per cent of the population). The number of HCV-incident cases (infections acquired in past 12 months) has slightly increased over the years, Thirty-eight (71 per cent) of the 53 cases in 2006 were for males, while 15 (29 per cent) were for females.[12] Efforts to increase testing among populations most at risk of having contracted HCV have resulted in declining numbers of notifications of existing 'old' infections. New HCV infections increased from 44 cases in calendar year 2002 to 53 cases in calendar year 2006, and were acquired almost exclusively through sharing injecting equipment.

Hepatitis C is a slowly progressing disease; the long-term health effects are only now beginning to have an impact on the health system. Only a proportion of people infected with hepatitis C will develop severe long-term liver damage (including cirrhosis and hepatocellular carcinoma); however, the numbers are significant and already make up the majority of people in need of liver transplants. A treatment for hepatitis C is now available, but its success rate (between 50 and 80 per cent) depends on the virus type.

4.10 Environment

A healthy environment is fundamental to healthy living. It is well understood that the condition of the physical environment is a key determinant of health.

The Environmental Protection Authority (EPA) produces a State of the Environment Report at least every five years pursuant to its statutory obligations. The EPA noted in its most recent report (2003) several environmental challenges facing South Australia. The report stated:

On the whole the news is not good. Many aspects of the environment have not improved significantly and in some cases have deteriorated. Resource consumption is rising as is the amount of waste we generate. Around one tonne of solid waste per person went to landfill in South Australia in 2002, an increase of 14 per cent over 1998 levels. Our energy consumption is rising each year; we are using water resources unsustainably; and our greenhouse gas emissions continue to rise.[8]

Since that report, however, more recent trends have shown improvements. The *Recycling Activity in South Australia Report*[8], for example, noted that total waste per capita going to landfill had fallen to 678 kilos by 2005–06. The authors also noted that South Australians' recycling activity was above the national average.

The greenhouse gas impacts of greater recycling efforts also was noted in the report. South Australia's recycling efforts in 2005–06 prevented the equivalent of approximately 1.24 million tonnes of CO_2 entering the atmosphere, up from 1.16 million in 2004–05, because of substituting secondary-use materials for virgin materials. This increase is equivalent to about 21 per cent of the annual CO_2 emissions from the entire South Australian transport sector (2002 transport sector figures), and equates to taking 287 500 passenger cars off the road.

The EPA has identified environmental goals for South Australia which include:

- clean and healthy air
- water that meets agreed environmental values
- communities protected from unacceptable noise
- sustainable land use.

Further information on progress towards these goals can be found in the EPA's annual report.

Other health-related environmental factors of note include safe drinking water supplies, safe food supply, local environmental health management, mosquito management and waste water management.

4.10.1 Drinking water

Water quality in drinking water supplies is monitored through two mechanisms: regular reporting and incident reporting in accord with criteria established through the Water/Wastewater Incident Notification and Communication Protocol. SA Water provides routine monthly reports summarising compliance data for all water supplies. Compliance is measured against guideline values provided in the Australian Drinking Water Guidelines. Results are summarised in the following figures.

Table 4.10.1 Customer tap samples free from E. coli

	2004–05	2005–06
Metropolitan	99.7%	100%
Country	99.6%	99.9%

Table 4.10.2 Per cent of samples compliant with Australian Drinking Water Guidelines' health parameters

	2004–05	2005–06
Metropolitan	100%	100%
Country	99.9%	99.8%

4.10.2 Food safety

The Communicable Disease Control Branch of SA Health conducts epidemiological investigations into food-borne disease outbreaks, in conjunction with local government Environmental Health Officers and SA Health's Food Policy and Programs Branch. The Food Policy and Programs Branch and local government Environmental Health Officers provide food technology and environmental investigation expertise, and perform environmental and food premise investigations. Primary Industry and Resources South Australia (PIRSA) staff also assist in trace back investigations, which is the process of determining the source or point of food contamination.

Epidemiological and environmental information including reports of on-site visits to premises, food history questionnaires of cases, and laboratory results of stool and food samples is collated and used to provide a descriptive and analytical picture of the outbreak. Epidemiological analysis may demonstrate a statistical association between illness and the consumption of a particular food item. Microbiological evidence can suggest an association when a very similar or identical microorganism is found in both cases and a food vehicle suspected on epidemiological grounds. The specific food vehicle or source of an outbreak is difficult to identify; often there is no remaining food at the start of the investigation as food may have been consumed from anywhere between one day and up to 90 days before the illness. Faecal samples from affected persons, furthermore, are not always provided for analysis.

The investigations undertaken in the period from July 2005 to June 2006 are summarised in the figure below.

Table 4.10.3 Summary of food-borne or suspected food-borne disease in South Australia, during the period from July 2005 to June 2006

Number	Month of outbreak	Organism	People at risk	Location	Number ill	Cases positive	Transmission mode	Evidence
1	October 2005	L.monocytogenes serotype 01	Unknown	Health care facilities and in the community	4	3	Cold meats	D and M
2	November 2005	Campylobacter	Unknown	School	36	14	Unknown	D and S
3	December 2005	Norovirus	Unknown	Restaurant	22	7	Unknown	D
4	January 2006	STM 108	50	Private residence	7	3	Home-made dessert topping	D and M
5	February 2006	Salmonella Anatum	Unknown	Restaurant	12	12	Unknown	D
6	May 2006	STM 108	Unknown	Community	23	23	Ravioli	D, S and M
7	June 2006	STM 9	Unknown	Hotel/restaurant	4	4	Vegetable and cheese salad	D and S

These data refer to outbreaks where investigations have been substantially completed. Data are subject to revision.

M (microbiological): identification of an organism of the same type from cases and the suspect vehicle, vehicle ingredient(s), detection of toxin in faeces or food.

D (descriptive): other evidence, usually descriptive or local investigations indicating the suspect vehicle or mode of transmission.

S (statistical): a significant statistical association between consumption of the suspect vehicle(s) and a case of STM PT – Salmonella Typhimurium phage type.

Source: SA Health, *Food Act Report.* Year ending 30 June 2006.

4.10.3 Insanitary conditions

The Public and Environmental Health Act 1987 (the Act) is the centrepiece of public health legislation in South Australia. The Act is administered jointly by the Department of Health and local councils, who assume the role of the public health authority within their jurisdictions. The Act consists of two key operational components, the first relating to sanitation and the second relating to control of notifiable diseases.

The Act confers a statutory obligation on local councils to promote proper standards of public and environmental health within their areas. The Act provides that premises are in an insanitary condition if:

- a) the condition of the premises gives rise to a risk to health; or
- b) the premises are so filthy or neglected that there is a risk of infestation by rodents or other pests; or
- c) the condition of the premises is such as to cause justified offence to the owner of any land in the vicinity; or
- d) offensive material or odours are emitted from the premises; or
- e) the premises are for some other reason justifiably declared by the authority to be in an insanitary condition.

Local government reported the following activities related to insanitary conditions under the Act in the 2005–06 period:

- 1 671 complaints were received by 43 councils
- 70 notices were served by 24 councils requiring remediation of the insanitary condition
- 5 expiation notices were issued.

The Department of Health through the Applied Environmental Health Branch provides support to local government in administering the Act as it relates to insanitary conditions. The Public and Environmental Health Council hears appeals of notices served under the Act.

4.10.4 Mosquito management

SA Health is involved in a number of mosquito management initiatives to reduce the incidence of mosquito-borne disease and mosquito-related nuisance. Mosquito-borne Ross River and Barmah Forest arboviruses (RRV and BFV respectively) notifications in South Australia over previous years suggest a general pattern of epidemics occurring every three to four years. RRV and BFV notifications over summer 2005–06 were the first in epidemic proportion since 2000–01. This increase emphasises the importance of a combination of surveillance, control of mosquito breeding sites and effective community education to reduce mosquito-related public health risks.

4.10.5 Waste water management

SA Health — through the Waste Water Management Section (Applied Environmental Health Branch) together with local government — administers matters relating to wastewater for the 400 000 South Australians not connected to the SA Water sewer infrastructure.

South Australia presently has over 160 septic tank effluent disposal (STED) schemes and a small number of private sewers. SA Health assesses all installation applications for these schemes, as well as extensions to existing systems. The section processed over 40 applications in the year 2005–06, for new collection, treatment and reuse schemes to serve entire towns as well as extensions to existing communal systems.

4.10.6 Recycled water

Approximately 100 000 megalitres of sewage are collected and treated each year by SA Water. Just over 18 (18.1) per cent of metropolitan and 17.2 per cent of rural treated sewage was recycled in 2005–06. Recycled water schemes are regulated under the Public and Environmental Health (Waste Control) Regulations. SA Health provides formal approval for recycled water schemes involving treated sewage and also a consultancy for proponents, and undertakes risk assessments, identifies risk management options and requirements, and issues approvals. The largest schemes either are operated or supplied with recycled water from the SA Water Waste Water treatment plants at Bolivar, Glenelg and Christies Beach. Recycled water quality is monitored — as is the quality of drinking water supplies — through routine monthly reports and incident reporting. SA Water provides routine monthly reports on recycled water quality to SA Health.

4.11 Immunisation rates

The Vaccine Distribution Centre, within the South Australian Immunisation Coordination Unit, distributed a total of 662 619 doses of vaccine in the period June 2005 to June 2006 for all vaccination programs, including the *Childhood Immunisation Program*.

Four Commonwealth-funded vaccines (diphtheria, tetanus, whooping cough and hepatitis B) are offered annually in South Australia to Year 8 students through local government. South Australia has the highest vaccine coverage rates in Australia for this age group. Eighty-six (86) per cent of Year 8 students received a booster vaccine for diphtheria, tetanus and whooping cough in 2005 and are fully immunised for hepatitis B. Coverage for hepatitis B for the same group in Victoria, by comparison, is 56 per cent and, in New South Wales, 48 per cent. Queensland has no school program in place and can only estimate coverage, believed to be around 30 per cent.

4.11.1 National Influenza Vaccination Program

Over 220 000 doses (222 130) of influenza vaccine were distributed in 2005–06, an increase on 2004–05. Almost 84 per cent of people aged 65+ years received annual influenza vaccination. There was a significant increase in health care worker influenza vaccine coverage following the start of the Health Care Worker Influenza Program in 2006, with 24 852 doses distributed — an increase of 9 196 doses over the previous year.

4.11.2 Childhood Immunisation Program

South Australia maintained immunisation coverage above 90 per cent for children aged 12–15 months and 24–27 months (that is, 91 per cent and 92.2 per cent respectively), with both cohorts being at or above the Australian level of coverage. The four-year-old coverage in South Australia is lower at 82.8 per cent, despite increased promotion by SA Health in collaboration with Local Immunisation Coordinators in the Divisions of General Practice. This lower coverage also is evident in the Australian national coverage of 84 per cent. The childhood program was extended in November 2005 to include inactivated polio delivered in combination vaccines, the introduction of varicella vaccine at 18 months of age, and for Indigenous children, hepatitis A at 18 months and two-years-of-age.

4.11.3 National Meningococcal C Vaccination Program

The Australian Childhood Immunisation Register indicated coverage for meningococcal C vaccine in June 2006 in South Australia was 84.7 per cent for 1–5 year old children compared to the Australian coverage of 83.9 per cent. Nearly 38 000 doses (37 857) of meningococcal C vaccine were distributed. The meningococcal C program, originally due for completion in June 2006, was extended to June 2007. The collaborative meningococcal C program offered by local government through schools was completed at the end of 2005.

4.11.4 National Pneumococcal Vaccination Program for Older Australians

The Vaccine Distribution Centre distributed 41 283 doses of pneumococcal vaccine for older Australians, with funding from the Australian Government.

4.11.5 National Indigenous Vaccination Programs

South Australia's immunisation coverage for Aboriginal and Torres Strait Islander children aged 12–15 months and 24–27 months was 78.6 per cent and 87.3 per cent respectively in June 2006. This coverage is low compared to the overall coverage.

4.11.6 School Immunisation Program

The Vaccine Distribution Centre distributed 32 220 doses of adult hepatitis B and 10 602 doses of diphtheria, tetanus and whooping cough dTpa (Boostrix) for the School Immunisation Program. The 2005–06 immunisation coverage for both hepatitis B and dTpa (Boostrix) was 86 per cent. Varicella vaccine was included in the schools program at the beginning of 2006.

4.12 Screening

4.12.1 BreastScreen SA

BreastScreen SA provides free screening mammograms (breast x-rays) at two-yearly intervals, primarily for women aged 50–69, with the aim of reducing deaths from breast cancer in this target group, through early detection of the disease. Women over the age of 40 years are eligible to be screened. There were 865 447 screening mammograms provided from 1 July 1988 to 30 June 2006 to 232 764 individual women across South Australia. A total of 4 472 breast cancers were diagnosed by BreastScreen SA from 1 January 1989 to 31 December 2005.

Key statistics for 2005–06

- 69 107 screening mammograms were performed
- 4 223 new clients in the target age group were screened
- 77.6 per cent of the total number of women screened were in the target age group 50–69
- 28.9 per cent of the total screening mammograms provided were performed in the three mobile screening units
- 2.7 per cent (1 900) of women screened were recalled for assessment of a screen-detected breast abnormality
- waiting times reduced from screening to assessment since March 2006, exceeding national targets
- 567 fine needle aspiration biopsies and 372 core biopsies were performed.

4.12.2 The South Australian Cervix Screening Program

One of the main tasks of the SA Cervix Screening Program is to encourage women to have a Pap smear every two years in line with the national policy. Recruitment activities target the general population of women aged 18–70 years and sub-groups of the population known to be under-represented in program participation; these include women from low socioeconomic areas, Aboriginal and Torres Strait Islander women, and women from some culturally and linguistically diverse (CALD) communities.

The participation rate of women screened for cervical cancer in the target population (aged 20–69 years) was 66 per cent in 2004–05, with the projected target for the current reporting period (2005–06) being 68 per cent. The incidence of cervix cancer has fallen approximately 40 per cent over the past 25 years with a 69 per cent reduction in the mortality rate for the same period, according to SA Cancer Registry data.

4.13 Services and initiatives

4.13.1 Alcohol

There are a variety of services in South Australia aimed at reducing the burden of alcohol and other substance abuse in the community. Some of the services provided include rehabilitation, withdrawal, detoxification, counselling and case management services, as well as education, information and referral services.

Drug and Alcohol Services South Australia (DASSA) has responsibility for running the *Alcohol. Go Easy* campaign. This campaign is an alcohol education program that aims to reduce problems associated with harmful alcohol consumption in the community. The campaign's objectives are to: decrease community acceptance of harmful alcohol consumption and related problems, and to increase the ability of communities to reduce harmful alcohol consumption and provide support for safer drinking environments. Communities need to work together to achieve long-term prevention of alcohol-related harm. The campaign is likely to be more effective if it is supported by the community. An important part of this program will be to help communities by providing information about strategies that work to reduce problems associated with harmful alcohol consumption. The campaign is not about stopping people from drinking alcohol altogether; rather, it is about reducing the problems that arise from the harmful consumption of alcohol.

4.13.2 Tobacco

The South Australian Government has initiated the South Australian Tobacco Strategy. The goal of the strategy is to improve the health of South Australians by reducing the harm caused by tobacco smoking, especially among high prevalence groups. The government has funded targeted public awareness campaigns to achieve this, made changes to legislation (including reducing the number of public places where people can legally smoke) and provided grants for innovative approaches to help reduce tobacco consumption in communities with a high prevalence of smoking. Particular efforts will focus on reducing harm caused by tobacco in three priority groups: young people; people living with mental illness; and Aboriginal people. Seven strategy areas have been identified for concerted action; these are:

- reduce smoking by addressing the social determinants of health
- strengthen smoke-free legislation, regulations and policies
- strengthen regulation to minimise commercial conduct that promotes tobacco products; advertising and promotion; product toxicity; active surveillance and enforcement
- increase knowledge about the health effects of smoking and community support for tobacco control
- conduct quit promotions led by mass media
- support cessation support and relapse prevention
- undertake research, evaluation and monitoring.

4.13.3 Nutrition and physical activity

The South Australian Government launched the *Eat Well Be Active Strategy (2006–2010)* in March 2006. The strategy aims to improve the health and wellbeing of South Australians by working towards achieving the target identified in *South Australia's Strategic Plan* to reduce the percentage of South Australians who are overweight or obese by 10 per cent within 10 years. The strategy recognises that the goal of *Eat Well Be Active* requires coordinated effort across government and community. It focuses on developing partnerships amongst industry, other government agencies, schools, workplaces and communities, and focuses on prevention and the reduction of inequalities.

Progress was made around a number of strategies for *Eat Well Be Active* in 2006, including:

- mandatory healthy food guidelines were developed to be introduced into all government schools and preschools in 2007
- communities were supported to eat well and be active through *Eat Well Be Active Community Programs* in Murray Bridge and Morphett Vale
- the Premier's *be active Challenge* was developed and introduced for Reception to Year 9 students from 2007
- cycling was encouraged by providing grants to South Australian councils through the State Bicycle Fund to develop bicycle lanes and paths, and by providing on-line maps of Adelaide's Bike*direct* bicycle networks
- bicycle safety was improved through the *State Black Spot Program: Cycling Projects*, the *Arterial Road Bicycle Facilities Improvement Program* and the *Bike Ed Program*, a program conducted in primary schools for 9–12 year-olds that teaches safe bicycle riding
- active modes of transport were promoted, such as walking, cycling and catching public transport, through *TravelSmart*
- community road safety was promoted for children travelling to school, including walking and cycling, through the *Safer and Smarter Route to Schools Program*
- the use of parks that are managed by the Department of Environment and Heritage was encouraged, through the *Healthy Parks Healthy People Program*
- physical activity in workplaces was promoted
- *Fundamental Movement Skills* programs were run for educators to support them in teaching basic skills, such as balancing, running, throwing and catching to young children
- support was provided for parents to encourage children to eat healthy food and engage in physical activity and play
- nutrition in childcare services was improved through the *Start Right Eat Right Childcare Nutrition Award Scheme* for child care services
- women were encouraged and supported to breastfeed their babies
- people were encouraged to eat two serves of fruit and five serves of vegetables a day, through the *Go for 2 and 5*™ campaign
- staff in health care services were supported in promoting healthy eating and physical activity
- training was provided for staff in early years education and childcare services on healthy eating and physical activity
- the community was informed about practical ways to be active through <www.beactive.com.au>.

4.13.4 South Australian Integrated Mosquito Management Strategy

SA Health released the *South Australian Integrated Mosquito Management Strategy (SAIMMS)* in 2007 aimed at promoting and integrating mosquito management practices throughout the state to ensure that these programs are as effective, efficient and environmentally sensitive as possible.

The SAIMMS framework provides a means to encourage ongoing communication and collaborative action between agencies. The framework also identifies a series of guiding principles and provides models to facilitate the balancing of often competing environmental, economic and public health considerations.

One promotional activity under the framework is the *Fight the Bite* campaign. SA Health actively promotes this campaign aimed at encouraging personal and household protection against mosquitoes to prevent the spread of mosquito-borne arbovirus. *Fight the Bite* pamphlets and posters are distributed widely throughout South Australia. The campaign additionally is underpinned by advertisements in the *Sunday Mail* and other local print press.

4.13.5 Screening and immunisation

BreastScreen SA is the fully accredited South Australian component of BreastScreen Australia, the national breast cancer screening program for women without breast cancer symptoms or signs. BreastScreen SA is a part of the Central and Northern Adelaide Health Service and incorporates nine screening clinics including three mobile screening units.

The South Australian Cervix Screening Program is a partner of the National Cervical Screening Program, and aims to reduce the incidence of cancer of the cervix by increasing the proportion of women screened at two-yearly intervals and by promoting high-quality screening and follow-up services.

SA Health works collaboratively with Divisions of General Practice, local government and other immunisation providers to provide a high quality immunisation program for South Australians.

4.13.6 The Cause of the Causes

The seven risk factors stated at the beginning of this chapter do not exist in isolation. They very often interact with each other and, more frequently than not, are experienced in high-risk combinations by individuals. These risk factors similarly themselves are caused by a complex web of determinants in social, environmental and economic conditions that have an impact on the health of individuals and whole communities. These determinants include having access to good housing, clean safe water, safe food, adequate transport, educational opportunities, employment and training, and social supports, and living in well-designed safe suburbs.

South Australia's Strategic Plan (SASP) is designed to be the central strategy of the State Government and the community of South Australia to build a state that is prosperous, environmentally rich, culturally stimulating, offering its citizens every opportunity to live well and succeed. The plan aims across its 98 targets to grow prosperity, improve wellbeing, attain sustainability, foster creativity and innovation, build communities and expand opportunities. SA Health — together with the Department of the Premier and Cabinet — has been working throughout 2007 to apply a 'Health Lens' over the plan. The aim of the *Health Lens* is to help all government agencies identify the health effects of the plan's objectives, how health can be promoted across government, and how potential negative effects can be reduced or eliminated. The aim of the *Health Lens* also has been to identify where a healthier population can contribute to achieving the objectives of *South Australia's Strategic Plan*. This work was greatly assisted by Adelaide's Thinker-in-residence for 2007, Professor Ilona Kickbusch.

4.14 Notes

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5 Mental illness

In this chapter

Summary

- The level of psychological distress in South Australia — as determined by the Kessler Psychological Distress 10 item scale (K10), that measures anxiety and depressive disorders in the general population — has decreased from 10.6 per cent to 9.5 per cent between 2002–03 and 2006–07 for people 16+ years. People in the age groups 16–19 years (12.7 per cent) and 20–29 years (12.8 per cent) were more likely to have higher levels of psychological distress than were other age groups. The proportion of females in South Australia experiencing psychological distress has been consistently higher over time than the proportion of males. Some 14 per cent of people aged 16+ years self-reported having a current doctor-diagnosed mental health condition. The age group in 2006–07 with the highest self-reported diagnosed mental illness was 50–59 years.
- Mental illness accounted for 9.4 per cent of the total burden of disease in South Australia as measured by Disability adjusted life years (DALYs). The DALYs were 8 333 for males and 11 644 for females. The burden of disease was 12.3 per cent if alcohol and substance use illnesses are included; this compares with the national average of 13.3 per cent. The highest ranked burden of disease in the mental health category was depression, which accounted for 35.2 per cent for males and 40.0 per cent for females.
- South Australia in 2006–07 had 16 429 hospital separations for mental health-related illnesses based on the patient's principal diagnosis. This figure represented some 4.2 per cent of all public hospital separations. The most common principal diagnosis for mental health hospital separations for both males and females was depression, while schizophrenia accounted for the most patient days in hospital. Mental health hospital separations increased by 3.1 per cent between 2002–03 and 2006–07.
- There were 382 304 community mental health contacts during 2006–07, of which approximately 52 per cent were for males and 48 per cent for females. Schizophrenia, schizotypal and delusional disorders accounted for 41.1 per cent of the service contacts. Community mental health service contacts increased by 21.7 per cent over the period 2002–03 and 2006–07.

- The results from the *Bettering the Evaluation and Care of Health* (BEACH) survey for mental health encounters with general practitioners for the period April 2005 to March 2007 showed that 80 per cent of the encounters related to depression, sleep disturbance and anxiety, with depression the highest at 42.5 per cent.
- The standardised death rate from suicide in South Australia was 10.7 per 100 000 population in 2006 (16.7 for males and 4.9 for females). This figure is higher than the national average of 8.6 per 100 000 population (13.6 for males and 3.8 for females).

Introduction

Good mental health is fundamental to the wellbeing of individuals, their families, and the whole population. Mental health problems and mental illness are among the greatest causes of disability, diminished quality of life, and reduced productivity.[3]

Mental health is a state of emotional and social wellbeing in which the individual can cope with the normal stresses of life and achieve his or her potential.[2] Mental illness and mental health problems refer to the range of cognitive, emotional and behavioural disorders that interfere with the lives and productivity of people; they can include short-term anxiety and depression as well as longer term conditions such as anxiety disorders, chronic depression and schizophrenia.[3] These conditions and others are significant in terms of prevalence and disease burden, and have far-reaching impacts for families, carers and others in the community.[1]

Mental health problems also interfere with a person's cognitive, emotional or social abilities, but to a lesser extent than a mental illness does. Mental health problems are more common mental health complaints and include the mental ill health temporarily experienced as a reaction to life stressors. Mental health problems are less severe and of shorter duration than mental illnesses, but may develop into mental illness. The distinction between mental health problems and mental illness is not well defined, and is made on the basis of severity and duration of symptoms.[1]

Mental ill health is the third leading burden of disease for the Australia population after cardiovascular disease and cancer, as well as being one of the leading causes of non-fatal burden of disease and injury in Australia. Mental ill health also is associated with higher rates of health risk factors, poorer physical health, and higher rates of deaths from many causes, including suicide.[3]

The diagnosis of mental illness generally is made according to classification systems such as the International Classification of Diseases, Tenth Edition (ICD-10) that refer to a wide range of mental and physical disorders.

This chapter uses a number of information sources to describe the psychological distress, prevalence of mental health conditions, burden of disease, hospitalisation, community mental health contacts, mental health-related encounters with general practitioners, and suicide deaths in regard to the South Australia community.

The chapter also describes the initiatives planned and being implemented for a number of historic mental health reforms.

Outcomes for mental health also are reported in other chapters of this report and these sections relate to burden of disease; mothers, babies and children; older people; and Aboriginal people.

5.1 Psychological distress

The goal of *South Australia's Strategic Plan* Target T2.7 Psychological Wellbeing is for this state to be equal to or lower than the Australian average for psychological distress by 2014.

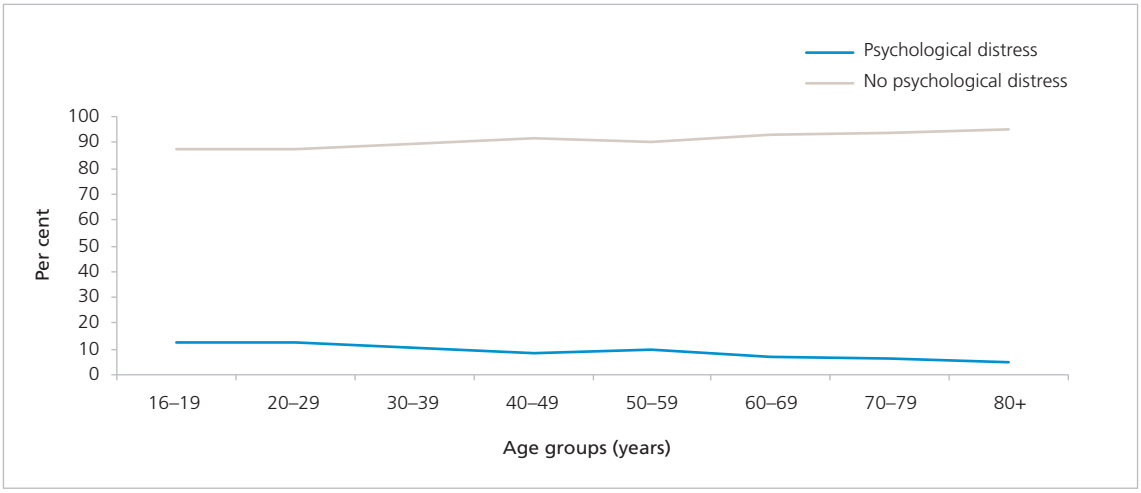
Table 5.1.1 Prevalence of psychological distress, 16+ years

	2002–03	2003–04	2004–05	2005–06	2006–07
Psychological distress	10.6	10.7	10.1	8.9	9.5
No psychological distress	89.4	89.3	89.9	91.1	90.5

Note: The level of psychological distress experienced by respondents was determined using the Kessler Psychological Distress 10 item scale (K10)[7,8,9], that measures anxiety and depressive disorders in the general population.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

The results of the 2006–07 SAMSS indicate that 9.5 per cent of respondents aged 16+ years had psychological distress as determined by the K10. Females (11.8 per cent) were more likely than males (7.1 per cent) to have psychological distress. People aged 16–19 years (12.7 per cent) or 20–29 years (12.8 per cent) reported the highest levels of psychological distress. The prevalence of psychological distress lessens with age.

Graph 5.1.1 Prevalence of psychological distress, by age groups, 2006–07



	16–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years	80+ years
Psychological distress	12.7	12.8	10.6	8.3	9.9	7.3	6.2	4.8
No psychological distress	87.3	87.2	89.4	91.7	90.1	92.7	93.8	95.2

Note: The level of psychological distress experienced by respondents was determined using the Kessler Psychological Distress 10 item scale (K10)[8,9,10], that measures anxiety and depressive disorders in the general population.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

5.2 Current mental health conditions

The results of the 2006–07 SAMSS survey indicate that 14.0 per cent of respondents aged 16+ years self-reported having a current doctor diagnosed mental health condition. Females (17.9 per cent) were more likely than males (9.9 per cent) to report having a current doctor diagnosed mental health condition. People aged 50–59 years (18.1 per cent) were more likely than others to report having a current diagnosed mental health condition.

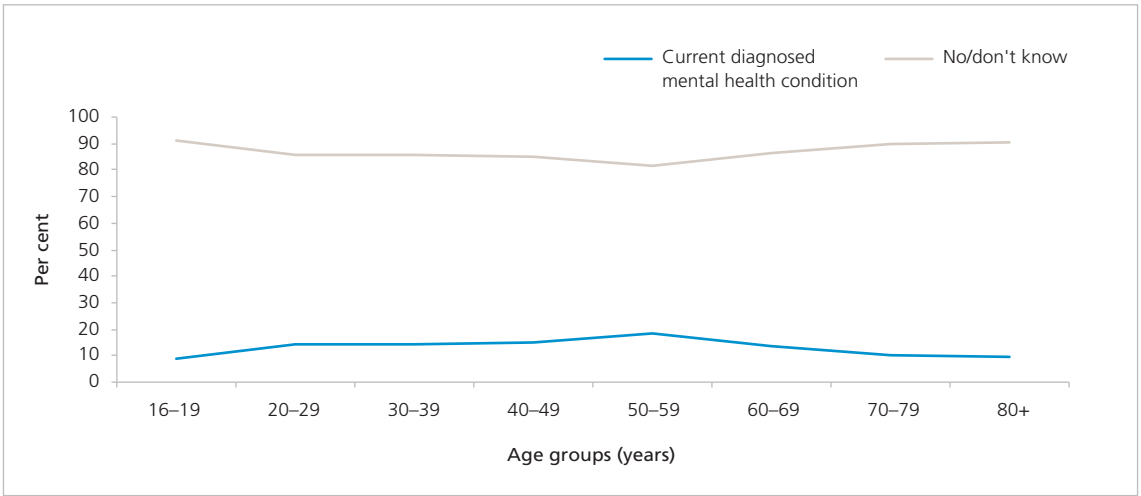
Table 5.2.1 Prevalence of current diagnosed mental health condition, 16+ years

	2002–03	2003–04	2004–05	2005–06	2006–07
Current diagnosed mental health condition	13.5	14.2	14.9	13.4	14.0
No/don't know	86.5	85.8	85.1	86.6	86.0

Note: Current diagnosed mental health condition is determined if the respondent was diagnosed with a mental health condition such as anxiety, depression, a stress-related problem, or any other mental health problem in the last 12 months, or was currently receiving treatment for a mental health condition.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

The proportion of adults aged 16+ years in South Australia who have a self-reported current diagnosed mental health condition has not changed in recent years. The prevalence (14.0 per cent) of current diagnosed mental health conditions (for people aged 16+ years) in South Australia, in 2006–07 was not significantly different compared with prevalence estimates in 2002–03 (13.5 per cent).

Graph 5.2.1 Prevalence of current diagnosed mental health condition, by age groups, 2006–07



	16–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years	80+ years
Current diagnosed mental health condition	8.9	14.1	14.6	14.7	18.1	13.8	10.5	9.8
No/don't know	91.1	85.9	85.4	85.3	81.9	86.2	89.5	90.2

Note: Current diagnosed mental health condition is determined if the respondent was diagnosed with a mental health condition such as anxiety, depression, a stress-related problem, or any other mental health problem in the last 12 months, or was currently receiving treatment for a mental health condition.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 16+ years.

5.3 Burden of disease

Mental illness accounted for approximately 9.4 per cent of the total disease burden in South Australia in 2001–2003. The definition of mental illness in this segment excludes alcohol and substance illnesses; if these two categories were included, the total burden of disease would have been 12.3 per cent, which is below the national figure of 13.3 per cent.[4]

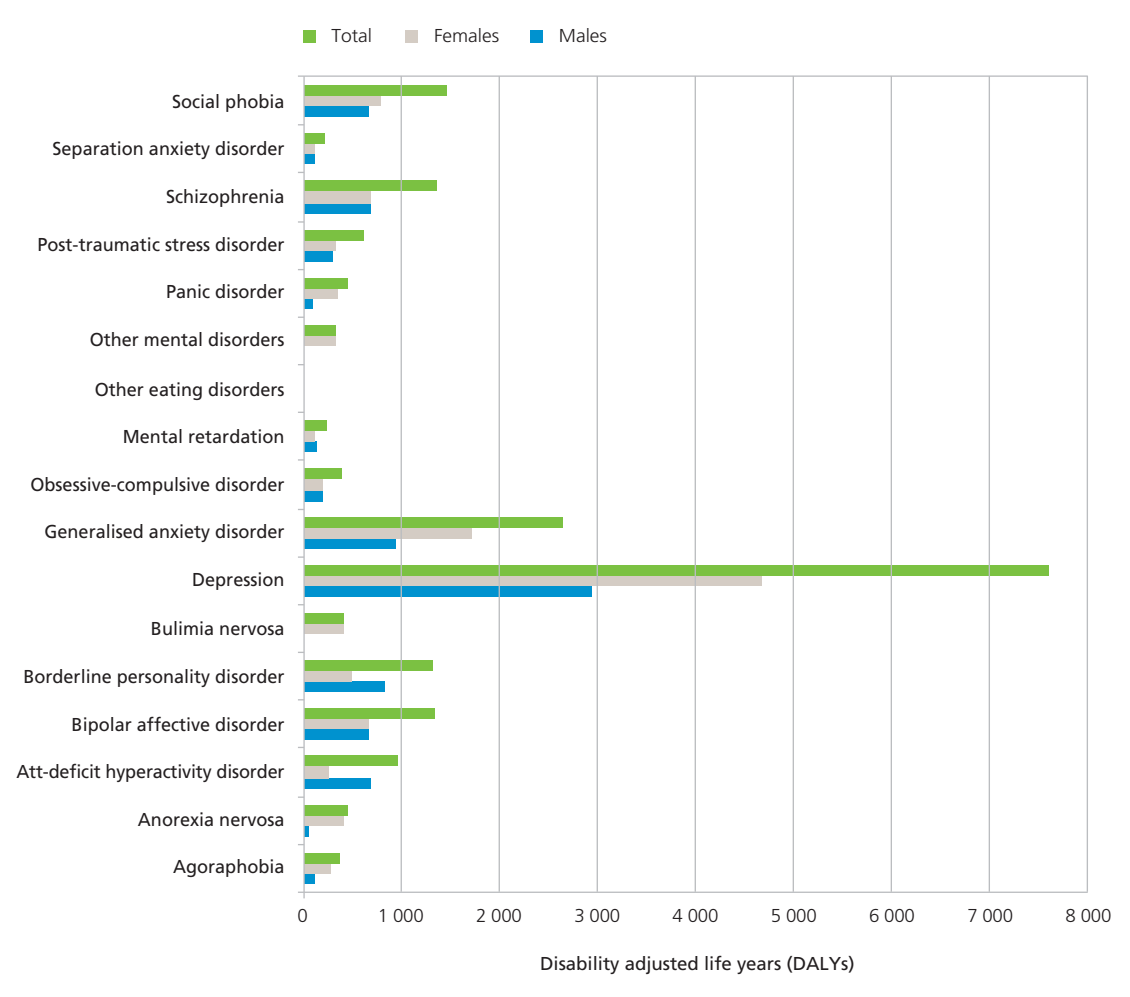
The measure to determine total disease burden is Disability adjusted life years (DALY) which describes the amount of years of life lost due to premature death coupled with years of 'healthy' life lost due to disability.

The total burden of disease for mental illness (excluding alcohol and substance illnesses) for all South Australians account for 8 333 DALYs for males and 11 644 for females. Depression and anxiety disorder dominated the burden of mental health disorders.

It also should be noted that, in addition to the mental health illness DALYs, there were 4 303 DALYs recorded for intentional injuries (suicides) of which 3 475 were for males and 828 were for females.

The following graph depicts the burden of disease for DALY for both males and females in South Australia. Mental health problems can result in increased exposure to health risk factors, poorer physical health, and death, from causes such as suicide.

Graph 5.3.1 The burden of mental illness (DALYs) by disorder and gender, South Australia, 2001–2003



Source: SA Health, *South Australia Burden of Disease and Injury Estimates Study*, 2001–2003.

5.4 Hospitalisation (public hospitals)

The National Health Survey in 2001 as cited in Australia's Health[3] concluded that people with mental or behavioural problems are more likely to be hospitalised than those without these problems. The proportion of people with mental or behavioural problems admitted to hospital in the two weeks before the survey was 19.1 per cent compared to 11.5 per cent for people without such problems. Those with very high levels of psychological distress also were more than twice as likely to be admitted to hospital (28.9 per cent) as those with low levels (11.7 per cent).

There were 16 429 hospital separations in South Australia in 2006–07 where a mental health-related principal diagnosis was recorded (includes behavioural disorders due to alcohol or substance use) and these are detailed in the following table. Mental health-related hospital separations represented 4.2 per cent of total public hospital separations.

The percentage of mental health hospital separations and length of stay (in days) was relativity similar between males and females. The most common principal diagnosis codes based on separations were depressive disorders (23.4 per cent), neurotic, stress-related and somatofam disorders (16.6 per cent) and schizophrenia (13.2 per cent). The diagnoses with the highest number of patient days were schizophrenia (22.4 per cent), depressive disorders (19.7 per cent) and other schizophrenic, schizotypal delusional disorders (16.7 per cent).

Table 5.4.1 Hospitalisations for mental health conditions, 2006–07

Principal diagnosis	Female — separation	Female — average length of stay	Male — separation	Male — average length of stay	Per cent of separations
Dementia	274	20.8	267	21.3	3.3
Other organic mental disorders	184	13.9	152	12.6	2.0
Mental behavioural disorders due to alcohol	637	3.2	1 355	3.6	12.1
Mental behavioural disorders due to other psychoactive substance use	287	4.8	522	4.9	4.9
Schizophrenia	571	18.6	1 594	16.0	13.2
Other schizophrenic, schizotypal, delusional disorders	747	17.8	927	14.7	10.2
Manic episode	33	13.5	40	8.9	0.4
Bipolar effective disorders	787	13.6	502	14.4	7.8
Depressive disorders	2 248	8.5	1 594	7.8	23.4
Other mood (affective) disorders	72	7.3	55	6.7	0.8
Neurotic, stress-related and somatofam	1 590	4.3	1 137	5.1	16.6
Eating disorders	191	19.4	13	10.5	1.2
Other behavioural syndromes associated with physiological disturbances, physical factors	35	5.9	9	3.4	0.3
Disorders of adult personality and behaviour	292	5.1	142	5.3	2.6
Mental retardation	11	6.6	16	9.1	0.2
Disorders of psychological development	29	4.8	31	1.6	0.4
Disorders onset usually occurring in childhood					
Adolescence	29	7.0	52	3.9	0.5
Mental disorder not otherwise specified	0	0.0	5	2.8	0.0
Totals	**8 017**	**9.9**	**8 412**	**9.7**	**100.0**

Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

5.5 Community mental health contacts

Government operated services provide specialised mental health care to patients in community settings as well as in the hospital setting. There were 382 304 contacts in 2006–07 (includes behavioural disorders due to alcohol or substance use) of which about 52 per cent were males and 48 per cent were females.

Schizophrenia, schizotypal and delusional disorders accounted for 41.1 per cent of service contacts for which a principal diagnosis was reported; this compares with the national result of 46.5 per cent as published in the Mental Health Services Report 2004–05.[5] Details of the South Australian results are in the following table. Other commonly reported diagnoses were neurotic, stress-related and somatofam disorders, and depressive disorders.

Table 5.5.1 Community mental health contacts, 2006–07

ICD-10-AM code	Principal diagnosis	2006–07 males	2006–07 females	2006–07 total	2006–07 per cent of total
F00–F03	Dementia	966	1 654	2 620	0.7
F04–F09	Other organic mental disorders	645	918	1 564	0.4
F10	Mental behavioural disorders due to alcohol	1 446	631	2 007	0.5
F11–F29	Mental behavioural disorders due to other psychoactive substance use	2 975	1 088	4 063	1.1
F20	Schizophrenia	76 300	31 253	107 553	28.1
F21–F29	Other schizophrenic, schizotypal, delusional disorders	26 380	23 207	49 587	13.0
F30	Manic episode	764	1 560	2 324	0.6
F31	Bipolar effective disorders	9 143	17 570	26 713	7.0
F32–F33	Depressive disorders	15 741	27 944	43 687	11.4
F34–F39	Other mood (affective) disorders	2 371	2 547	4 919	1.3
F40–F49	Neurotic, stress-related and somatofam	21 752	26 644	48 396	12.7
F50	Eating disorders	27	525	552	0.1
F51–F59	Other behavioural syndromes associated with physiological disturbances, physical factors	43	88	131.	0.0
F60–F69	Disorders of adult personality and behaviour	4 769	10 218	14 994	3.9
F70–F79	Mental retardation	357	208	565	0.1
F80–F89	Disorders of psychological development	3 297	961	4 258	1.1
F90–F98	Disorders onset usually occurring in childhood Adolescence	12 098	6 515	18 613	4.9
F99	Mental disorder not otherwise specified	16 659	12 737	44 711	11.7
	Other	2 350	2 626	4 977	1.3
Totals		198 083	168 894	382 304	100

Note: Unknown sex included in total for 'mental disorder not otherwise specified'
Source: SA Health, Community Based Information System (CBIS); Country Consolidation CME (CCC); Child Adolescent Mental Health System (CAMHS)

5.6 Mental health-related encounters with general practitioners

Nearly 7 per cent (6.7) of all general practice encounters in the two-year period April 2005 to March 2007 were considered to be mental health-related (Table 5.6.1). The encounters exclude drug and substance problems.

The main mental health-related problems managed were depression, sleep disturbance and anxiety. These problems accounted for almost 80 per cent of the mental health encounters, with depression the highest at 42.5 per cent.

The results from this survey are very similar to data published in the Mental Health Services in Australia (2004–05) report in which depression, sleep disturbance and anxiety constituted 2.5 per cent, 1.1 per cent and 1.2 per cent respectively of all general practitioner encounters.

Table 5.6.1 Managed mental health-related problems, BEACH-GP patient encounters in South Australia, April 2005 to March 2007

Problem managed	Per cent total of mental health-related problems	Per cent of all health problems
Depression	42.5	2.8
Sleep disturbance	19.5	1.3
Anxiety	17.8	1.2
Dementia (including senility and Alzheimer's disease)	7.6	0.5
Acute stress reaction	6.3	0.4
Schizophrenia	6.2	0.4
Totals	**100**	**6.7**

Source: Family Medicine Research Centre, BEACH (Bettering the Evaluation and Care of Heath) survey of general practice activity.

5.7 Suicide deaths

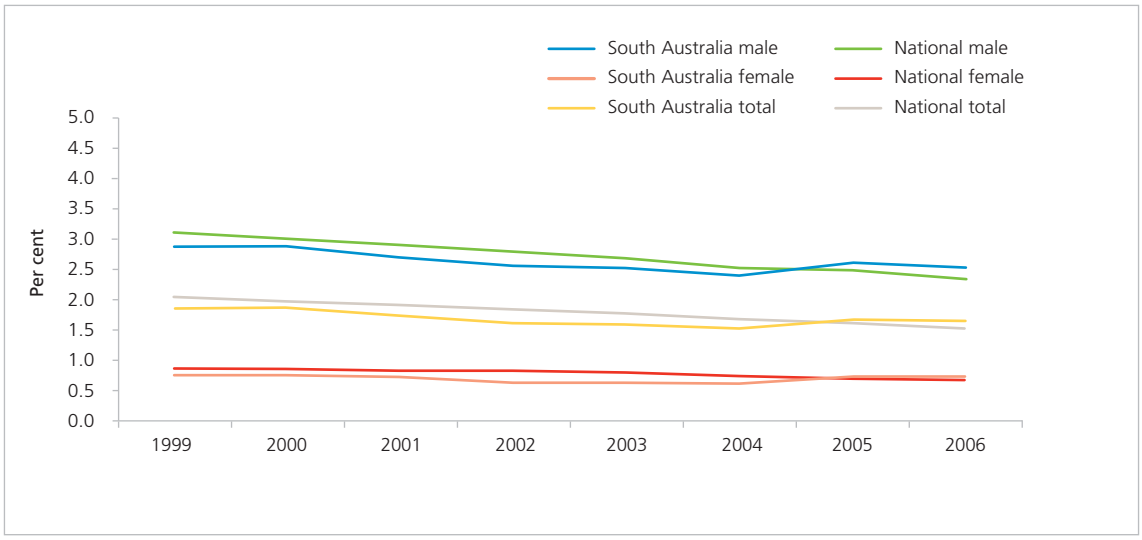
The figures presented in this section are from the Australian Bureau of Statistics and relate to the number of deaths from suicide in the year registered; in some cases, this may not be in the year of occurrence. The rate of suicide can vary considerably from year to year, especially in small population groups.

The standardised death rate from suicide in South Australia was 10.7 per 100 000 population in 2006 (16.7 for males and 4.9 for females). This figure is higher than the national average of 8.6 per 100 000 population (13.6 for males and 3.8 for females).

Generally, the suicide rate was nearly four times greater in males than females. This difference is thought to be due to the propensity of males to use more lethal methods compared to females since the difference in rates at which males and females attempt suicide is much smaller.[6]

Graph 5.7.1 presents data on suicides as a percentage of all deaths, using a three year moving average. The percentages for South Australia and Australia are quite similar, with South Australia's percentage increasing marginally in later years.

Graph 5.7.1 Suicide as a percentage of all deaths by gender totals (3 year moving average)



Source: Australian Bureau of Statistics — Deaths, Australia, 2006 (cat 3302.0 – table 1.4).
Australian Bureau of Statistics — Causes of Death, Australia, 2006 (cat 3303.0 – table 4.5).

5.8 Services and initiatives

The South Australia Government requested the Social Inclusion Board in August 2005 to prepare a report on how to reform South Australia's mental health system. The Social Inclusion Board undertook a wide-ranging consultation process and its research culminated in the acceptance by the government on 20 February 2007 of its report, *Stepping Up: A Social Inclusion Action Plan for Mental Health Reform 2007–2012*. The report made 41 recommendations that focused on:

- implementing a stepped system of care with community mental health teams at the centre
- tackling the crisis in acute psychosis care by having a targeted response for approximately 800 people with chronic and complex needs
- aligning the South Australian Mental Health System with the COAG National Mental Health Action Plan
- redeveloping the Glenside Hospital Campus as a centre for specialist mental health services.

The centrepiece of the report was the 'stepped care' model, which seeks to fill the current gap in South Australia between community care and hospital care. The stepped system contained different graduating levels of care, including:

- support across the community, including community mental health centres, and care and support provided by non-government organisations
- 24-hour supported accommodation
- community recovery centres
- intermediate care beds
- acute care beds
- secure care beds.

These steps were designed to provide people with the most appropriate type of care for their mental health needs at any given time.

The government committed an initial $43.6 million funding package over five years following the release of the report, to begin the reform process, comprising:

- 90 new intermediate care beds — 60 at four centres across Adelaide and 30 in country hospitals
- an extra 73 beds in 24-hour supported accommodation across Adelaide
- the provision of a smooth change over between the current system and the new five tiers
- eight mental health nurse practitioners in regional areas over the next four years
- priority access to services for about 800 people with chronic and complex needs, including those who also have drug and alcohol problems, a history of homelessness or who may be involved in the criminal justice system.

The 2007–08 State Budget included a further $50.5 million over four years for the following initiatives:

- non-clinical community-based support services to be delivered through non-government organisations (NGOs)
- early intervention for young people with a mental illness
- construction of six community mental health centres across the metropolitan area.

The government released the Concept Master Plan for the Glenside Campus in September 2007. The plan outlines the development of:

- a new world-class 129-bed hospital for mental illness and substance abuse, called SA Specialist Health Services
- a residential area incorporating affordable housing and supported accommodation
- a major public cultural hub for the people of the state
- environmental initiatives to maintain the open spaces of the campus and enhance biodiversity and water capture
- a village shopping centre with shops and cafes to integrate services and residences into one community
- a commercial development fostering employment opportunities in this near-city location.

The new SA Specialist Health Services will comprise:

- 40 secure rehabilitation beds
- six mother and infant acute beds
- 23 rural and remote acute beds
- 20 acute adult beds
- 10 psychiatric intensive care beds
- 30 drug and alcohol acute beds.

The Glenside site will accommodate a 15-bed Intermediate Care Facility and 40 supported accommodation places in addition to the 129-bed hospital.

New models of care have been developed for a number of key service areas to begin the modernisation of mental health care in South Australia. The new models of care comprise:

- acute care
- psychiatric intensive care
- aged mental health care
- intermediate care
- supported accommodation
- community mental health care
- secure rehabilitation
- perinatal mental health care
- non-government psychosocial services.

The government released the Mental Health Bill 2007 for public comment in October 2007. The new mental health legislation will affirm the rights, dignity and civil liberties of mental health consumers and their carers, and balance these rights with the community's legitimate expectations that it be protected from harm. This legislation will establish clear principles enabling mental health consumers to receive appropriate services in a variety of settings. It is the aim of government to provide a modern, innovative and ethical legislative framework for people affected by mental illness as well as ensuring that the needs of carers are addressed, while conforming with the national privacy principles.

General practitioners (GPs) are at the frontline in the delivery of primary health care services to the community. The delivery of mental health services in a GP-setting is becoming more demanding, given the often complex needs of these consumers; in recognition of this, the government provided some $9.7 million in funding over four years for 30 allied-health workers — such as psychologists, occupational therapists, nurses and social workers — to work in GP clinics across the state to assist people with mental illness, and also to provide much needed additional support for South Australian GPs.

Early intervention services for children and young people are critical to reduce the social, health and economic impact of mental illness; in recognition of this, the government provided $10.2 million over four years for an additional 23 community workers and three psychiatrists to assist in reducing waiting times for children and adolescents for mental health services. The funds also will be used to increase the mental health service's capacity to provide outreach and primary care services for adolescents with mental illness and substance use issues, and incorporates funding for two specialist mental health workers and a consultant psychiatrist.

5.9 Notes

1 DoHA (Department of Health and Ageing) 2003, *National Mental Health Plan 2003–08*, Australian Health Ministers, July 2003, Canberra.

2 World Health Organization's, *Strengthening Mental Health Promotion*, WHO Fact Sheet No.220. Geneva: World Health Organization, 1999.

3 AHIW (Australian Institute of Health and Welfare) 2006, *Australia's Health 2006*, AHIW cat.no. AUS 73, Canberra.

4 AHIW (Australian Institute of Health and Welfare), *The Burden of Disease and Injury in Australia 2003*, AHIW cat.no, PHE 82, Canberra 2007; School of Population Health, The University of Queensland, Brisbane 2007.

5 AHIW (Australian Institute of Health and Welfare), *Mental Health Services in Australia 2004–05*, AIHW cat. no. HSE 47, Canberra 2007.

6 OECD, (Organisation for Economic Co-Operation and Development), 2007, *Health at a glance: OECD indicators 2007*, Paris.

7 Kessler R & Mroczek D. *Final versions of our non–specific psychological distress scale*. Michigan: Institute for Social Research, University of Michigan, 1994.

8 Saunders D & Daly A. *2000 Collaborative Health and Wellbeing Survey: Psychological distress in the Western Australian population*. Health Department of Western Australia, June 2001.

9 *K10 Symptom Scale*. Clinical Research Unit for Anxiety and Depression. A WHO Collaborating Center. School of Psychiatry, University of NSW, 2000. (Online, accessed: 30/3/2001). Available at: <http://www.crufad.unsw.edu.au/K10/k10info.htm>

6 Oral health

In this chapter

Summary

- Dental caries is the second most commonly occurring condition after upper respiratory tract infections. Oral diseases also are associated with significant rates of avoidable hospitalisation.
- Around 40 per cent of the population experiences pain from teeth, gums or dentures in a 12-month period. Oral disease also affects the ability to eat certain foods, impacts on social interactions and, in the case of oral cancer, leads to considerable morbidity and even death.
- There has been more than a 50 per cent increase in the prevalence of dental decay among South Australian children since the late 1990s, paralleling a similar national trend. Forty per cent of children by five years of age have decay experience and 60 per cent of this caries are untreated.
- Children who are from country areas, lower socioeconomic backgrounds, CALD (culturally and linguistically diverse) populations or communities, or who are Aboriginal, have more dental decay experience than the rest of the community.
- The proportion of South Australian adults who have had all their teeth extracted (edentulous) has fallen by 60 per cent over the past 30 years.
- The decay experience of low-income adults attending public dental clinics has increased by 12 per cent since the cessation of the Commonwealth Dental Health Program in 1997 and the amount of decay that is untreated has increased by 50 per cent.
- Aboriginal and Torres Strait Islander adults have fewer teeth with dental decay experience and less gum disease than do other concession card holders attending public dental clinics.
- There are 54.8 practising dentists per 100 000 population in South Australia compared with the national average of 46.9 per 100 000. There are far more dentists in Adelaide (64.6 per 100 000) than in the rest of the state (28.1 per 100 000); this contrast leads to severe problems of access to dental care in some areas.
- Ninety-nine per cent of primary school-aged children, and 97 per cent of secondary-school-aged children, receive dental care within a two-year period through a combination of the School Dental Service and the private dental sector. Attendance at the dentist reduces for adults once eligibility for the School Dental Service stops at 18 years, and is lowest at 71 per cent among those aged 25–44 years old.
- Additional funding from the State Government since 2002, and effective prioritisation of resources, has seen waiting lists reduce from 82 000 people (49 months) to 42 051 people (23 months) by June 2007. The waiting list for dentures decreased during the same period from 8 892 (44 months) to 6 378 (41 months) while the waiting list for specialist dental services increased from 2 373 (17 months) to 3 077 (27 months).

Introduction

Dental caries is the second most commonly occurring condition after upper respiratory tract infections.[1] Oral diseases also are associated with high rates of avoidable hospitalisation, particularly in young children.[2]

Diseases of the oral cavity have a significant impact on the lives of Australian people. Around 40 per cent of the population experiences pain from teeth, gums or dentures in a 12-month period.[2] Oral disease also affects the ability to eat certain foods, impacts on social interactions[2] and, in the case of oral cancer, leads to considerable morbidity and even death.[3]

Many diseases and chronic conditions are associated with oral symptoms and disease; for example:

- diabetes directly affects the tissues of the gum that support the teeth[2]
- disease of the gums (periodontal disease) may contribute to cardiovascular disease, pre-term birth and low birth weight in babies, aspiration pneumonia, hepatitis C, HIV infection, infective endocarditis, and nutritional deficiencies in children and older adults.[2]

These effects are found more frequently among the more disadvantaged groups in the population, often represented among those in receipt of government assistance.[3]

Oral diseases also are a major financial cost to the South Australian community, representing 4.9 per cent of total health expenditure in the state in 2001–02. (Private expenditure formed 71 per cent of the total $243 million spent on dental care in South Australia in 2001–02[3]). Almost one in six adults takes time off work for a dental problem in a 12-month period.[4]

This chapter presents details on the oral health of South Australians.

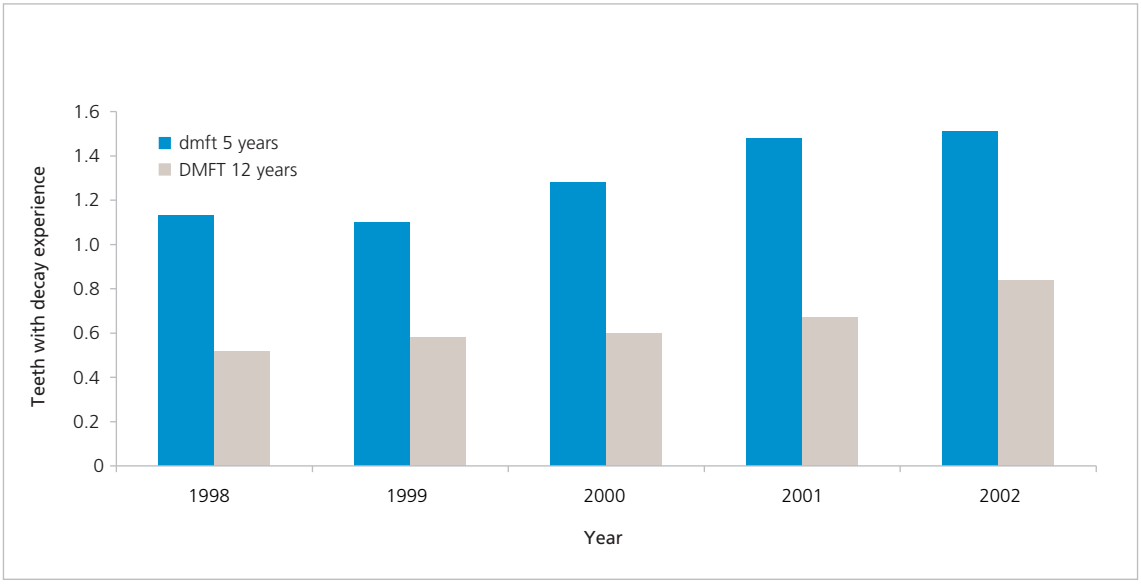
6.1 Children's oral health

The major oral health condition for children is dental decay. Forty per cent of children by five years of age have decay experience and 60 per cent of these caries are untreated.[5] Most young children have healthy gums and, although the figure for untreated caries falls to 37 per cent by age 15 years, most of this periodontal disease is of the mildest variety[5] and is of limited public health significance.

South Australia ranked second-best among all Organisation for Economic Co-Operation and Development (OECD) countries by the late 1990s for the level of dental decay in its children.[6]

There has been a greater than 50 per cent increase in the prevalence of dental decay among South Australian children in recent years, paralleling a similar national trend.[7] Reasons for this increase in dental caries include increased use of low fluoride toothpastes[8], increased consumption of non-reticulated (non-fluoridated) water[9], and changes in diets.

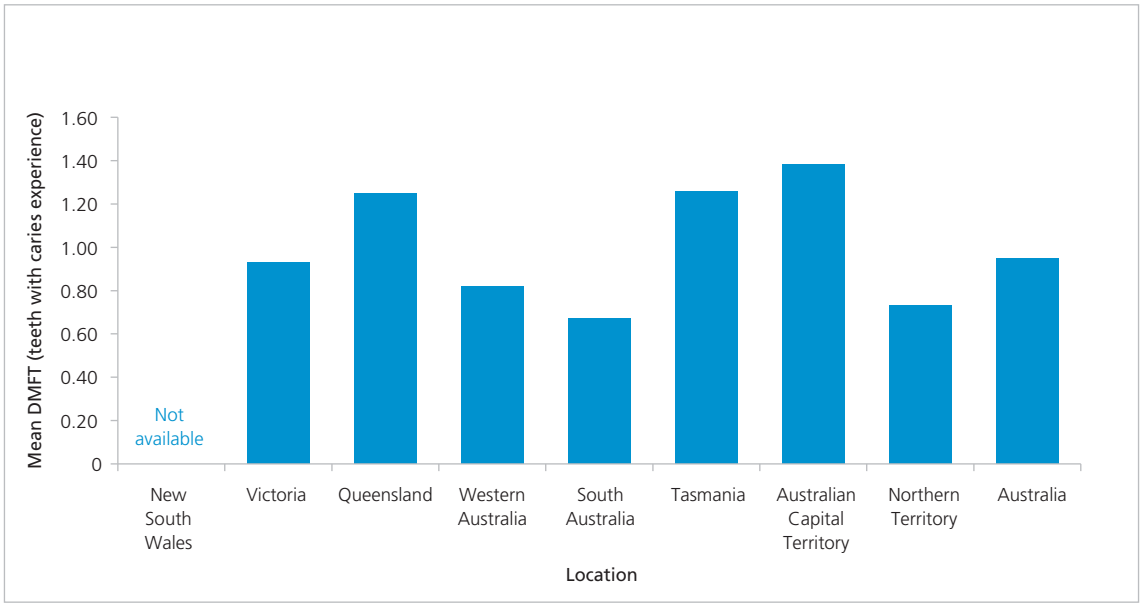
Graph 6.1.1 Average number of teeth with decay experience, South Australia 1998–2002. Mean dmft/DMFT



Note: (dmft= the average number of decayed(d) plus missing(m) plus filled(f) deciduous teeth; DMFT=the average number of decayed(D) plus missing(M) plus filled(F) adult teeth.)
Source: Australian Institute of Health and Welfare (AIHW), Child Dental Health Surveys.[5]

The decay experience of 12-year-old children in South Australia in 2001 (the last year for which national comparisons are available) was the lowest in Australia.[5] Data for New South Wales are not available because of the very low coverage of its School Dental program.

Graph 6.1.2 Dental caries in children, 2001.
Average number of adult teeth with decay experience, 12-year-old mean DMFT



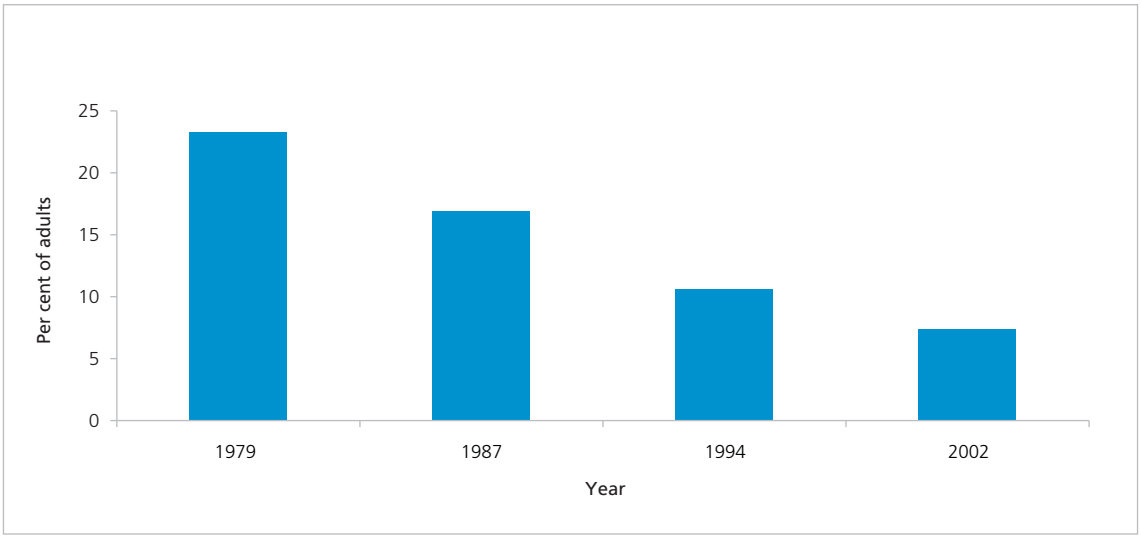
Note: DMFT= the average number of decayed(D) plus missing(M) plus filled(F) adult teeth.
Source: Australian Institute of Health and Welfare (AIHW), Child Dental Health Survey, 2002.[5]

Some groups of children have significantly poorer oral health than the community average:

- children in the Mount Gambier area — the only major centre in South Australia without water fluoridation — had 78 per cent more dental decay in their adult teeth in 2004 than did children in Adelaide and 40 per cent more than did children in the Riverland[7]
- children from lower socioeconomic areas have approximately 40 per cent more dental decay experience than those from more advantaged areas[7]
- children from CALD backgrounds have 80 per cent more decay experience in their deciduous teeth and 30 per cent more decay experience in the adult teeth[7]
- Aboriginal and Torres Strait Islander children in South Australia experience 70 per cent more dental caries than non-Indigenous children and have more teeth with untreated dental decay[5]
- children in country areas of the state experience, on average, up to 30 per cent more dental caries than do children in Adelaide.[7]

6.2 Adult oral health

Graph 6.2.1 Per cent adults edentulous (no natural teeth), South Australia, 1979–2002

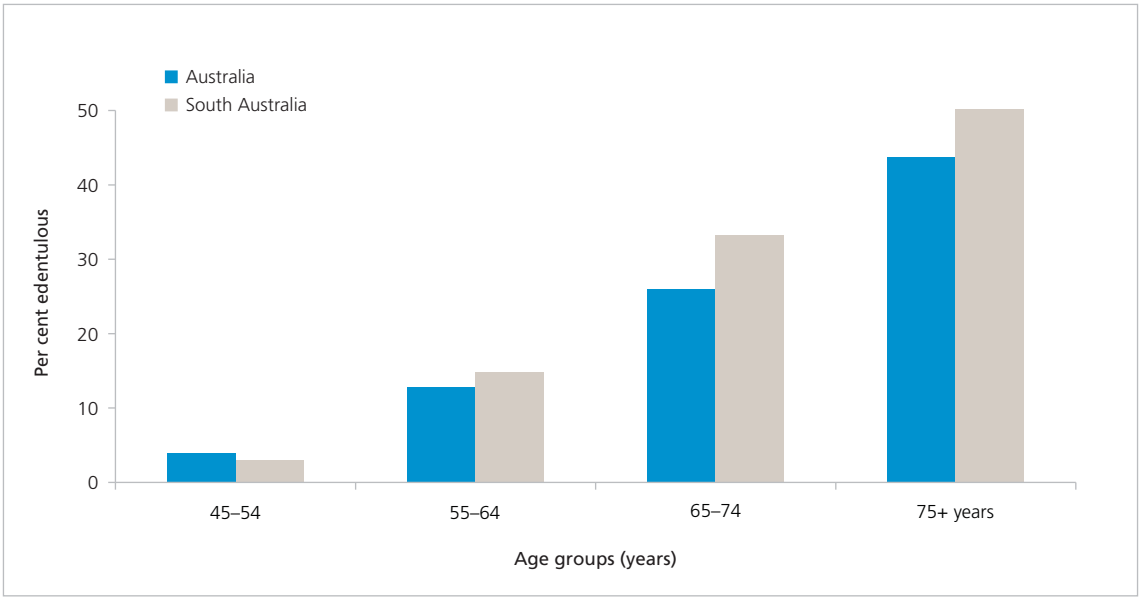


Source: Australian Institute of Health and Welfare (AIHW), *National Oral Health Survey* 1987–1988 and *National Dental Telephone Interview Survey in Oral Health in South Australia 2004*.[10]

There has been a dramatic fall over the past 30 years in the number of adult South Australians who have had all their teeth extracted.

The level of total tooth loss, however, among older South Australian adults is above the national average[11], probably reflecting patterns of dental treatment after the Second World War.

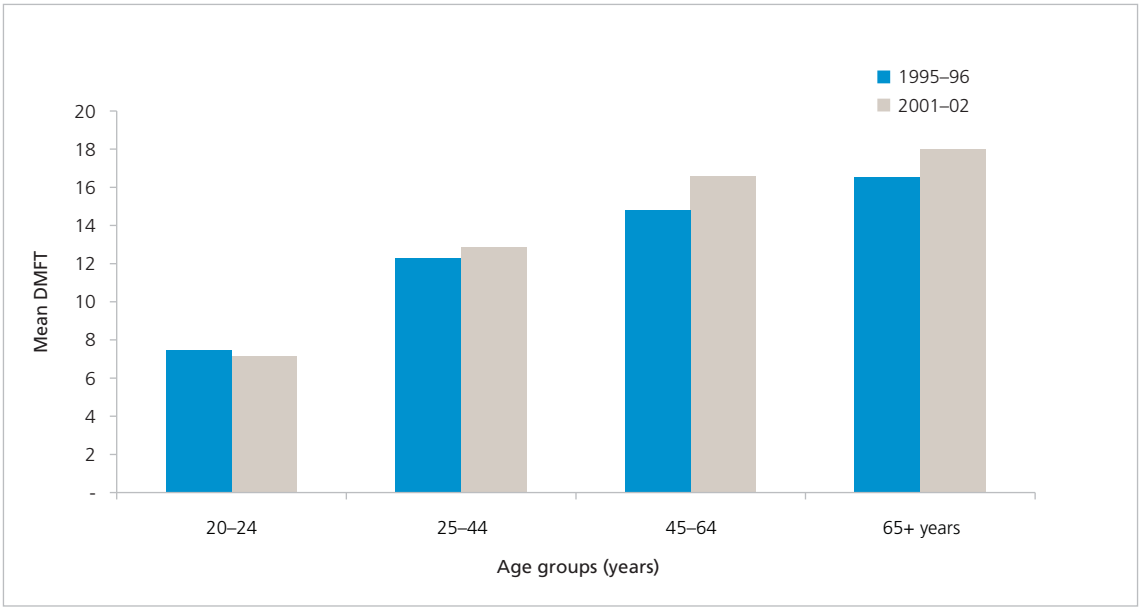
Graph 6.2.2 Total loss of natural teeth, per cent endentulous by age group, 2002



Source: Australian Institute of Health and Welfare (AIHW), National Dental Telephone Interview 2003[11]

The decay experience of adults attending public dental clinics has increased by 12 per cent since 1995–96 for all aged groups except 20-24-year-olds.[3] The amount of decay that is untreated, however, has increased by 50 per cent[3], following the loss of the Commonwealth Dental Health Program in 1996.

Graph 6.2.3 Average number of teeth with decay experience for adults attending public clinics, South Australia, 1995–96 and 2001–02

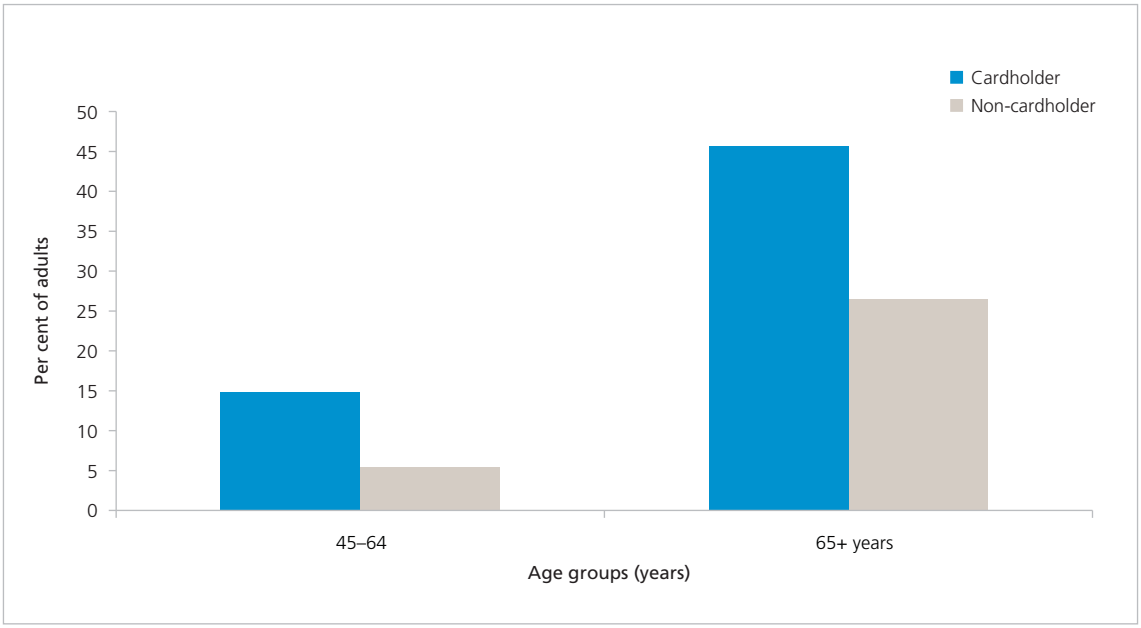


Source: Australian Institute of Health and Welfare (AIHW), Australian Research Centre for Population Oral Health 2005[3]

The proportion of adults attending public dental clinics who had healthy gums decreased from 12 per cent to 10 per cent between 1995–96 and 2001–02, and the percentage with calculus (tartar) on their teeth increased from 28 per cent to 45 per cent[3].

Concession cardholders are more likely to have had all their natural teeth extracted (that is, to be edentulous) than the rest of the community.

Graph 6.2.4 Total tooth loss, per cent of adults who are endentulous, by age, 2002



Source: Australian Institute of Health and Welfare (AIHW), Oral Health in South Australia 2004[10]

Aboriginal and Torres Strait Islander adults aged 25–44 years have fewer teeth with dental decay experience (8.7 teeth) compared with non-Aboriginal concession card holders attending public dental clinics in South Australia (12.9 teeth).[3]

More Aboriginal adults (21 per cent) have healthy gums than non–Aboriginal adult concession card holders attending public dental clinics (10 per cent)[3]. More of the periodontal disease present has progressed to a severe stage in Aboriginal adults, however, possibly related to the presence of systemic conditions such as diabetes.[3]

Periodontal diseases and oral cancers are more prevalent among older people.[2] Many older people on medications suffer additionally from a dry mouth, which can cause significant difficulties eating and speaking[2] as well as predisposing the individual to dental disease. People with cognitive impairment are at particular risk of oral disease; for those living in the community, the difficulties of maintaining oral hygiene lead to high levels of dental caries and periodontal diseases.[12] The deterioration is rapid and ongoing once such people are admitted to residential care.[13]

The poor oral health of older people also increases the cost and complexity of medical and aged care services. Tooth loss, for example, undermines the quality of nutrition, contributing to loss of body weight[12] and accumulation of dental plaque is linked to aspiration pneumonia.[14]

6.3 Dental services in South Australia

There were 821 dentists, 128 dental therapists, 109 dental hygienists and 27 prosthetists practising in South Australia in 2000[3]. The figure for dentists represents 54.8 practising dentists per 100 000 population compared with 46.9 per 100 000 for the rest of Australia. There are far more dentists in Adelaide (64.6 per 100 000) than in the rest of the state (28.1 per 100 000)[3], providing country people with significant barriers to access to dental care.

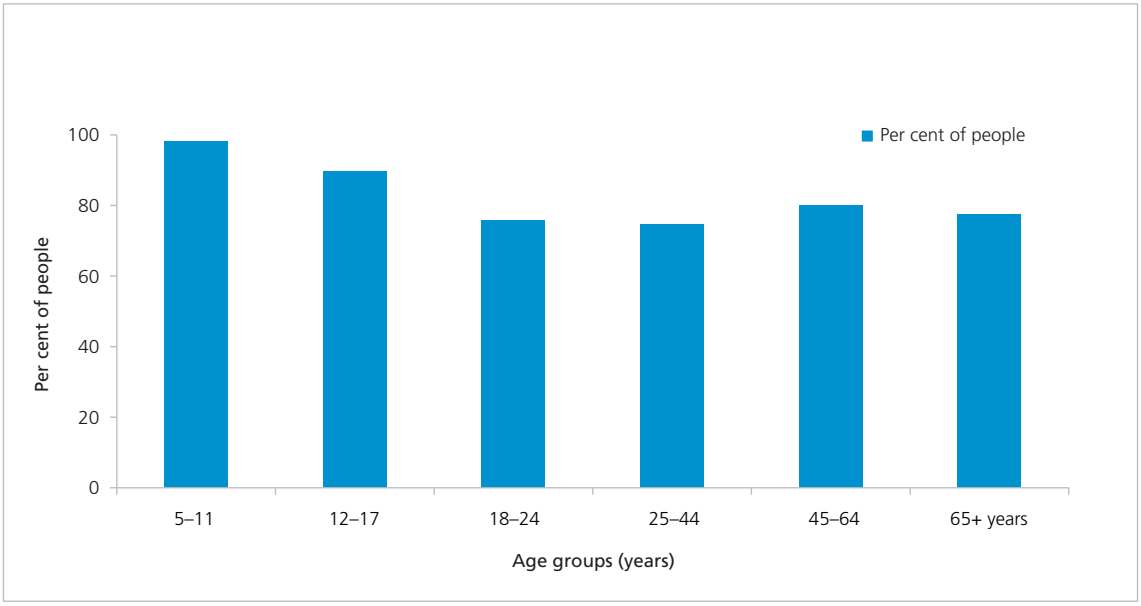
The majority of South Australians receive and pay for their own oral health services on a private basis (with the exception of children), with or without the assistance of dental insurance. Over 80 per cent of adults with natural teeth who received dental care in a previous 12-month period attended a private dental practice.[11]

6.3.1 Attendance at a dentist

The School Dental Service offers a comprehensive dental care program to all children until their 18th birthday. Participation is high in the School Dental Service, with 87 per cent of primary, 45 per cent of secondary and 16 per cent of pre-school-aged children (0–4 years) enrolling in the program and receiving regular care.[7]

Ninety-nine per cent of 5-11-year-olds and 97 per cent of secondary-school-aged children receive dental care within a two-year period through a combination of the School Dental Service and the private dental sector.[3] This level of coverage is high indeed, compared with older age cohorts in South Australia. Attendance for adults reduces once eligibility for the School Dental Service ceases at 18 years and is lowest among those aged 25–44 years old.[3]

Graph 6.3.1 Per cent of people with natural teeth attending a dentist within two years, South Australia dental attendance 2002



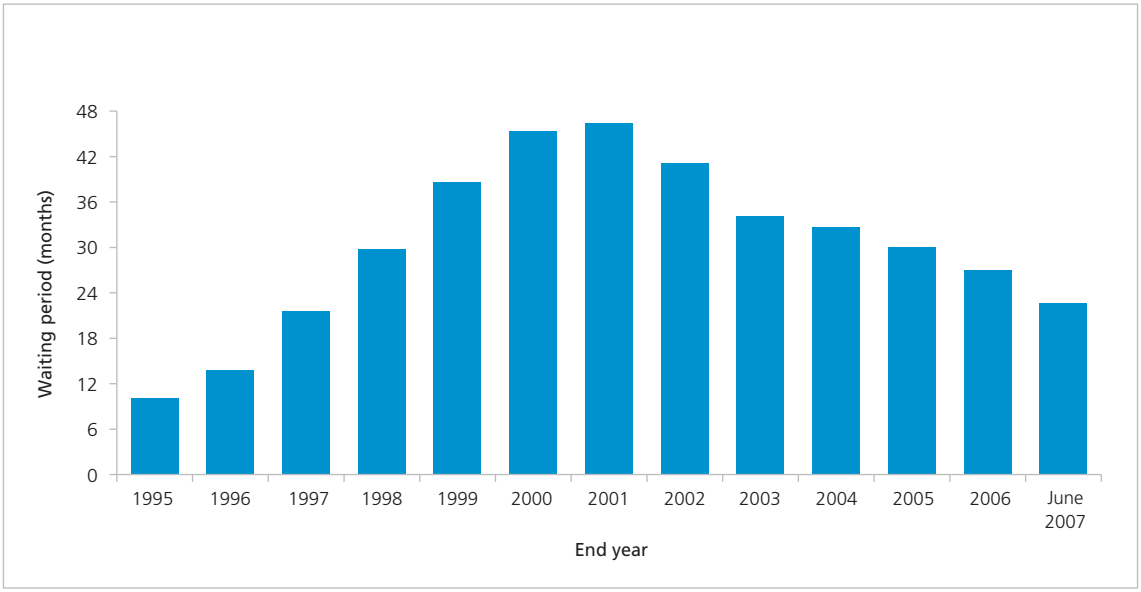
Source: Australian Institute of Health and Welfare (AIHW), National Dental Telephone Interview Survey[11]

6.3.2 Emergency and general dental care for disadvantaged adults

The Community Dental Service provides publicly subsidised emergency and general dental services to adults who are the holders of a Concession Card, either through public dental clinics, or by dentists contracted through the private dental sector.

More than 82 000 Concession Card holders were waiting for an average 49 months in mid-2002 for restorative dental care; since that time, additional funding from the State Government and effective prioritisation of resources has seen waiting lists reduced by June 2007 to 42 051 people (or 23 months).[7]

Graph 6.3.2 Average wait for restorative dental care, South Australia 1995–2007



Source: SA Dental Service Unpublished Data.[7]

The waiting list for prosthetic dental services (dentures) decreased since 2002 from 8 892 people (44 months) to 6 378 (waiting an average of 41 months).[7]

6.3.3 Specialist dental care for disadvantaged adults

Publicly funded specialist dental services are provided on referral from general public dental providers. The South Australian Dental Service provides a limited range of these more complex specialist dental services for Concession Card holders, mostly at the Adelaide Dental Hospital, performed by staff specialists and postgraduate students undergoing specialist training.

The table below presents average waiting times for specialist dental services at the Adelaide Dental Hospital as of June 2007.

Table 6.3.1 Waiting lists for specialist dental services, June 2002 and June 2007[7]

	June 2002		June 2007	
Speciality	Number	Average waiting time (in months)	Number	Average waiting time (in months)
Oral Surgery	779	8	1 125	14
Orthodontics	1 594	21	1 249	48
Specialist restorative	-	-	703	12

6.4 Services and initiatives

6.4.1 Oral health for older people still living in the community

A pilot program was developed in 2003–04 under the direction of a multi-sector Steering Committee to assist older people living in the community to achieve good oral health as a contributor to maintaining their independence. This project, based in the inner southern metropolitan area of Adelaide, integrates a simple question-based oral health screen of people living in the community, who are aged over 75 years, into their annual health assessments by medical practitioners. Concession Card holders who are assessed as 'at risk' through this process are referred to a public dental clinic where they bypass the waiting lists to receive publicly funded dental care.

Evaluation of this program by Australian Research Centre for Population Oral Health demonstrated that early assessment and interventive dental care can improve the quality of life and general wellbeing of older people and their ability to go about their day-to-day activities.[15]

A modified version of this program was extended in 2006–07 to the northern suburbs of Adelaide. The oral health assessment in this enhanced program is undertaken by Domiciliary Care SA, including Aged Care Assessment Teams. Those older people identified as 'at risk' are given a functional assessment for maintaining good oral hygiene in the home, in addition to priority access to dental treatment.

6.4.2 Managing demand for 'emergency' dental care

About 70 per cent of the clinical resources of the Community Dental Service were consumed in 2001–02 responding to 'emergency' appointments from adult Concession Card holders[7]; as a result, little clinical time was available for the treatment of people on waiting lists.

Collaborative research undertaken by the South Australian Dental Service and the Australian Research Centre for Population Oral Health showed that some of these 'emergencies' really did not require priority access to dental care. A further outcome of the research was a suite of questions that provided a more accurate assessment of the true urgency of the case. This suite of questions was converted into a computer-assisted dental emergency triaging tool called the Relative Needs Index, which was implemented in all Community Dental Service Clinics from November 2006.

Twenty-five per cent of adult Concession Card holders seeking priority dental care were assigned a lower priority as a result of the Relative Needs Index and were not offered an early appointment.[7] This change in assessment has freed significant public dental resources for the treatment of additional patients on waiting lists and has contributed to the reduction of average waiting times to 23 months.[7]

6.4.3 The Aboriginal Liaison Dental Program

The Aboriginal Liaison Dental Program was initiated in response to an identified need to improve oral health outcomes for Aboriginal people. Discussion with the people who provide services for Aboriginal and Torres Strait Islander people provided an insight into the oral health needs and expectations of the community, and an opportunity to investigate barriers to dental care. One of the barriers to care identified initially was the two-year waiting list for general dental care at Community Dental Clinics. A number of priority general courses continue to be made available as a result, for eligible Aboriginal and Torres Strait Islander adults.

Adult Aboriginal people attending diabetes camps in the northern Adelaide suburbs, Muna Paiendi Community Health Service, the Noarlunga Health Service and the Parks Community Health Service during 2007–08 received an oral health assessment. One-hundred-and-thirty-three of the 142 Aboriginal people who received an oral health assessment were identified as needing a dental visit; of these, 96 have begun a course of care.[7]

This program will be extended progressively across the state over the next two years.

6.5 Notes

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7 Mothers, babies, children and youth

In this chapter

Summary

- Around 19 000 women give birth in South Australia each year and, after more than a decade of decline, this number is now increasing. The fertility of women under the age of 30 is declining, while that of women over 30 is increasing.
- Infant mortality in South Australia is currently around 4.4 per 1 000 live-births (between 65 and 90 infant deaths per year in the period 2000–2006) which compares very favourably with other developed countries. Much of the improvement in the last decade can be attributed to the fall in cases of Sudden Infant Death Syndrome (SIDS).
- Maternal deaths in South Australia, at 8.5 per 100 000 confinements, (corresponding to 9 deaths over the period 2001 to 2006), are very low by international standards; however the rate in Aboriginal women (45.9 deaths per 100,000 confinements — corresponding to just 12 deaths across the whole of Australia for the period 2000–2002), is still 5.4 times higher.
- Medical interventions in childbirth — such as induction of labour and caesarean section — are controversial. The proportion of women giving birth by caesarean section in South Australia is now 32.9 per cent overall and rising. Around 28 per cent of women who birth in public hospitals have sections, but this figure is 42 per cent for women birthing in private hospitals.
- Around 3.6 per cent of South Australia's 50 000 teenage girls (15–19 year-olds) became pregnant in 2006; this number has declined by 1 percentage point over the past decade. Around half these teenage pregnancies are terminated.
- Nearly 5 000 (4 712) pregnancies were terminated among women of all ages in 2005; this number has been declining steadily since 2001.
- There are around 53 000 separations to hospital each year of children and adolescents aged 0–17 years. Major medical reasons for admission are asthma and bronchitis, 'croup', and gastroenteritis; and nearly all these conditions are treated in public hospitals. The most common surgical procedures are tonsillectomy/adenoidectomy and myringotomy (insertion of tubes to drain fluid from the ear); with at least half of these procedures occurring in private hospitals.

- Ninety-three per cent of children in South Australia have had all the immunisations recommended by the National Immunisation Program by the age of two years. Cases of rubella have fallen to extremely low levels over the past 10 years. Cases of whooping cough continue to decrease in 0–4-year-olds, but a rising incidence of this disease in adults is a potential threat to this improvement.
- Around 14.1 per cent of South Australia's 4–17-year-olds have mental health problems, but only 29 per cent of them receive any services. Around 50 per cent of parents of children who have the strongest indicators for requiring mental health services say that help is too expensive, or that they don't know where to get it.
- Around 4 000 children aged 0–17 years in South Australia may have physical disabilities sufficiently severe that they require rehabilitation services.

Introduction

This chapter examines the health needs, health behaviours and health service requirements of the mothers and children living in South Australia.

The South Australian female population of reproductive age (considered to be 15–44 years) was 317 315 as at 30 June 2007, which was 20 per cent of total population. There has been a slight decrease in this group as a percentage of the population over the last 20 years.

Around 19 000 women give birth in South Australia each year and, after more than a decade of decline, this number is now increasing. The birthrate appears to have been accelerated by the Federal Government's maternity cash payment introduced in July 2004, as well as by low unemployment rates. The fertility of women under the age of 30 is declining, while that of women over 30 is increasing. The proportion of women giving birth by caesarean section in South Australia is now 32.9 per cent overall and rising.

The number of children and adolescents (0–17-year-olds) in South Australia had been declining slowly over 30 years until June 2005; since then, it has increased slightly to be 350 783 at June 2007. This group made up only 22.1 per cent of the total population as at June 2007, down from 24 per cent 10 years ago.

Children's health is strongly influenced by the family and cultural environment, local communities and, at an even broader level, by social, political, economic and environmental factors. Major medical reasons for children and adolescents being admitted to hospital are asthma and bronchitis, 'croup', and gastroenteritis. The most common surgical procedures are tonsillectomy/adenoidectomy and myringotomy.

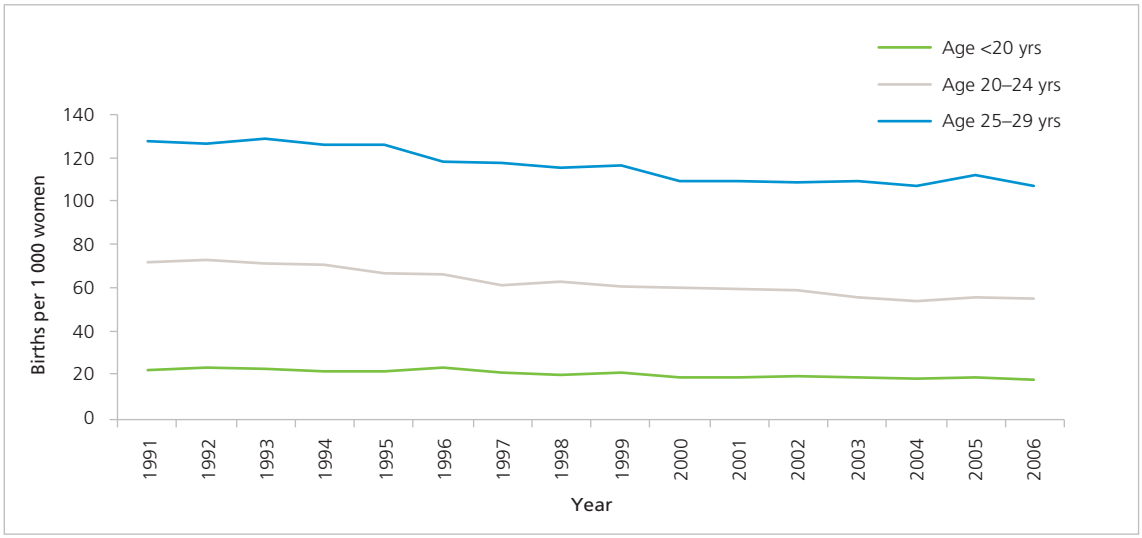
Infant mortality and maternal death rates in South Australia compare very favourably with other developed countries. Immunisations rates also are high with 93 per cent of children in South Australia having had all the immunisations recommended by the National Immunisation Program by the age of two years.

7.1 Child bearing in South Australia: trends in fertility

The term fertility within a population health context refers simply to the number of live births per 1 000 women per annum. The term is sometimes used (for example, in reference to 'fertility programs') as a synonym for fecundity, which is defined as the potential for reproduction and is determined by reproductive processes such as gamete production, fertilisation, and the ability to carry a pregnancy to term.

The number of live births per annum per 1 000 women of reproductive age (considered to be 15–44 years) is often referred to as the General Fertility Rate (GFR). South Australia's GFR in 2005 was approximately 58.5 births per 1 000 women. Graphs 7.1.1 and 7.1.2 show clearly that, over the 16 years from 1991 to 2006, the fertility of South Australian women within specific age-bands under the age of 30 years has been in steady decline, while the fertility of women aged 30 or more has increased substantially. These trends demonstrate clearly that women in South Australia are deferring child-bearing until the later years of their reproductive age-span. The drivers of this trend almost certainly include career aspirations, and a growing desire to stay longer in the workforce to be able to afford housing. The current trend toward deferring child-bearing to later ages almost certainly will have an effect on future demands for reproductive services, such as In-vitro fertilisation (IVF), since fecundity decreases with increasing age.

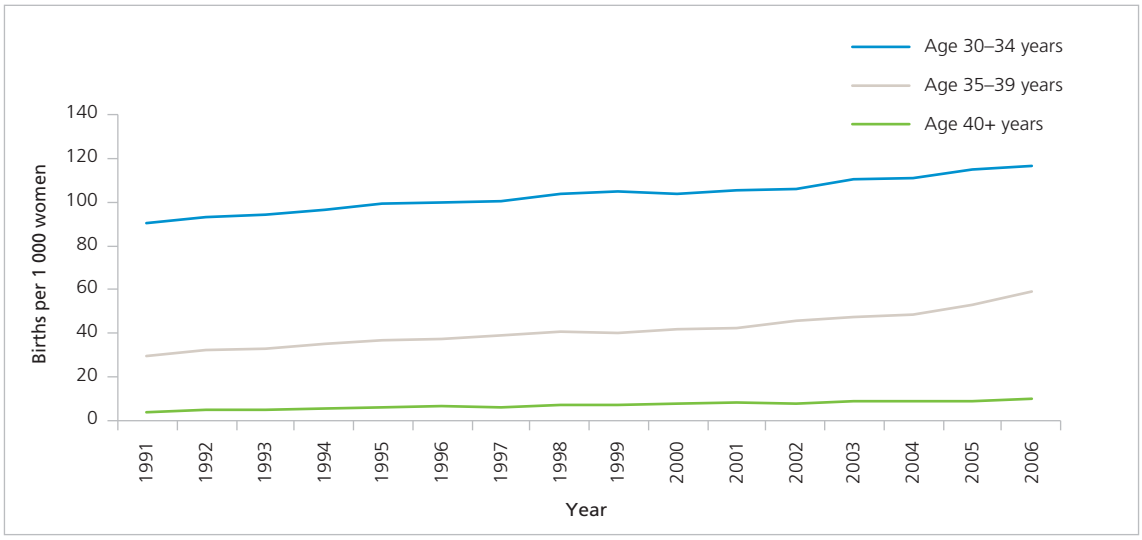
Graph 7.1.1 Fertility of South Australian women aged under 30 years



Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

The fertility of women 30+ years, however, has been increasing. The following graph shows the change in rates since 1991.

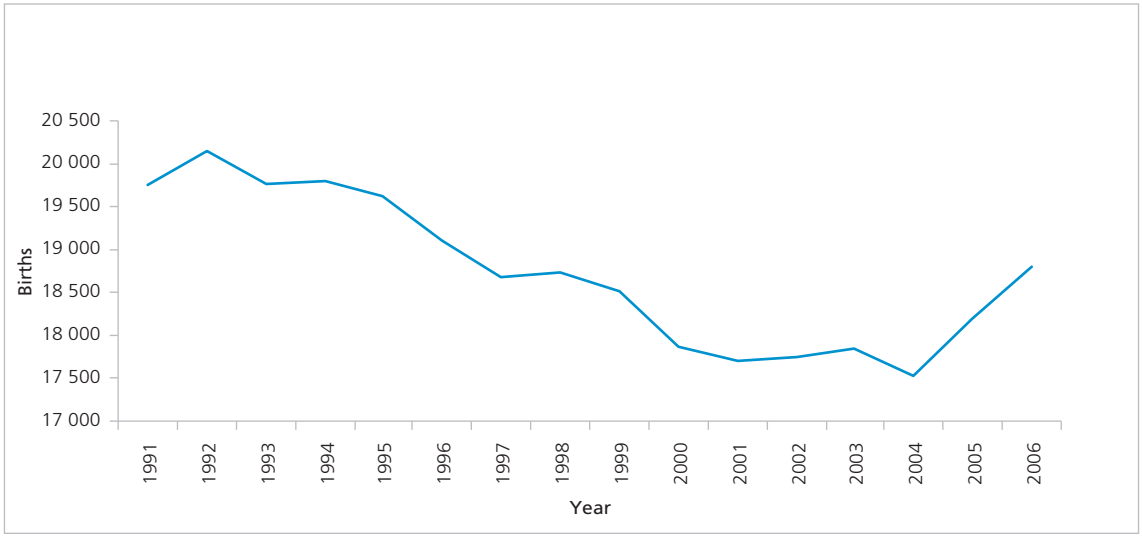
Graph 7.1.2 Fertility of South Australian women aged 30+ years



Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

The number of babies born in South Australia had been declining steadily until 2004, and health care planners were predicting decreased requirements for paediatric services in the near future. This trend appears to have reversed, however, in 2005 and 2006 (see Graph 7.1.3 below).

Graph 7.1.3 Annual births in South Australia



Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

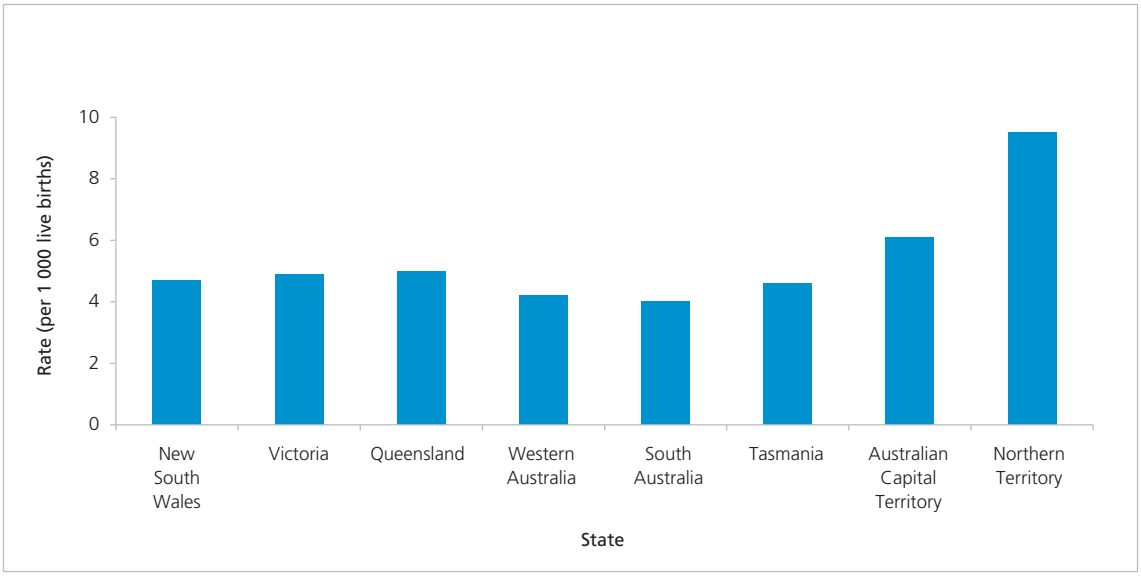
The Federal Government introduced a maternity cash payment or 'baby bonus' in July 2004, worth $3 000 (increased to $4 000 in July 2006) which, coupled with low unemployment, appears to have accelerated the birthrate not only in South Australia, but also nationally.

7.2 Infant mortality

Babies who are born live at 20 or more weeks gestation, with a birth weight of at least 400g, but who die before reaching the age of 1 year (including those who died in the neonatal period of 1–28 days) are counted as 'infant deaths'. Infant mortality is used to compare the health and wellbeing of populations across and within countries and varies from around 3–7 deaths per 1 000 live births in developed countries to 100 or more in developing countries such as those in the African sub-continent and Afghanistan.

South Australia's infant mortality rate is the lowest in Australia at 4.0 deaths per 1 000 live births over 2003–2005. The average rate for all Australians over the same period, in comparison, was 4.8 deaths per 1 000 live births.

Graph 7.2.1 Infant mortality rate, three-yearly average, 2003–2005

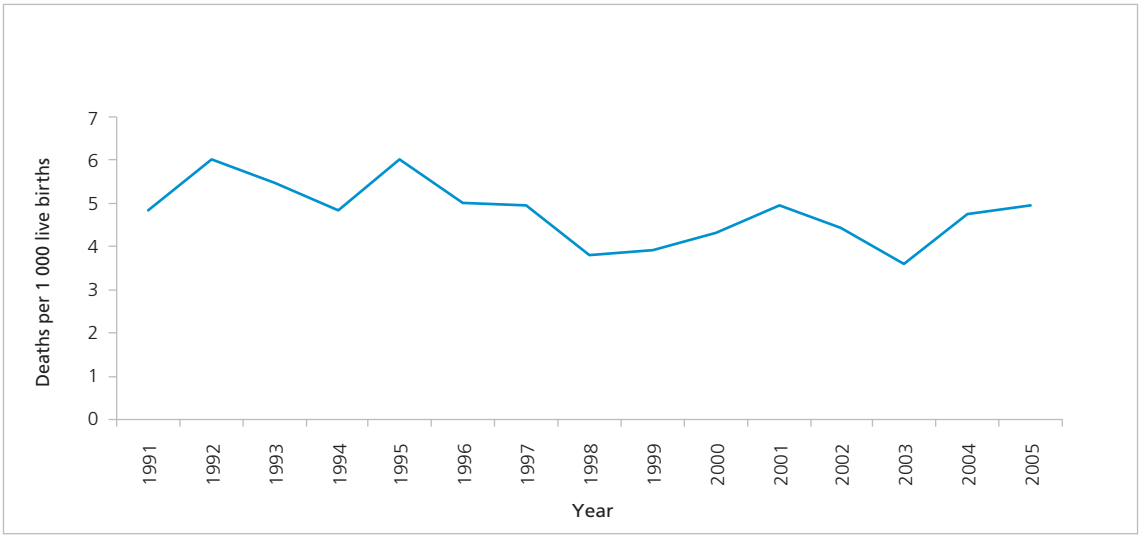


Source: Australian Bureau of Statistics (ABS), Deaths 2005, Australia, Cat. no. 3302.0, AusInfo, Canberra; and ABS (various years), Births 2005, Australia, Cat. no. 3301.0, AusInfo, Canberra.

The infant mortality rate in South Australia has decreased from an average of 5.6 infant deaths per 1 000 live births in 1991–1993 (around 111 infant deaths per year) to an average of 4.4 per 1 000 live births in 2004–2006 (or around 79 infant deaths per year).

These figures from SA Health are derived using a slightly different approach to the ones shown in the graph above. The Australian Bureau of Statistics (ABS) data (graph) include births only where the mother's post code is within South Australia. The SA Health data include all births in South Australia irrespective of place of residence. The ABS births and deaths data also are based on the time when the events are registered, where the SA Health data are based on when the events occur.

Graph 7.2.2 Infant mortality in South Australia, 1991–2005

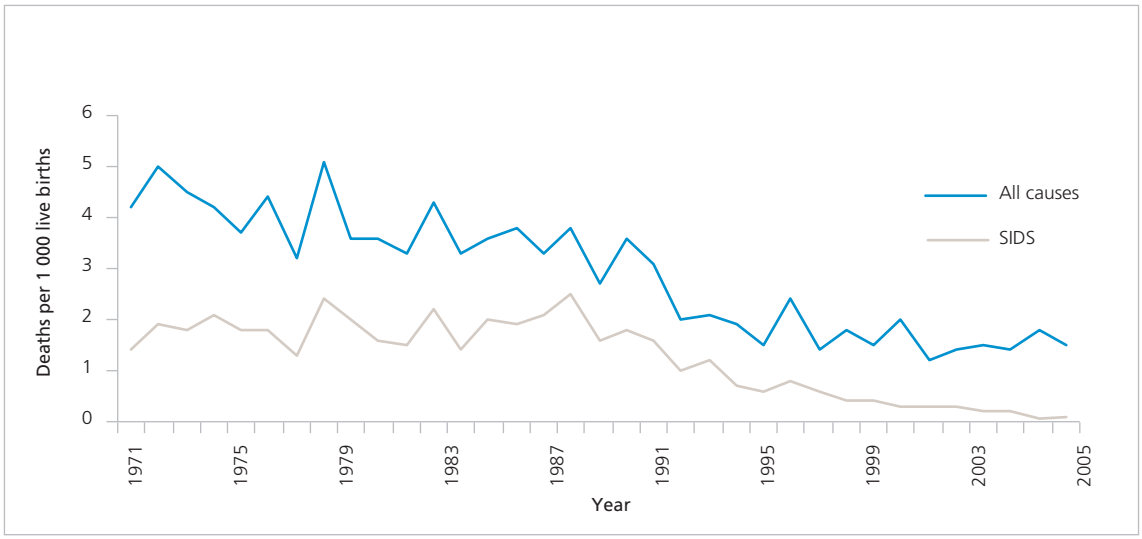


Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

Ninety infant deaths were recorded in South Australia in 2005. The Maternal, Perinatal and Infant Mortality Committee (2006), in reviewing these and other recent infant deaths, expressed concern about the number of deaths in which adverse factors were present, such as smoking, alcohol and substance abuse, bed-sharing while intoxicated, physical abuse and poor social circumstances.[1]

An examination of the trends in infant deaths in the post-neonatal period (29-days-to-1-year) demonstrates that much of the decrease in infant deaths in this age category can be attributed to the fall in cases of Sudden Infant Death Syndrome (SIDS) following the introduction of campaigns advocating that babies sleep on their backs (or supine) instead of in the face-down or 'prone' position (Graph 7.4). The steep decline in deaths from SIDS (and hence, in overall infant mortality) begins very shortly after the South Australian paediatrician, Dr Susan Beal, published her recommendation stating *There is a lower incidence of SIDS in communities that invariably use the supine position for infants than in those who do not. Abandoning prone sleeping for infants in Adelaide should reduce the incidence of SIDS*.[2] SIDS was a rare event in South Australia by the year 2005.

Graph 7.2.3 Post-neonatal infant deaths in South Australia, 1971–2005



Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

7.3 Maternal deaths

Reducing maternal mortality is one of the eight priority Millennium Development Goals set by Member States of the United Nations. A reduction in these deaths is a powerful indicator of the skills of those in attendance at birth, the availability and accessibility of emergency obstetric care for all who develop complications, and of the availability and accessibility of family planning.

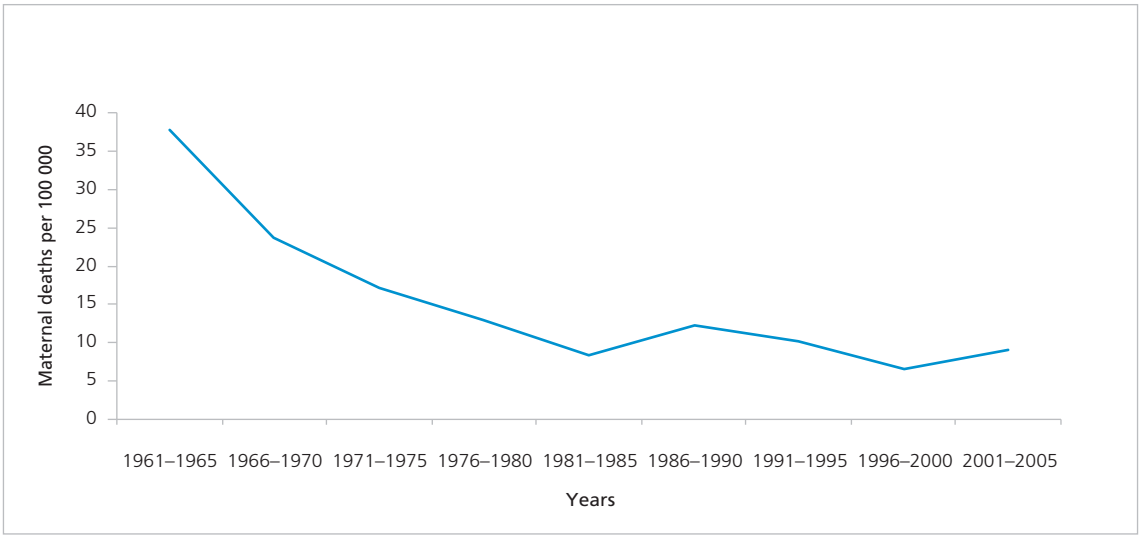
The World Health Organization (WHO) defines maternal death as the death of a woman while pregnant or within 42 days of a termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management. The definition does not include accidental or incidental causes. Maternal deaths in South Australia are classified as 'direct' obstetric deaths, resulting from obstetric complications of the pregnant state, or from interventions, omissions, or incorrect treatment of those complications; and 'indirect' obstetric deaths, resulting from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes, but which was aggravated by physiologic effects of pregnancy.

It is readily apparent from Graph 7.3.1 that the number of deaths per 100 000 confinements has decreased markedly in South Australia over the past 45 years. The maternal mortality for direct and indirect deaths in the five years 2001–2005 was 9.1 per 100 000 confinements, which is very low by international standards. (The United Nations (UN) estimated in 2000 that, across the world and as a weighted average, around 400 women die per 100 000 who give birth; 440 per 100 000 in developing countries, but only 20 per 100 000 in developed countries.)

A subcommittee of the South Australian Maternal, Perinatal and Infant Mortality Committee examines all deaths to determine if there are any recurring causes for concern.

Only 400–500 Aboriginal women give birth each year in South Australia. Across Australia, their mortality is around 45.9 deaths per 100 000 births (corresponding to 12 deaths for the period 2000–2002), 5.4 times the rate of non-Aboriginal Australian women.

Graph 7.3.1 Maternal deaths in South Australia, 1961–2005



Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

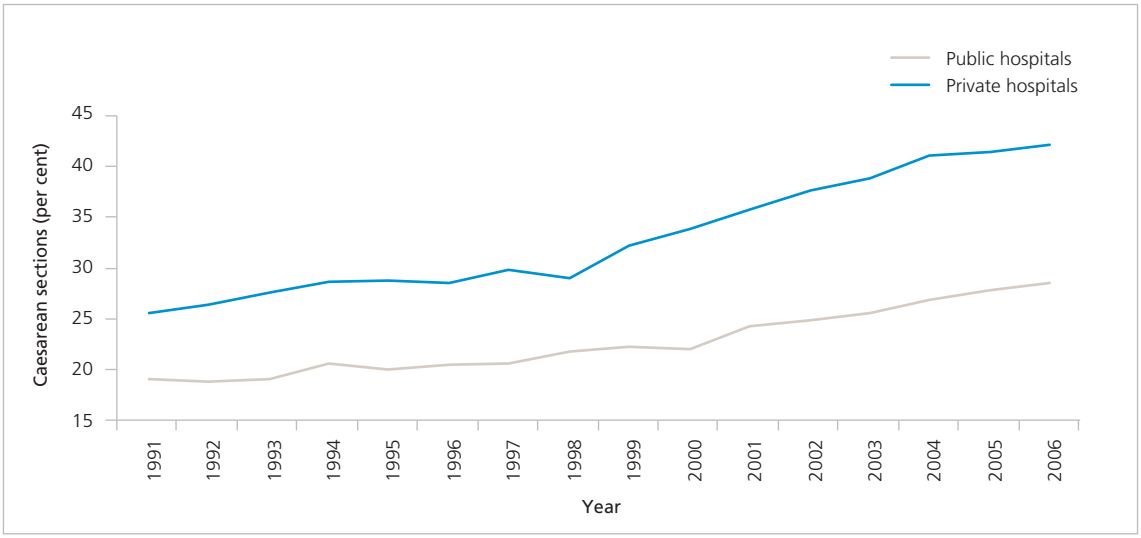
7.4 Interventions in childbirth: caesarean section

It is readily apparent from the sections on maternal and infant mortality that childbirth is not without attendant risks, the most severe of which is death of the mother or her baby.

Advances in knowledge and the technology of maternity care mean that outcomes of childbirth among non-Aboriginal South Australians are now among the best in the world. Nevertheless a number of women's advocacy groups have argued for some years that childbirth has become 'over-medicalised' and 'disempowering', and that we may be able to enjoy the same level of favourable outcomes, with fewer interventions than are applied currently. These interventions include induction of labour, and episiotomies, but the most controversial is caesarean section. Pre-existing medical conditions in the mother, and complications during pregnancy and labour, sometimes unequivocally demand a section although it is widely acknowledged that there are increased (albeit reasonably small) risks to both mother and baby associated with a caesarean section; the controversy has to be viewed as one where it is necessary to achieve the appropriate balance. There are some women who ask, for various reasons (including time-management, fear of labour pain, and perceived effects on sexuality) for their baby to be born by caesarean section. Obstetricians are divided over whether this wish should take precedence over the existence, or otherwise, of medical indications for a section.

Nearly 33 per cent of all confinements in South Australia in 2006 resulted in birth by caesarean section; from Graph 7.4.1, it will be readily apparent that this proportion is growing rapidly.

Graph 7.4.1 Caesarean sections in South Australia, 1991–2006



Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

This growth is greater in private hospitals than in public hospitals. Women with private hospital insurance on average are older than uninsured women, and age is universally recognised as a 'risk factor' for child birth, leading quite often to the need for caesarean section; numerous studies, however, have failed to show that maternal age alone is responsible for the differences between the figures for the two types of hospital.

7.5 Teenage pregnancy

It is generally recognised that a large proportion of teenage pregnancies are unplanned and unwelcome, although some teenage women plan their pregnancies, or are happy to find they are pregnant. Enormous stress can be put on both the young women and their families where the pregnancy is unexpected; they may not have sufficient resources, life-skills and emotional availability to give their new baby an appropriate start in life.

Groups of young women who are especially at risk of having an unwanted pregnancy include:

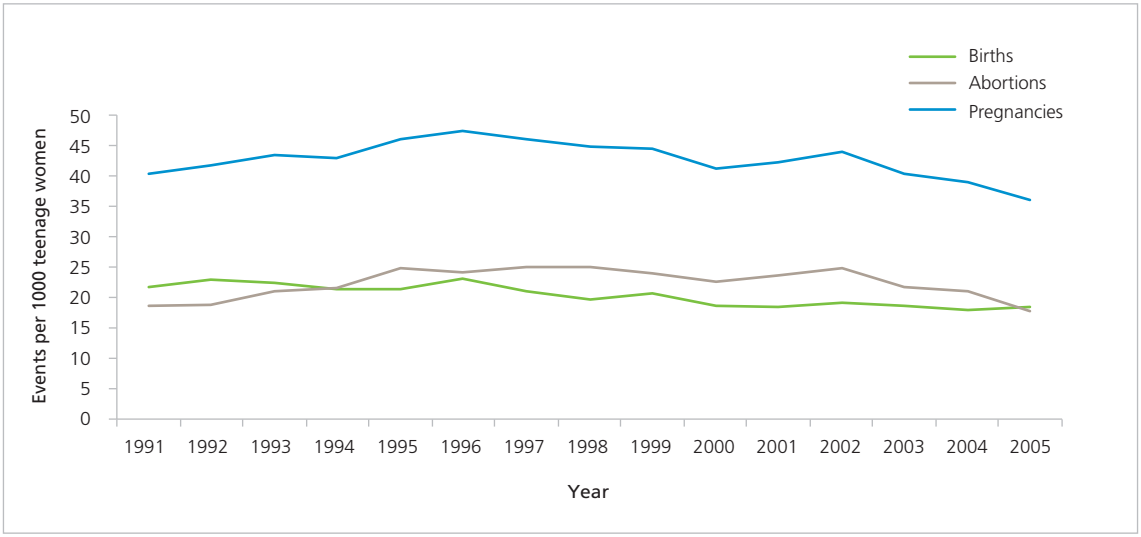
- women who are disadvantaged educationally and with few job opportunities, and who may not know about, or use effective contraception
- women who are victims of sexual abuse, and who are more likely to have early and unprotected sexual activity
- women with disabilities, who often receive less information, and insufficient support and protection.

Termination of a pregnancy is lawful in South Australia if a doctor believes the continuation of the pregnancy presents a grave risk to the physical or mental health of the woman. This availability means that South Australia is one of the few states with good quality data relating to the numbers of terminations undertaken. Termination is available usually up to 12 weeks gestation, but can occur as late as 22 weeks using a different procedure.

A 16-year-old may make the decision to terminate her pregnancy (or undergo any medical procedure) without the knowledge of her parents. Young people under 16 may have a termination without parental consent, only if two doctors agree that this is an emergency situation, and that there is a major risk to the health of the young woman.

There are around 50 000 teenage women aged 15–19 in South Australia, and around 1 800 to 2 200 (between 4 and 5 per cent) in any one year will become pregnant. Graph 7.5.1 shows the births and terminations that have occurred in teenage women over the period 1991–2005. Slightly more than half of all these teenage pregnancies have been terminated since 1994. The figure shows a downward trend in teenage pregnancies beginning around 1995.

Graph 7.5.1 Teenage pregnancies in South Australia 1991–2005



Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

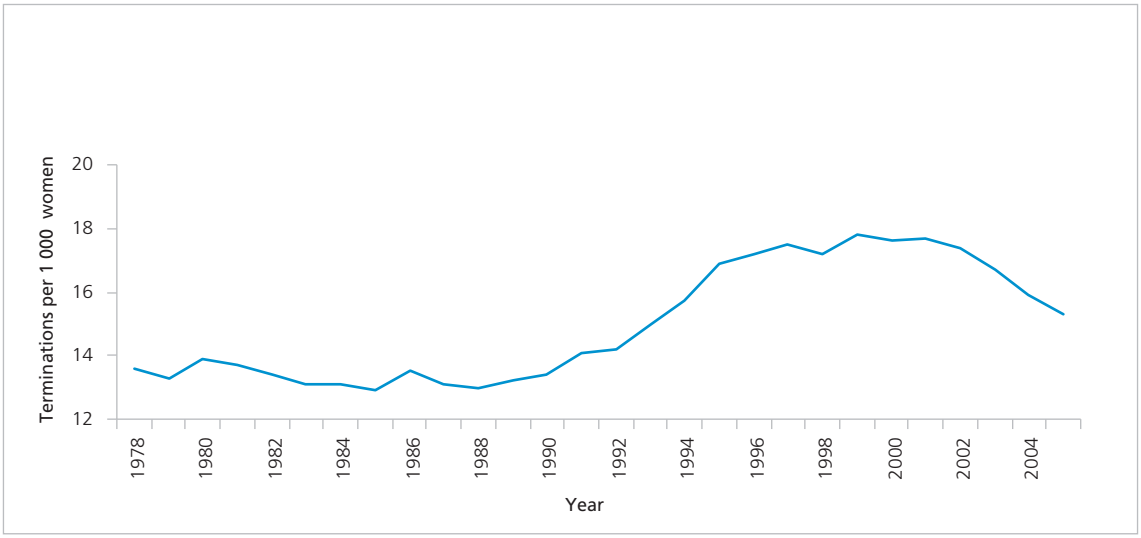
7.6 Terminations of pregnancy

Abortion legislation came into force in 1970 under the Criminal Law Consolidation Act. Termination of pregnancy became legal in South Australia if performed in a prescribed hospital by a medical practitioner for a woman who had been resident here for at least two months. The practitioner and another medical practitioner must have examined the woman and formed the opinion that the continuation of the pregnancy would involve greater risk to her life, or greater risk of injury to her physical or mental health, than if the pregnancy was terminated; or that there was a substantial risk that if the pregnancy was not terminated and the child was born, the child would suffer from such physical or mental abnormalities as to be seriously handicapped.

A total of 4 712 terminations were performed in South Australia in 2005, but only 3 per cent of these were for fetal abnormalities (chromosomal or otherwise) or because the fetus had been exposed to damage from drugs or other agents.

The number of terminations performed since 2001 in South Australia has been decreasing (Graph 7.6.1). Reasons for this downward trend have not been investigated formally, but suggested explanations include better sex and contraception education, improved methods of contraception, (particularly the long-acting methods involving implants under the skin), and possibly some effect from the Australian Government's cash baby bonus.

Graph 7.6.1 Pregnancy terminations in women aged 15–44 from 1978–2005

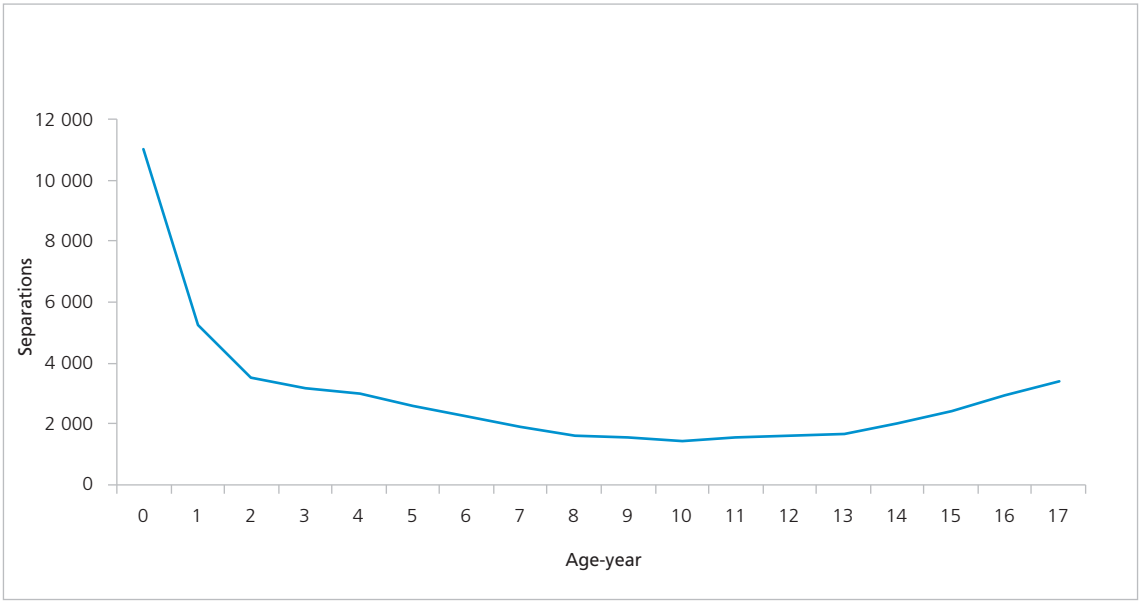


Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

7.7 Hospital services for children and adolescents

The children and adolescents (0–17 year-olds) of South Australia have required around 53 000 separations to hospital each year for the past five years, with the exception of 2005 when these separations fell to around 50 000. This first figure corresponds to 0.16 separations per individual in this age group, but it should be borne in mind that some children and adolescents may have multiple separations within a year. Graph 7.7.1 shows the number of separations from hospital for all causes for each age from 0–17 years.

Graph 7.7.1 Hospital separations by age year for 0-17-year-olds in South Australia, 2006

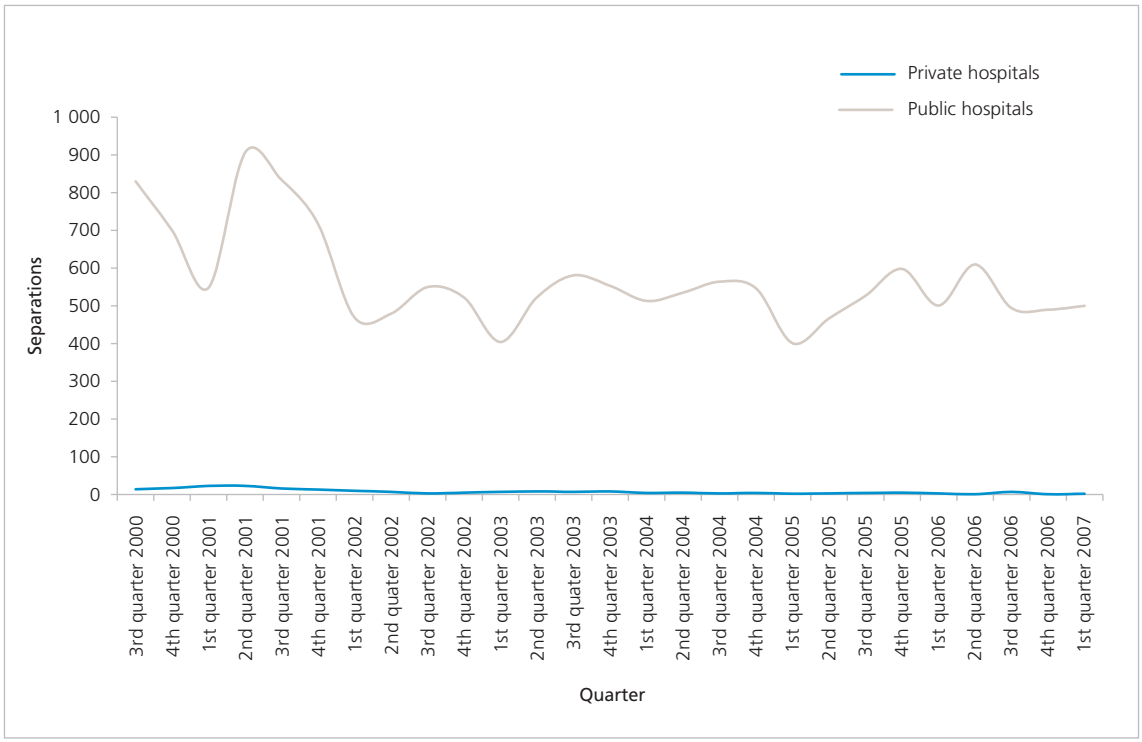


Note: Some children have multiple separations within a single calendar year.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC), 2007.

The graph shows that infants and very young children require more hospital services than older children; due in large measure to the fact that many of the conditions that can be treated at home safely in older children require much closer care and attention in very small children. Illnesses and conditions that affect breathing (for example, acute bronchiolitis, croup, and asthma) and hydration state (for example, gastroenteritis) are common reasons requiring hospitalisation in the very young.

The most common medical condition requiring hospitalisation of South Australia's children and adolescents is bronchitis and asthma. Graph 7.7.2 shows that nearly all uncomplicated bronchitis and asthma is treated in public as distinct from private hospitals and that there was a steady decrease in separations prior to 2002 which has stabilised now at around 2 000 separations a year. This decrease may reflect the considerable efforts made in recent years to provide parents and children with better information on preventing asthma attacks, and on recognising and treating an impending attack.

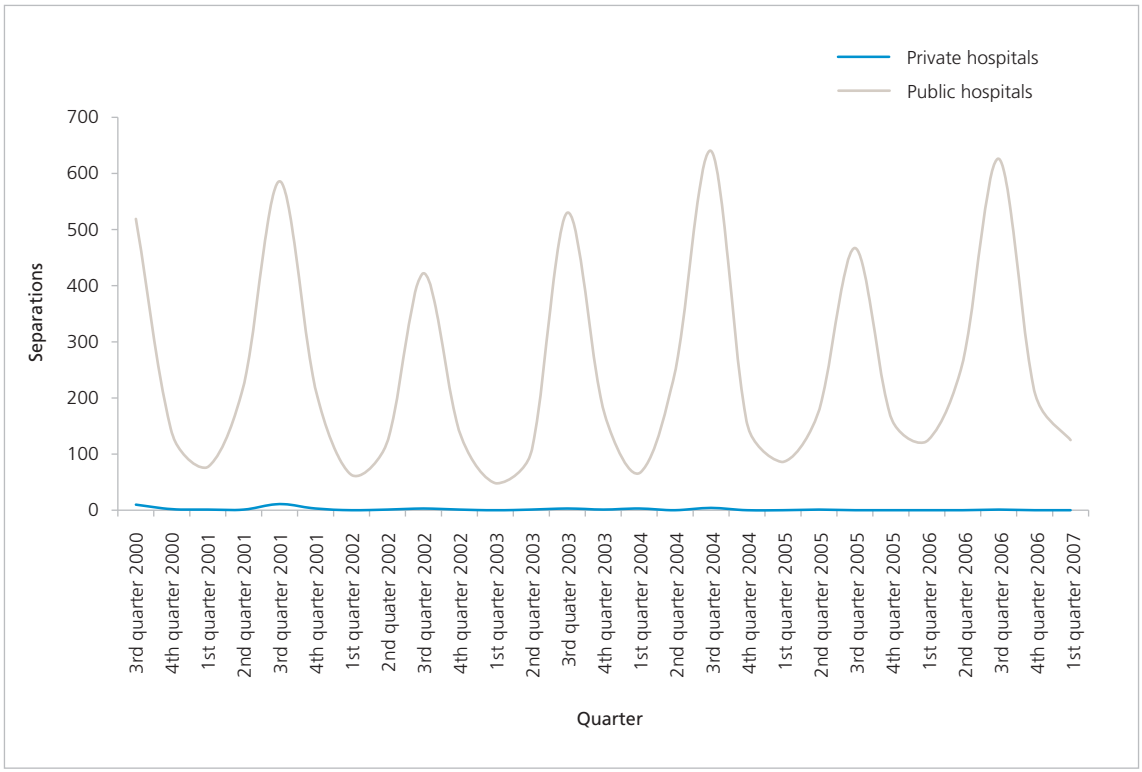
Graph 7.7.2 Quarterly separations for uncomplicated bronchitis and asthma



Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

It is difficult to diagnose asthma in infants, and separations for another common diagnosis — acute bronchiolitis — almost certainly include many infants who subsequently will be considered to be asthmatic.

Graph 7.7.3 Quarterly separations for uncomplicated acute bronchiolitis



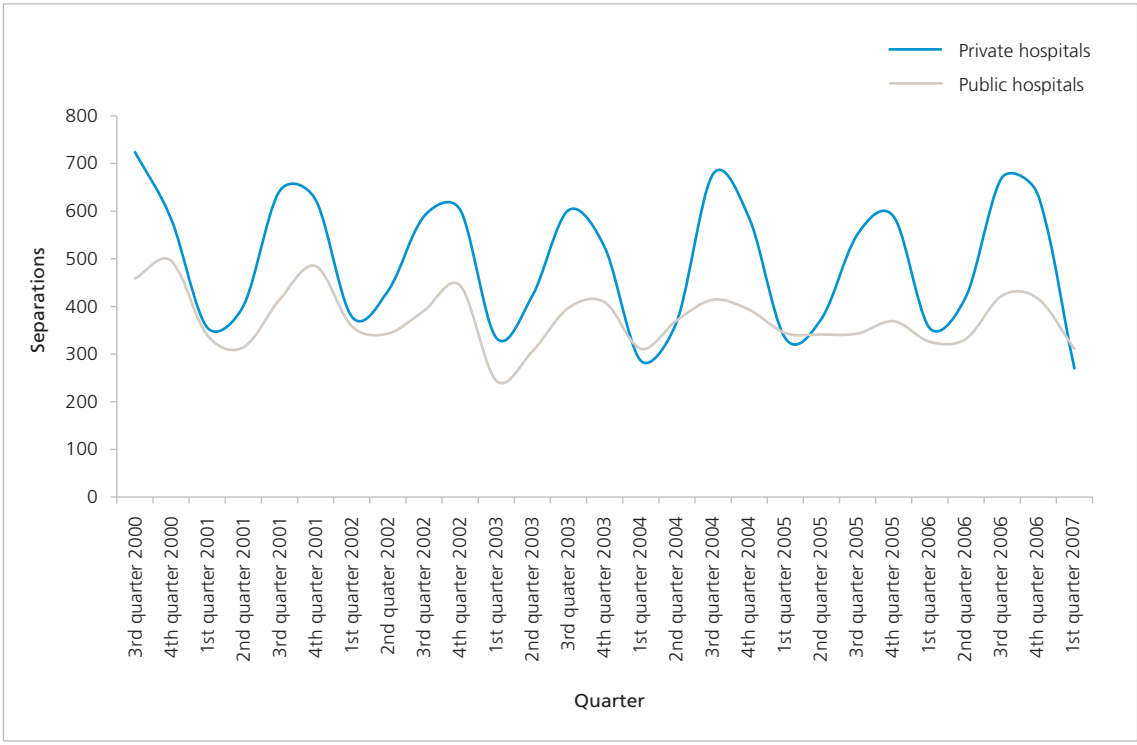
Note: A very small percentage of cases of whooping cough also may be included in these numbers.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

The graph above dramatically illustrates the seasonal nature of these separations with infectious agents in winter and early spring being held responsible. A very strong seasonal pattern also is evident in separations for 'croup' (laryngotracheitis and epiglottitis with typically over 600 separations per year), although peaks occur earlier in late autumn and early winter.

The most commonly performed surgical procedures in paediatrics are the removal of tonsils and/or adenoid glands (tonsillectomy/adenoidectomy), and the insertion of tubes or grommets to facilitate drainage of fluid from the ear (myringotomy). Substantial proportions of these procedures are performed in private hospitals. Approximately equal numbers of tonsillectomies/adenoidectomies were performed in the private and public hospitals in the past; in recent years, however, the number of myringotomies performed in private hospitals has outstripped those undertaken in public hospitals.

Graph 7.7.4 shows that between 3 200 to 3 600 myringotomies have been performed each year in South Australia since 2000. The number of instances of this surgery was higher before 2000.

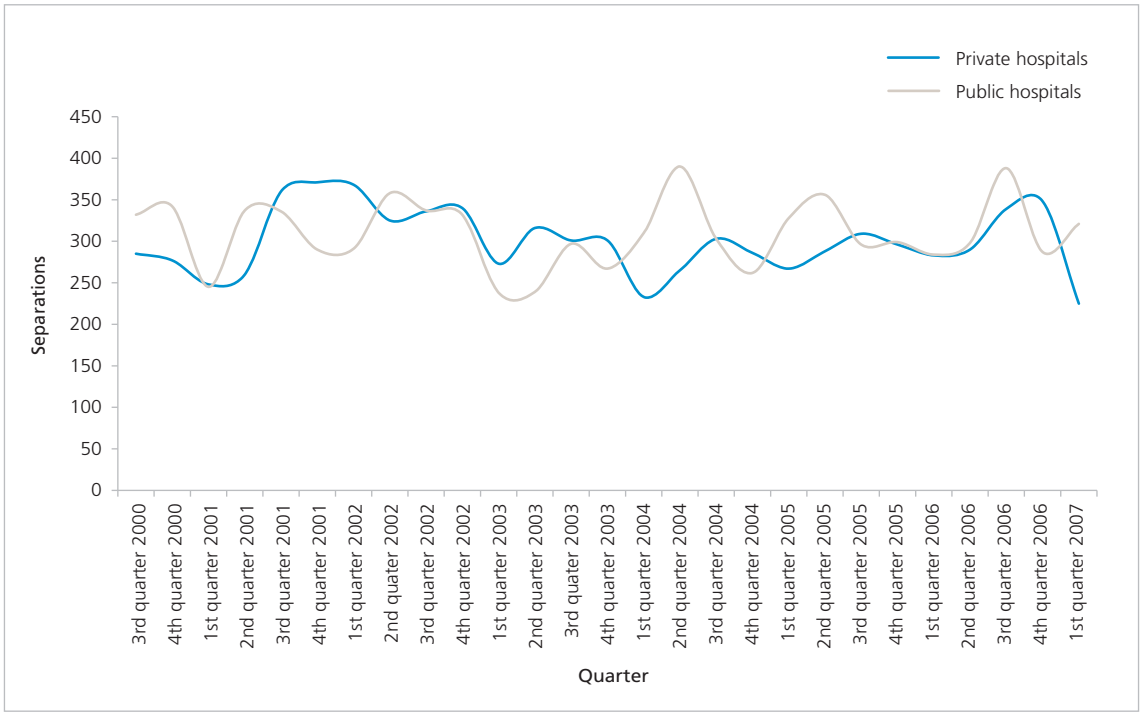
Graph 7.7.4 Quarterly separations for myringotomy with tube insertion



Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

A similar pattern of surgical intervention is evident in the removal of tonsils and adenoids (Graph 7.7.5). Between 2 200 and 2 700 children have undergone the procedure annually for the past six years, with approximately equal numbers performed in private and public hospitals. The procedure is undertaken for recurrent throat infections, or to assist children with breathing problems and sleep disorders.

Graph 7.7.5 Quarterly separations for tonsillectomy/adenoidectomy



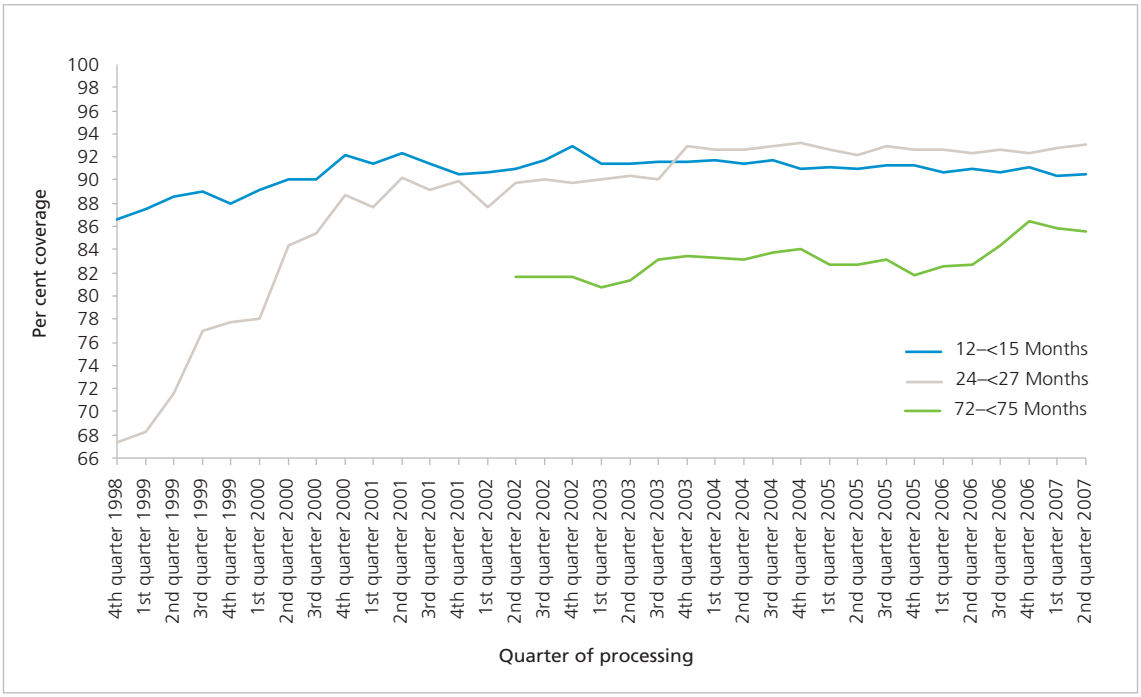
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

7.8 Immunisations

It is recommended that, during the first few years of life, all children be immunised against organisms responsible for hepatitis B, diphtheria, tetanus, whooping cough, poliomyelitis, chickenpox, measles, mumps, rubella, meningococcal disease and (pneumococcal) pneumonia, as well as against infections by the *Haemophilus influenzae* type b bacterium, and rotavirus (gastroenteritis). A national immunisation schedule can be viewed at the Australian Government's immunisation web site.[7] Many of these vaccinations occur in the first 24 months of life, with some repeats and boosters required in subsequent years.

The success of an immunisation program can be measured both in terms of the degree to which the population participates, and by the incidence of the communicable diseases at which the program is aimed. Participation statistics are published quarterly by the Australian Childhood Immunisation Register (ACIR); the following graph shows the percentage of children vaccinated at the highest level appropriate for three different age groups.

Graph 7.8.1 Immunisation coverage in South Australian children



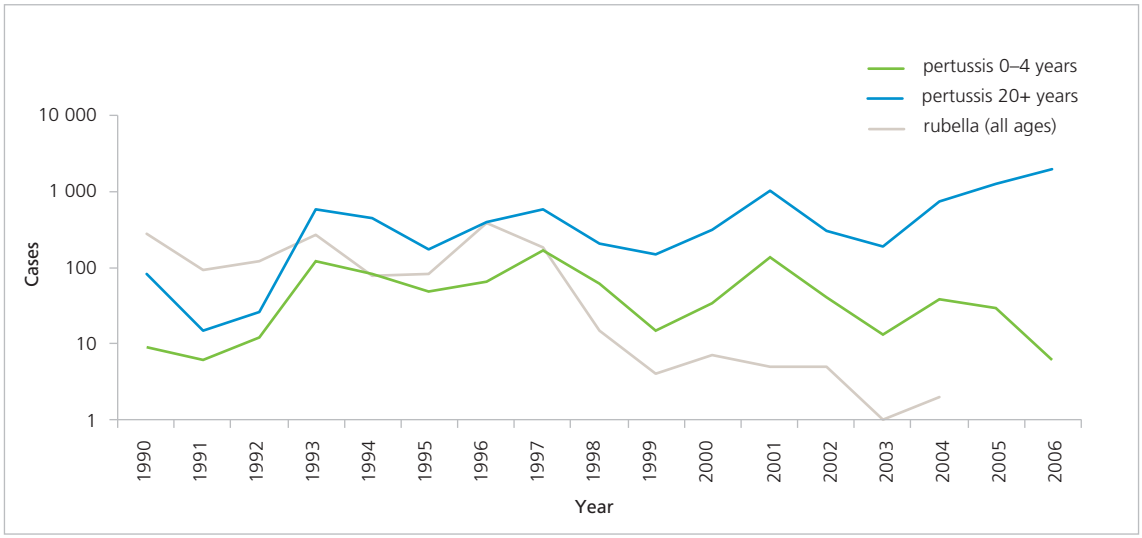
Source: Redrawn from Australian Childhood Immunisation Register's web site[8].

It can be seen that in excess of 90 per cent of all South Australian children have had appropriate immunisations by the time they turn two-years-old, or shortly thereafter. Around 86 per cent of children as of June 2007 have complied with the required schedule by six years of age, an increase from 82 per cent in December 2005.

Rubella, or German measles, can have a catastrophic effect on the unborn child. Annual figures for the number of notifications to the South Australian Department of Health (all ages) of new cases of rubella demonstrate the effectiveness of introducing more intensive rubella vaccination programs in South Australia. The recommended immunisation schedule from 1994 was to vaccinate all males and females at 12 months of age and again at 10–16 years. Immunisation of Year 8 students began in South Australia in 1995. All children (the primary transmission group) now are offered rubella vaccinations at one and four years of age, in combination with a measles and mumps vaccine; the annual number of notifications has been extremely low since 1997 (Graph 7.8.2). Rubella is a rare occurrence now in South Australia.

A more complex picture is emerging with respect to pertussis, or whooping cough. Notifications now show that childhood vaccinations against this disease do not provide lifelong protection, and increasing numbers of infections in people over the age of 20 have been observed in recent years. Children under the age of 5 continue to show a declining incidence of whooping cough (Graph 7.8.2), but the problem of increasing incidence in adults highlights the need for infants to receive their vaccinations as soon as they reach the recommended age.

Graph 7.8.2 Whooping cough (pertussis) and German measles (rubella) in South Australia, 1990–2006



Note: 2005 data unavailable for rubella.
Source: SA Health, Communicable Disease Control Branch.

7.9 Mental health and wellbeing of young people in South Australia

Approximately 14 per cent of children and adolescents suffer from mental health problems. Only a minority of those with problems receive professional help. Administrative or medical databases as a result cannot provide accurate information about the true prevalence of mental health problems in the community.

Sawyer et al. published the results of a nationwide community survey[9] aimed at determining:

- how many children and adolescents in Australia have mental health problems?
- what is the nature of these problems?
- what is the degree of disability associated with these problems?
- what are the services used by children and adolescents with mental health problems?

This survey remains the best and only resource for gauging the prevalence of mental health problems amongst Australia's young people. The number of participants in South Australia is insufficient to provide an accurate estimate of the prevalence of mental health problems among young people in this state, although 4 500 children and adolescents across the nation participated in the survey; consequently, the findings reported here are not South Australian specifically. These findings nevertheless are similar in several aspects to those reported in the Western Australian Child Health Survey.[10]

The prevalence of total mental health problems, externalising problems (antisocial or under-controlled behaviour, such as delinquency or aggression), and internalising problems (inhibited or over-controlled behaviour, such as anxiety or depression) is shown in the following table.

Table 7.9.1 Estimates of the prevalence of mental health problems in males and females aged 4–12 and 13–17 years, June 2006

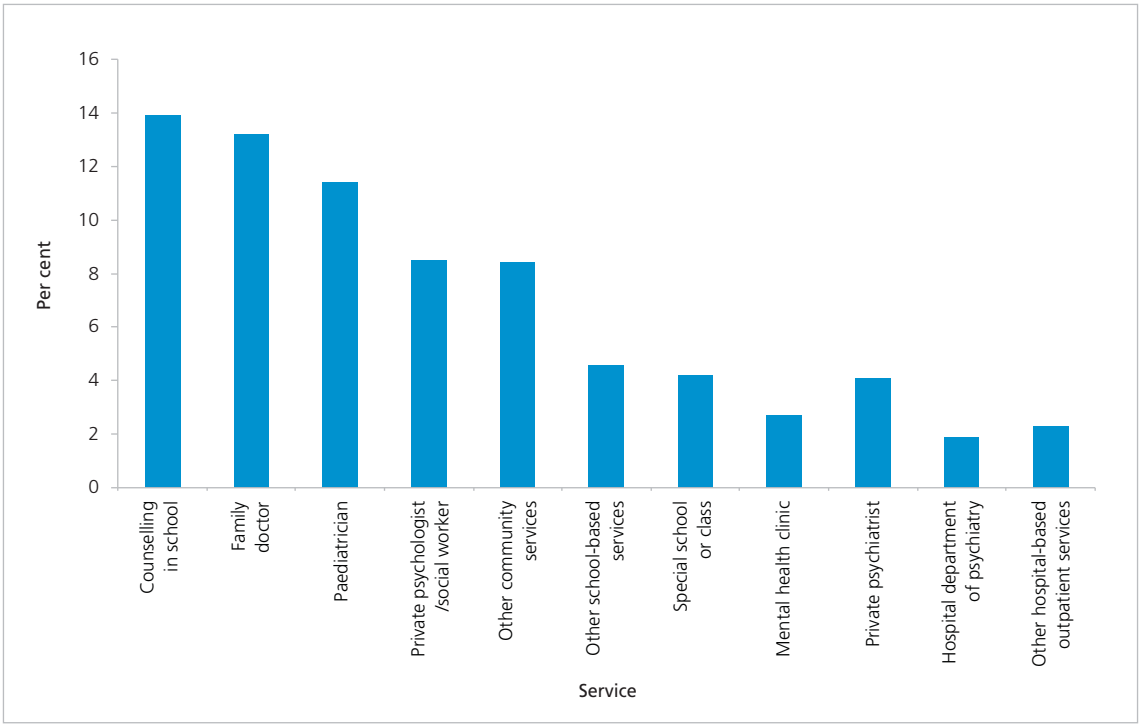
	Total problems		Externalising problems		Internalising problems	
	per cent	Population estimate	per cent	Population estimate	per cent	Population estimate
All children	**14.1**	**38 289**	**12.9**	**35 030**	**12.8**	**34 759**
Males (by age years)						
4–12	15.0	13 080	13.6	11 859	15.0	13 080
13–17	13.4	7 004	11.7	6 115	13.6	7 108
Females (by age years)						
4–12	14.4	11 985	12.2	10 154	11.3	9 405
13–17	12.8	6 254	14.1	6 890	10.7	5 228

Source: The Child and Adolescent Component of the National Survey of Mental Health and Wellbeing.[9]

Estimates of the number of children with mental health problems in South Australia are based on the total numbers of children living in the state at the time of the 2006 Census.

It can be seen in Graph 7.9.1 following that among children and adolescents who were identified as having a mental disorder, school counsellors, family doctors and paediatricians were the most frequently used source of help and advice; however, only 29 per cent of the children and adolescents in this cohort attended any service at all.

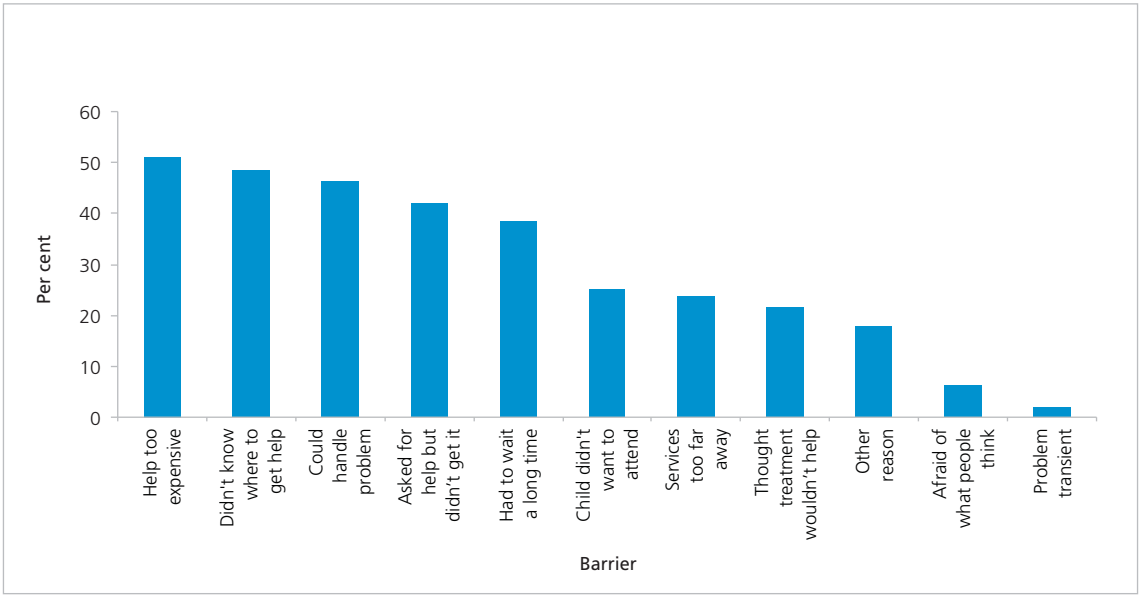
Graph 7.9.1 Service use by children and adolescents with a mental disorder



Source: Sawyer et al., 2000.

Graph 7.9.2 below shows the reasons parents gave to explain why children and adolescents who met the criteria for needing help (having a mental disorder *and* scoring in the clinical range on the Child Behaviour Checklist[11,12], *and* whose parents reported that they needed professional help) did not attend a professional service to get help. Approximately 50 per cent of the parents reported that help was too expensive or that they did not know where to get it.

Graph 7.9.2 Barriers to obtaining professional help



Source: Sawyer et al., 2000.

7.10 Children and adolescents with physical disabilities

The authors of the South Australian Paediatric Rehabilitation Implementation Plan[13] found that there is no simple way of estimating the numbers of children living with disabilities sufficiently severe as to require paediatric rehabilitation.

Conditions likely to generate a demand for rehabilitation services include birth defects and chromosomal abnormalities, and acquired brain damage.

Brain damage is acquired from head injuries, severe infections involving the brain (meningitis, encephalitis), reduced oxygen to the brain for any reason (including near-drowning), some brain tumours, and complications of inborn errors of metabolism. The Australian Institute of Health and Welfare has estimated that there are 4.5 children per 1 000 in the 0–14 year age group with acquired brain damage.[14] The total number of children and adolescents in South Australia, with acquired brain damage, based on the 2006 Census is 1 534, assuming the same rate applies across all 0-17 year-olds.

Around 38 children are diagnosed with cerebral palsy in South Australia each year[15] and the number of 0-18 year-olds with cerebral palsy in this state has been estimated at around 684. It should be noted, however, that close to two-thirds of these children will have only relatively mild cerebral palsy.

Table 7.10.1 Estimates of the numbers of children in South Australia requiring rehabilitation services

Conditions requiring rehabilitation services in 2004	Estimated number of 0–18 year olds South Australians in 2004
Acquired Brain Injury	1 667
Deformations and chromosomal abnormalities	1 703
Cerebral palsy	684
Total	**4 054**

Source: SA Health, South Australian Paediatric Rehabilitation Implementation Plan 2007

7.11 Services and initiatives

7.11.1 Case load midwifery

Midwifery Group Practice (MGP) is a continuity model of midwife care in which each midwife cares for 40 women per year, across the continuum of pregnancy, labour, birth and up to six weeks post-natally. The principles underpinning this model of care are the relationship between the woman and the midwife, continuity of care, and the collaboration with other health care providers.

MGP began in January 2004 and over 2 500 women to-date have received care under this model. The clinical outcomes are very favourable for women receiving MGP care compared with other women attending the Women's and Children's Hospital (WCH). Women receiving MGP care have less caesarean sections, less instrumental births, less inductions of labour, less epidurals in labour and less episiotomies. More babies stay with their mothers and go directly to the Postnatal Ward and women receiving MGP care are discharged earlier from hospital.

A formal evaluation of the MGP model of care demonstrated that the satisfaction of midwives working in this way was high, and women were very satisfied with their care.

7.11.2 Family Home Visiting

The Family Home Visiting program provides a series of visits by a child health nurse over the first two years of a child's life. The nurses build relationships with the families and work closely with other service providers to broker appropriate support for families assessed as requiring additional help. The aim of the program is to enhance child development and parental attachment, thus improving health and wellbeing. Entry into the Family Home Visiting program is through assessment provided by the Universal Contact Program operating across South Australia. Universal Contact provides the family of every newborn with a visit in the first two weeks of life, to undertake a child health enrolment, health check, and an assessment of risk and need. Family Home Visiting currently is being offered — based on an assessment of capacity to benefit — to families with a baby where the primary caregiver is under 20 years of age and/or socially isolated and/or where the baby is of Aboriginal or Torres Strait Islander descent and/or where the relationship between a mother and her baby is considered to be poor.

7.11.3 The Parent Helpline

The Parent Helpline and Youth Healthline provide telephone-based services across South Australia, 24-hours-a-day, every day of the year. Nursing and social work staff are supported by specifically trained volunteers and, in August 2005, the services celebrated 10 years of volunteer support. Calls to the Contact Centre Services in 2006 numbered 133 000.

The web site at <www.cyh.com> is one of the most successful health information sites in Australia and currently hosts more than 900 topics. The site has sub-sites for parenting and child health, kids' health, teen health and young adults. Staff provide information and support on a wide variety of issues relating to parenting, from birth of a child to them being 25 years-old. Topics include breastfeeding, sleep issues in the under-the-12-month-old child, toddler behaviour, schoolyard bullying, sibling rivalry, sexuality, drugs and alcohol, safety, suicide, depression, relationships and self-harm. The site had 2 170 000 visits in 2005–06.

7.11.4 Parenting Services

The Parks Children's House is a hub for community activity. The Children's House aims to improve health and learning outcomes for children by providing a range of integrated collaborative services that support community participation. Families using more than one service can have their needs met in a coordinated manner. On-site services include Child and Adolescent Mental Health Service, an outpatient clinic and the Parenting Network.

Kids 'n' You, located at Elizabeth Grove Primary School, is an early intervention program for families and children aged up to five years-old who have experienced the effects of domestic violence, mental health issues and childhood abuse.

7.11.5 Neonatal Hearing Screening

Permanent bilateral hearing impairment has a major impact on a child's speech and language and social development. Early detection of hearing impairment, coupled with an appropriate early intervention, is critical to speech, language and cognitive development.[16] The development of new screening technologies involving the measurement of echoes from the hair cells within the ear (oto-acoustic emissions), and of electrical brain activity following stimulus with sounds, has meant that congenital hearing impairment now can be readily detected in the newborn infant, and appropriate hearing aids can be fitted before the child's development is significantly delayed. All parents in South Australia are now offered a hearing test for their new baby, following the successful trialing of a screening service in this state in 2002 and 2003.

7.11.6 Immunisation against rotavirus

All babies born on or after 1 May 2007 now are offered an oral rotavirus vaccine; three doses are recommended. The first dose is to be given by the 12th week of life; the second at four months and the third at around 6 months but, in any event, before 32 weeks. Rotavirus infection is a major cause of small children being hospitalised with gastroenteritis.

7.12 Notes

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8 Older people

In this chapter

Summary

- The chronic condition with the highest prevalence for older men is arthritis, followed by cardiovascular disease and diabetes. The most prevalent chronic conditions for older females are arthritis, osteoporosis and cardiovascular disease.
- The number of occupied bed days for older people in hospital for chronic disease was highest for 'care involving dialysis' (an indicator for chronic kidney disease), followed by chronic obstructive pulmonary disease and stroke.
- Dementia and Alzheimer's disease are the leading causes of the morbidity burden in older people of both genders and accounted for 17.7 per cent of the total years lost due to disability. Women registered a greater burden from these conditions, however, because of their longer life span.
- Death rates for older people declined quite significantly over the period from 1995 to 2004. The greatest decline was in the 65–74 year age group, by 31 per cent for males (from 2 768 to 1917 per 100 000), and by 28 per cent for females (from 1 488 to 1 077 per 100 000).
- Patients aged 65 and over accounted for 38 per cent of all hospital separations in 2006–07 and for 51 per cent of all patient days, yet older people account for only 15 per cent of the state's population.
- It is estimated that approximately 11 per cent of people aged 65+ years have a current doctor-diagnosed mental health condition.
- There were 9 095 separations in both private and public hospitals as a result of falls by older people during 2006–07. Females accounted for 68.2 per cent of these hospitalisations, and males 31.8 per cent. The average length of stay for fall-related injuries was 9.6 days.
- The majority of older people in South Australia live with their marital partner, or live alone.
- A total of 858 older people received a transition care package of support during 2006–07.
- The number of South Australian community aged care places increased 15.9 per cent from 2 996 at June 2005 to 3 472 places at June 2006.
- The number of operational residential aged care places increased 2.3 per cent from 15 640 at June 2005 to 15 994 places at June 2006.

Introduction

The South Australian population aged 65+ years has increased steadily over the past two decades and is projected to rise further over the next 15 years.

There were 240 722 people aged 65+ years in South Australia as at 30 June 2007. This figure represents 15.2 per cent of the state's entire population compared to 13.1 per cent for Australia as a whole. Females made up 56.0 per cent of this age group, with the remaining 44.0 per cent being male.

The ageing of the South Australian population is caused by three main factors. First, South Australian families are having, on average, fewer children.[10] Second, large numbers of ageing 'baby boomers' are entering into their senior years. Third, increasing life expectancy is contributing to the ageing population. The increase in life expectancy has resulted in more people surviving to an older age, hence modifying the age structure of the state's population.[9]

The increase in life expectancy, as well as the decrease in mortality, is a result of improved access to medical services and medical techniques, and the practice of healthier diets and lifestyles.[11]

The results of the 2004–05 National Health Survey (NHS) by the Australian Bureau of Statistics (ABS), showed that two-thirds of older South Australians self-reported as having good, very good or excellent health.[5] As a result, many older people remain involved in community activities such as voluntary and paid employment, and extended family support, as well as participating in community social, sporting and cultural activities.[4]

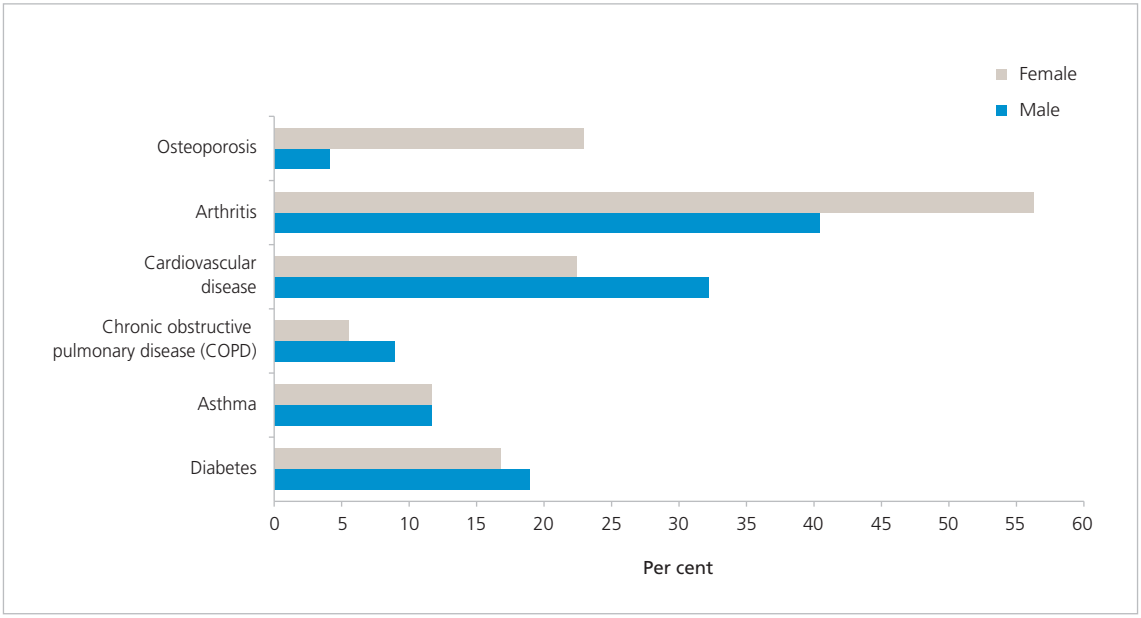
Older Australians are an important and rapidly growing group within South Australia. This chapter gives an overview of the health status of people aged 65+ years.

8.1 Chronic diseases

Chronic diseases cause a heavy burden on communities, including individuals and health service providers such as hospitals, because these conditions generally are long-term.[12]

The control of infectious diseases, along with changes to demographic factors and living and working conditions, and increases in the prevalence of risk factors, have seen chronic diseases grow in relative importance.[12]

Graph 8.1.1 Prevalence of chronic conditions for older people, South Australia, 2006–07

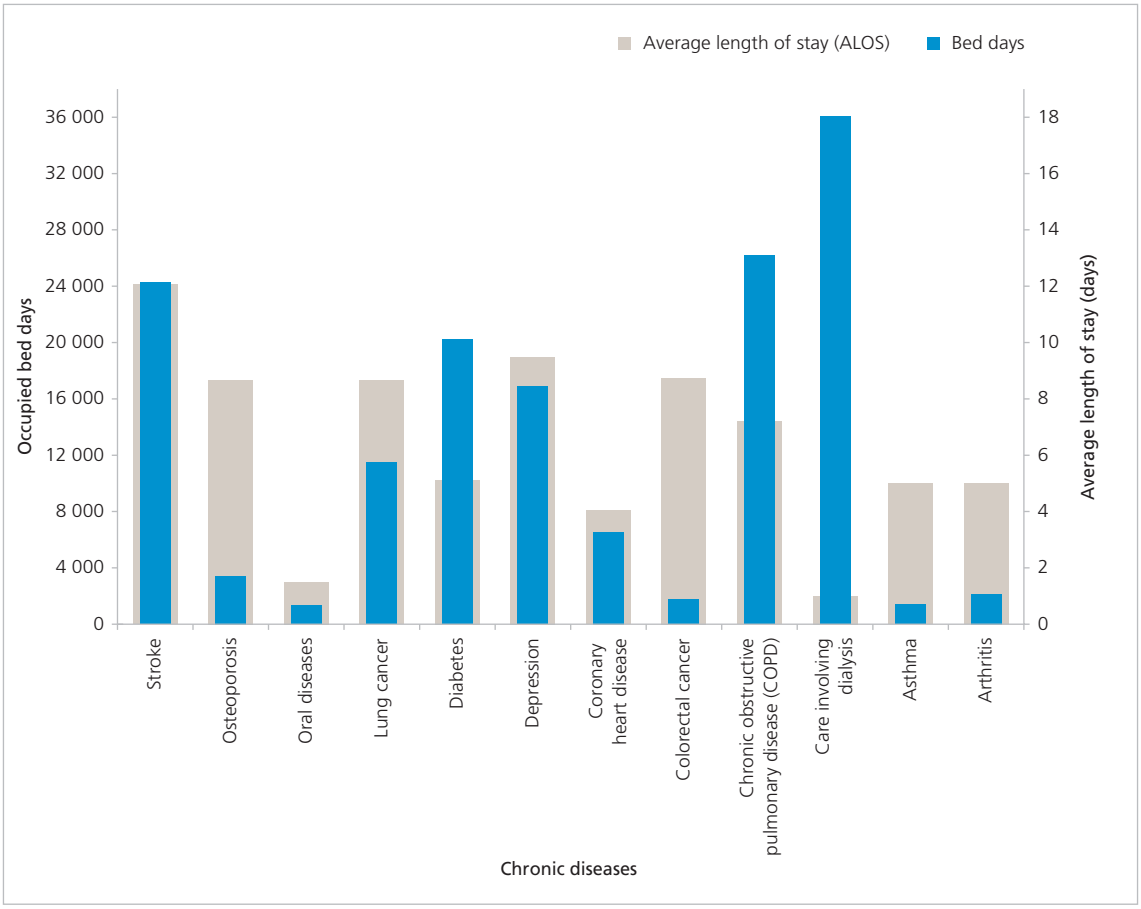


Note: Chronic conditions were determined by asking respondents if they had ever been told by a doctor that they had diabetes, asthma, chronic obstructive pulmonary disease (COPD), cardiovascular disease, arthritis or osteoporosis. Asthma is defined according to the Australian Centre for Asthma Monitoring (ACAM) definition[3] of whether respondents had ever been told by a doctor that they had asthma, and had experienced symptoms (wheeze, shortness of breath or chest tightness) of asthma in the last 12 months or had taken treatment for asthma in the last 12 months.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 65+ years.

The results from the 2006–07 SAMSS survey indicate the highest prevalence of chronic conditions — of the selected conditions in the survey — for older men was arthritis (40.4 per cent), followed by cardiovascular disease (32.2 per cent) and diabetes (18.9 per cent). The most prevalent chronic conditions for older females were arthritis (56.3 per cent), osteoporosis (22.9 per cent) and cardiovascular disease (22.4 per cent).

Males were more likely than females (based on the SAMSS) to report having COPD (8.9 per cent compared to 5.5 per cent) and cardiovascular disease (32.2 per cent compared to 22.4 per cent), while females were more likely than males to report having arthritis (56.3 per cent compared to 40.4 per cent) and osteoporosis (22.9 per cent compared to 4.1 per cent). People aged 80+ years were more likely to report having cardiovascular disease compared to people in younger age groups (31.9 per cent compared to 28.8 per cent for 70–79 year-olds and 18.1 percent for 65–69 year-olds) and osteoporosis (19.7 per cent compared to 14.6 per cent and 9.7 per cent).

Graph 8.1.2 Occupied bed days for chronic diseases, South Australia, 2006–07



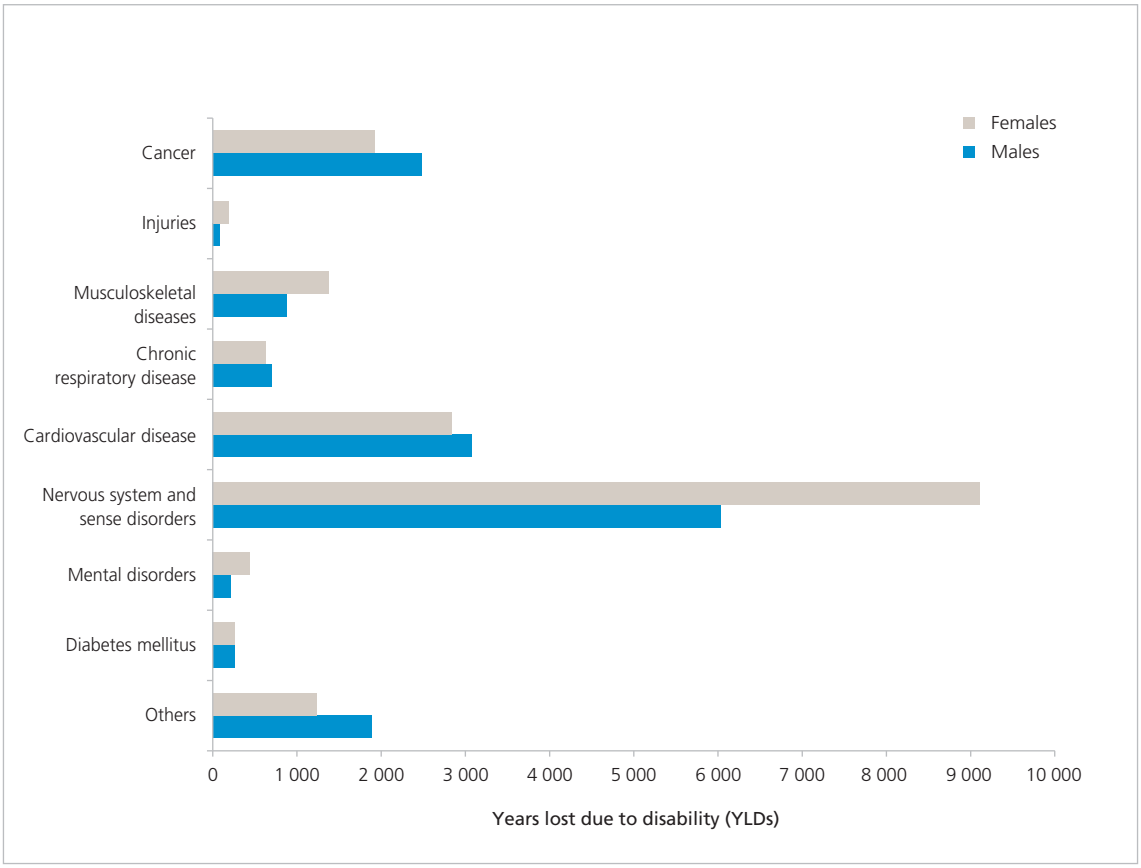
Note: Includes both public and private hospitals in South Australia. Codes are based on ICD–10AM.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

The number of occupied bed days (OBDs) during 2006–07 was highest for 'care involving dialysis' (36 072 days), followed by COPD (26 167 days) and stroke (24 251 days). The number of OBDs is high for dialysis because patients with chronic kidney disease often require frequent dialysis treatments in hospital. The average length of stay (at one day) in hospital for care involving dialysis, however, was the shortest of the 12 chronic diseases.

Hospital stays for oral diseases likewise were relatively short, averaging 1.5 days, as most of these are for dental procedures which usually do not require a long post-operative recovery period.[8] Stroke, depression, colorectal cancer, lung cancer, COPD and osteoporosis — at the other end of the scale — each had an average length of stay of more than 7 days.

8.2 Main years of life lost due to disability

Graph 8.2.1 Burden of Disease, three-yearly average estimates for older people, South Australia, 2001–2003



Source: SA Health, South Australian Burden of Disease Study.

Years lost due to disability (YLD) is a measure of the morbidity burden of a disease. YLDs represent the number of 'healthy' years of life lost due to disability. Disability refers in this definition to any departure from an ideal health state. For a detailed description of YLD, refer to the glossary.

The graph above shows the YLD contributions for the major disease groups and injury among older people during 2001–2003. Nervous system and sense disorders are the leading cause of YLD, accounting for 45.1 per cent of the non-fatal burden of disease. The main conditions within this category were Dementia and Alzheimer's disease, adult-onset hearing loss, and age-related vision disorders.[2]

Cardiovascular disease was responsible for 17.6 per cent of the disability burden, with the core conditions being ischaemic heart disease and stroke. Cancer accounted for 13.1 per cent, mainly comprising colorectal and prostate cancers.[2]

The disability burden overall was higher for older females (53.5 per cent) than for males (46.5 per cent). The non-fatal burden of nervous system and sense disorders, mental disorders and musculoskeletal disorders are all higher for females than for males. The male burden is higher, however, for cardiovascular disease, chronic respiratory diseases and cancers.[2]

The analysis above is based on years lost due to disability for major disease groups and injury. Three gender differences were noticeable at the specific condition level:

- age-related vision disorders accounted for 3.2 per cent of total morbidity burden for older males, compared with 10 per cent for older females (more than three times greater)
- adult-onset hearing loss was almost twice as high for older males (10.2 per cent) than for older females (5.7 per cent)
- Parkinson's disease accounted for 4.1 per cent of total morbidity burden for older males, compared with 6.8 per cent for older females.

Table 8.2.1 Top causes of morbidity burden (YLD) by gender and condition, South Australia, 2001–2003 (three-year average)

Males			Females		
Condition	YLD	Per cent	Condition	YLD	Per cent
Dementia and Alzheimer's disease	2 242	14.4	Dementia and Alzheimer's disease	3 695	20.6
Adult-onset hearing loss	1 587	10.2	Age-related vision disorders	1 805	10.0
Stroke	1 280	8.2	Parkinson's disease	1 216	6.8
Ischaemic heart disease	1 015	6.5	Osteoarthritis	1 135	6.3
Other nervous system disorders	837	5.4	Stroke	1 050	5.8
Osteoarthritis	762	4.9	Adult-onset hearing loss	1 029	5.7
Prostate cancer	735	4.7	Ischaemic heart disease	993	5.5
Parkinson's disease	641	4.1	Other nervous system disorders	776	4.3
Chronic obstructive pulmonary disease	587	3.8	Breast cancer	572	3.2
Benign prostatic hypertrophy	511	3.3	Chronic obstructive pulmonary disease	424	2.4
Age-related vision disorder	500	3.2	Colorectal cancer	379	2.4

Source: SA Health, South Australian Burden of Disease web site.

8.3 Mortality

One of the strongest indicators of the improving health of older South Australians is falling death rates. Death rates for older people declined quite significantly over the period from 1995 to 2004. The greatest fall was in the 65–74 year age group, by 31 per cent for males (from 2 768 to 1 917 per 100 000), and by 28 per cent for females (from 1 488 to 1 077 per 100 000). There was almost as great a reduction for the 75–84 year age group. Among males aged 85+ years, death rates declined by 15 per cent, from 17 632 to 15 019 per 100 000 males, similar to the 14 per cent decline for females, from 14 132 to 12 151 per 100 000 females.

Table 8.3.1 Age-specific deaths per 100 000 males and females for persons aged 65+ years, all causes and selected conditions, South Australia, 1995, 2000 and 2004

	Males				Females			
	1995	2000	2004	per cent increase 1995–2004	1995	2000	2004	per cent increase 1995–2004
All causes								
65–74	2 768	2 436	1 917	-31	1 488	1310	1 077	-28
75–84	7 312	6 498	5 404	-26	4 554	3964	3 492	-23
85+ years	17 632	16 486	15 019	-15	14 132	13 563	12 151	-14
Circulatory system diseases								
65–74	1 129	909	617	-45	602	404	265	-56
75–84	3 454	2 675	2 022	-41	2 386	1 814	1 340	-44
85+ years	9 432	7 741	6 371	-32	8 733	7 340	6 153	-30
Malignant neoplasms								
65–74	1 024	999	813	-21	546	514	498	-9
75–84	1 961	1 939	1 646	-16	993	892	982	-1
85+ years	3 349	3 078	2 960	-12	1 224	1 583	1 338	9
Respiratory diseases								
65–74	236	176	154	-35	106	120	90	-15
75–84	752	850	718	-5	280	395	375	34
85+ years	1 694	2 847	2 382	41	811	1 536	1 369	69
Nervous system diseases								
65–74	37	29	43	16	39	33	40	1
75–84	173	98	125	-28	146	97	104	-29
85+ years	539	285	428	-21	466	259	408	-13
Musculoskeletal conditions								
65–74	2	4	9	406	13	21	5	-61
75–84	27	28	30	11	36	29	24	-33
85+ years	58	54	92	60	138	106	108	-21

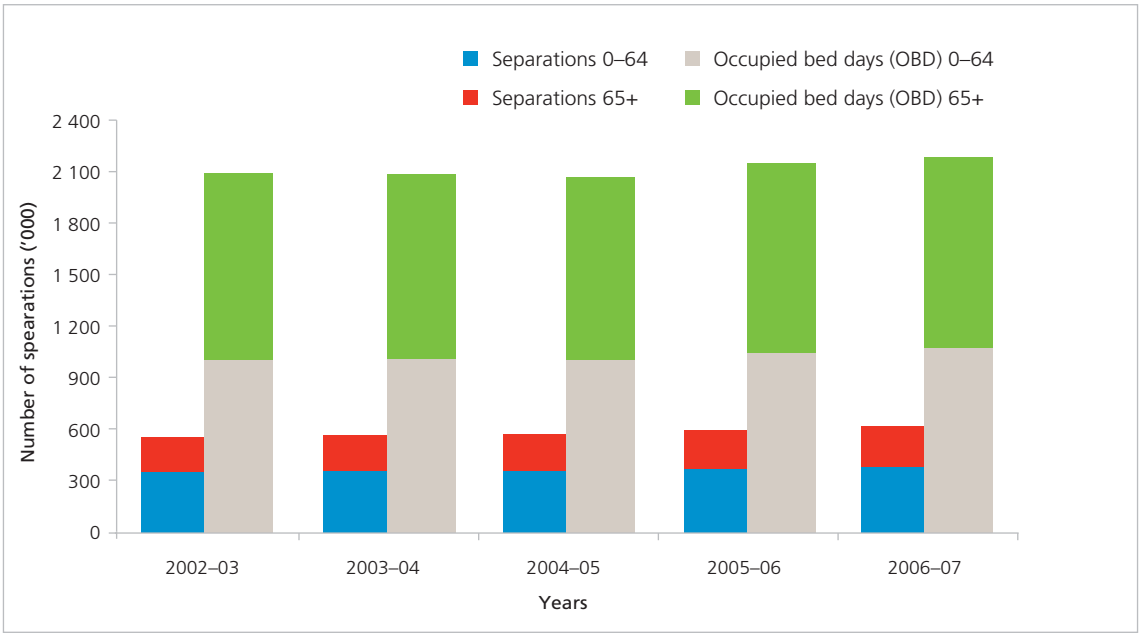
Note: Categories are derived using ICD–10AM.
Source: Australian Bureau of Statistics, Deaths Data.

Most of the overall reduction in age-specific death rates from 1995 to 2004 was due to a decline in the death rates for circulatory system diseases.[4] The age-specific death rates for males for circulatory system diseases have fallen by 45 per cent for 65–74 year-olds, 41 per cent for 75–84 year-olds and 32 per cent for those aged 85+ years. The reductions in the rates for females were very similar.[4]

Age-specific death rates for malignant neoplasms also declined; however, the rate of decline was much greater for males than for females. The death rates for males declined by 21 per cent, 16 per cent, and 12 per cent for the age ranges of 65–74, 75–84 and 85+ years respectively. There was a decline for females of 9 per cent for 65–74 year-olds, 1 per cent for 75–84 year-olds, and 9 per cent in women aged 85+ years.

8.4 Hospitalisation

Graph 8.4.1 Older people hospital separations and occupied bed days, South Australia



Note: Includes both public and private hospitals in South Australia.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

Older South Australians account for a large number of hospital separations. They have a higher rate of admission to hospital than do younger people, and have a tendency to stay longer. Patients aged 65+ years accounted for 233 329 hospital separations (38 per cent of all separations) and 1 111 092 patient days (51 per cent of all patient days) in 2006–07. Older men and older women accounted for roughly equal numbers of separations (118 789 and 114 539 respectively), but women predominated in terms of patient days (504 447 for men and 606 642 for women).

Hospital separations for older people in South Australia have increased from 198 883 in 2002–03 to 233 329 in 2006–07 (17 per cent). Most of the increase is attributed to same-day separations, which increased from 93 534 to 118 686 (27 per cent). The growth in overnight stay separations was more modest, from 105 349 to 114 643 (9 per cent).

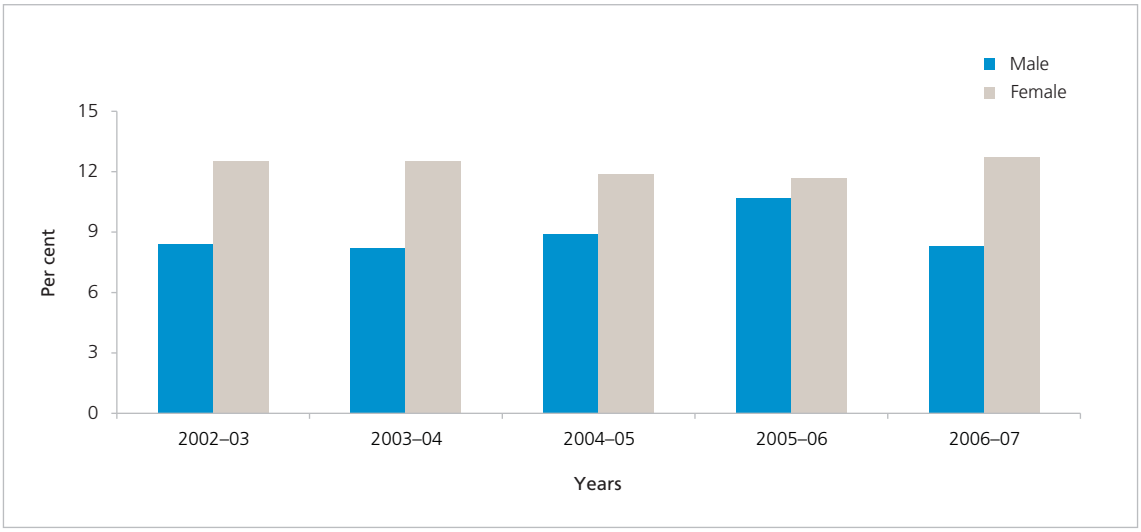
Public hospitals accounted for 62 per cent of separations for older people, and 72 per cent of patient days during 2006–07. The average length of stay in public hospitals was 5.6 days, compared with 3.5 days for private hospitals. It is evident that the average length of stay in hospital increases with age. The average stay for males was 3.7 days for those ages 65–74 years, 5.2 days for the 75–84 age group and 8.6 days for those aged 85+ years. The average stay for females increased from 4.0 days for those aged 65–74 years, to 6.3 days for the 75–84 age group, and 10.8 days for those aged 85+ years.

The most common 'same-day' extended service-related groups (ESRG) for older people in public hospitals during 2006–07 were renal dialysis, chemotherapy and colonoscopies. They were renal dialysis, lens and glaucoma procedures, and colonoscopies in private hospitals. Private hospitals reported more separations for treatment of cataracts, while public hospitals reported more separations for treatment of dementia, depression, cardiovascular disease and renal disease.

The most common 'overnight' ESRGs for older people in public hospitals were for treatment of chronic respiratory diseases including bronchitis, emphysema and chronic obstructive airways disease. Non-acute rehabilitation and diseases of the digestive system including oesophagitis, gastroenteritis and other miscellaneous diseases also were common causes of overnight ESRGs. Non-acute rehabilitation also was a common overnight ESRG for older people treated in private hospitals. Orthopaedic surgery involving hip and knee replacements was more common in private than public hospitals.

8.5 Mental health

Graph 8.5.1 Prevalence of current diagnosed mental health condition for older people, South Australia



Note: Current diagnosed mental health condition is determined if the respondent was diagnosed with a mental health condition such as anxiety, depression, a stress-related problem, or any other mental health problem in the last 12 months, or was currently receiving treatment for a mental health condition.
Source: SA Health, South Australian Monitoring and Surveillance System (SAMSS), 65+ years.

Good mental health is an important aspect to an individual's social connections and support networks, which can influence their overall health and wellbeing. The majority of older people experience good mental health that enables them to cope better with any deterioration in physical health.

The types of mental disorders as people age can vary. The prevalence of anxiety or substance abuse, for example, declines as people get older, whereas other disorders such as dementia can occur more frequently. The increase in the levels of dementia reported is due to longer lifespans, but it also is partly to do with higher levels of awareness, reporting and diagnosis. The prevalence of depression is less common in older people, but is a predictor of premature death and is more common for those who are ill, disabled or in institutions.[13]

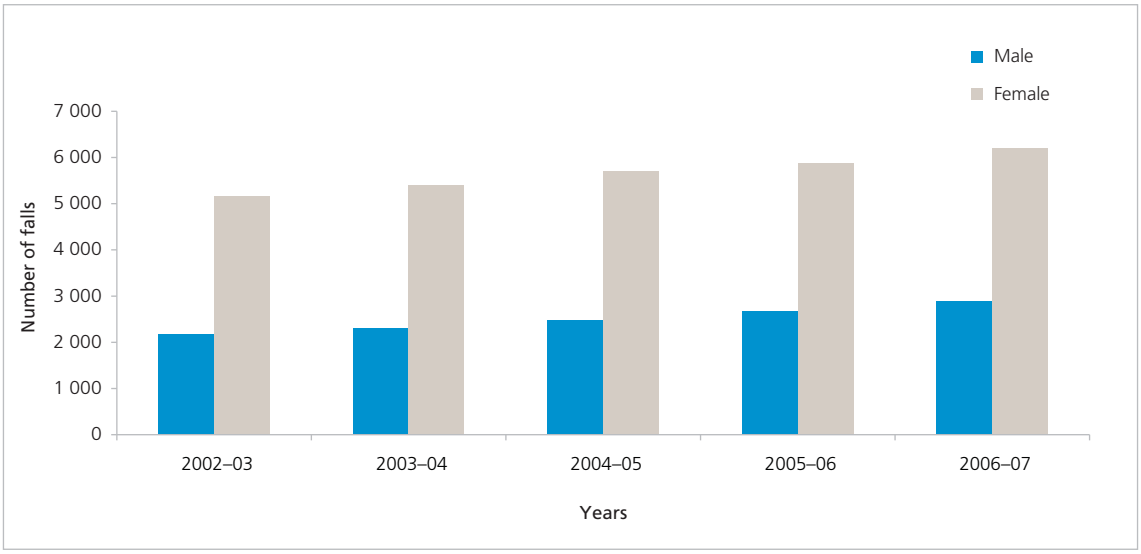
Results from the 2006–07 SAMSS show that 10.8 per cent of respondents aged 65+ years reported a current doctor-diagnosed mental health condition. Females were significantly more likely to report having a current mental health condition than were males (12.7 per cent compared to 8.3 per cent). There is a decrease in prevalence with age of current diagnosed mental health conditions from 12.3 per cent for those aged 65–69 years, to 10.5 per cent for 70–79 year olds, and 9.8 per cent for people aged 80+ years.

The proportion of South Australian older people with a self–reported current diagnosed mental health condition has not varied notably over the past five years, with 10.7 per cent in 2002–03 and 10.8 per cent in 2006–07.

The majority of older South Australians with a diagnosed mental health condition live in their usual residence, supported by general practitioners, aged health care services and general community health services. Inpatient services are provided by general and specialist psychiatric hospitals in the public and private sectors, including psychogeriatric and forensic care.[14]

8.6 Falls

Graph 8.6.1 Fall-related hospital separations for older people, South Australia



Note: Includes both public and private hospitals in South Australia.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

Falls are the most common cause of serious injury among older people within South Australia, and account for the largest proportion of all injury-related deaths and hospitalisations. The results of the 2006–07 SAMSS indicate that 29.4 per cent of respondents aged 65+ years self-reported falling at least once in the 12 months prior.

Just over 12 per cent of respondents who reported at least one fall during 2006–07 also required medical treatment for injuries, according to SAMSS, while 12.5 per cent had limited activity for more than two days, and 18.6 per cent had both medical treatment and limited activity.

The number of private and public hospital separations as a result of falls by older people during 2006–07 was 9 095. Females accounted for 68.2 per cent of these hospitalisations, and males 31.8 per cent. Hospital separation rates for falls by older people increased 6.3 per cent between 2005–06 and 2006–07.

The most frequent type of injury sustained in a fall and resulting in a hospital admission during 2006–07 was to the head (22.2 per cent), followed by injury to the hip and thigh (21.6 per cent), and injury to the elbow and forearm (11.0 per cent).

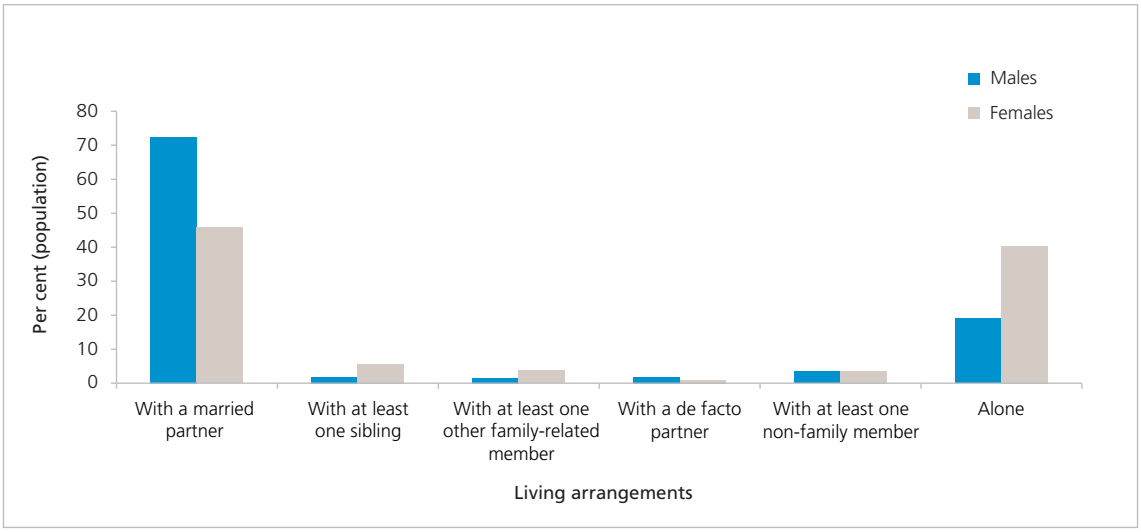
The average length of stay in hospital for older people with fall-related injuries was 9.6 days during 2006–07. The total number of occupied hospital bed-days was 87 012, representing 7.8 per cent of all hospital bed-days for this age group.

There are several reasons why people may experience a fall, such as their physical ability, medical condition, and walking ability. Effects from medication and alcohol, and the non-familiarity of the physical environment around them (for example, surfaces, lighting) additionally can result in a person falling.[16]

(See Chapter 11 for more information about falls.)

8.7 Living arrangements

Graph 8.7.1 Living arrangements of older people on 2006 Census Night, by gender, South Australia



Source: Australian Bureau of Statistics, 2068.0 Census of population and housing, relationship in household by age and sex.

The living arrangements of older South Australians are influenced by a number of characteristics such as marital, health, financial status and cultural beliefs.[6] An elderly person's requirement for accessible services or facilities can result, in some instances, in their moving out of their home, and away from their local community; this can end up being socially isolating with potential health implications.[7]

People often experience changes in their living arrangements as they age, including living as a couple, living with others (family or non-family), living alone or living in a residential aged care facility. The majority of older people continue to live in their own homes, making use of aged care assistance packages, or support from families and friends as needed.

The majority of older people live with their married partner, or live alone. Census night in 2006 identified 201 360 older people living at home in South Australia; of these:

- 57.7 per cent (116 200 persons) lived with their married partner
- 4.0 per cent (7 943) lived with at least one sibling
- 2.7 per cent (5 495) lived with at least one other family related member (for example, cousin/brother /sister et al.)
- 1.3 per cent (2 660) lived with their de facto partner (that is, not legally married)
- 3.5 per cent (6 999) lived with at least one non-family member(s)
- 30.8 per cent (62 063) lived alone.[1]

Women generally live longer than men and they tend to outlive their partners. This reality leads to differences in living arrangements between older men and women. A majority of older men lived with their married partner (72.4 per cent), with a smaller number living alone (19.0 per cent). Only 45.8 per cent of older women, by contrast, lived with their partner and 40.4 per cent lived alone.[1]

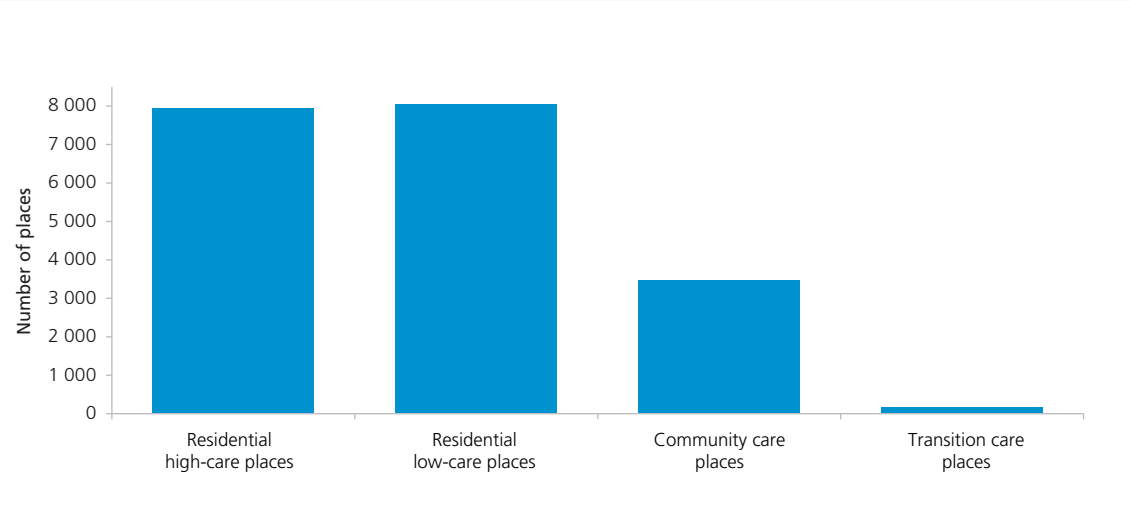
Most people are able to continue living independently in their own homes; however, as they age, their need for assistance increases. Assistance is often obtained from families, friends or community and government organisations, but some people do need to move out of their home into some form of supported accommodation (that is, into nursing homes or aged care hostels).

8.8 Services for older people

The majority of the state's older people lead independent lives well into old age requiring little or no formal support. The need for health services increases with age, however, and peaks in the last two years of life.

Older people are high users of health services and often have more complex needs because of increases in the incidence of chronic diseases and co-morbidities. There are a number of State and Australian Government services that specifically supports older people; these are designed to increase their chances of remaining at home longer and avoiding premature admission to residential care and/or admission or re-admission to hospital.

Graph 8.8.1 Total aged care places available, South Australia, as at June 2006



Source: Aged Care Statistics for South Australia.

8.8.1 Residential-based aged care

Residential aged care assists older people who can no longer manage living at home/independently. Residential aged care provides two levels of care: high and low. The level of care required for each resident is determined according to his/her assessed needs.

The number of operational residential aged care places increased from 15 640 at June 2005 to 15 994 places at June 2006 (low and high care combined).

The Australian Government target population, for aged care planning purposes, is people aged 70+ years, and Aboriginal and Torres Strait Islander people aged 50+ years. The Australian Government aims to achieve 88 residential aged care places (44 high care places and 44 low care places) per 1 000 of the target population by 2010.

The ratio of operational residential aged care places in South Australia as of June 2005 was 91.2 places per 1 000 of the target population; this ratio increased to 91.8 places per 1 000 at June 2006.

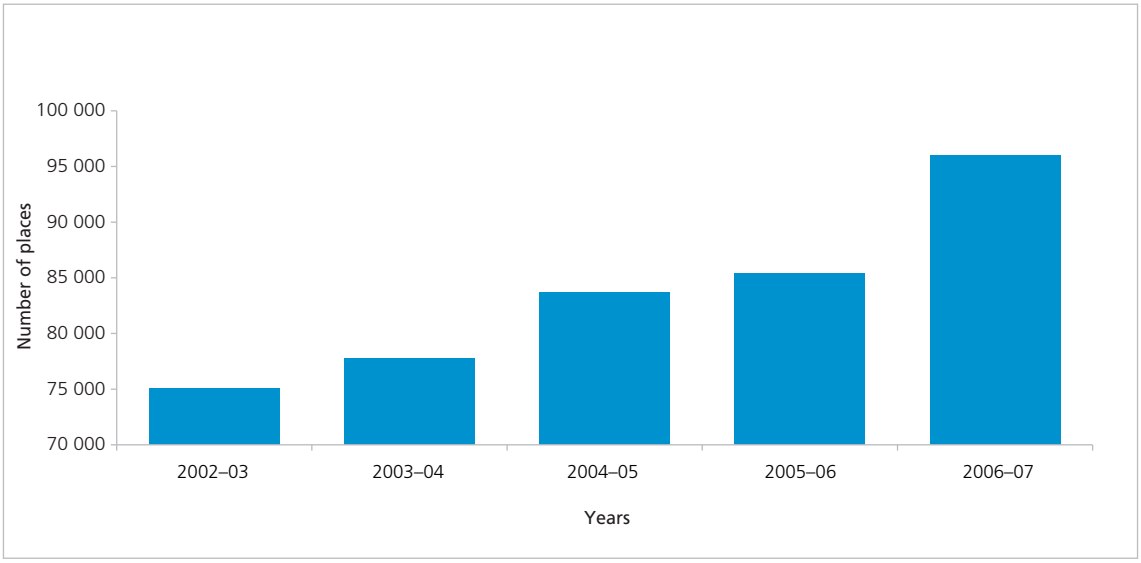
8.8.2 Community-based aged care

Community-based aged care helps older people who are able to live at home but require some support to do so. Services that are provided through community services include bathing, showering, and personal hygiene; toileting; dressing and undressing; mobility; transfer; preparing and helping with eating meals; sensory communication, or fitting sensory communication aids; laundry; home help; gardening; and support with short-term illness.

The number of community aged care places increased from 2 996 at June 2005 to 3 472 places at June 2006. The provision ratio of community aged care places per 1 000 persons aged 70+ years increased from 17.5 at June 2005 to 19.9 at June 2006.

8.8.3 Home and Community Care Program (HACC)

Graph 8.8.2 Growth in HACC clients, South Australia



Source: Department for Families and Communities, South Australian Home and Community Care Program Minimum Data Set.

The *Home and Community Care Program* was established in 1985. The program is funded jointly by the Australian, State and Territory Governments to support frail older people, younger people with disabilities and their carers.

The total recurrent funding for the *HACC Program* in South Australia increased from $118.6 million in 2005–06 to $128.1 million in 2006–07. The Commonwealth contribution was $78.9 million, and the state contribution was $49.1 million.

The main objectives of the *HACC Program* are to:

- provide a comprehensive, coordinated and integrated range of basic maintenance and support services for frail older people, younger people with disabilities and their carers
- support these people to be more independent at home and in the community, thereby enhancing their quality of life and/or preventing their premature or inappropriate admission to longer term residential care
- provide flexible, timely services that respond to the needs of these people.

Services available to HACC clients have been categorised into seven service groups:

- Service group 1 — domestic assistance, personal care, social support, home maintenance, respite care and other food services
- Service group 2 — assessment, client care coordination, case management, counselling/support, information and ddvocacy
- Service group 3 — nursing and allied health care
- Service group 4 — centre–based day care
- Service group 5 — home modification, goods & equipment and formal linen
- Service group 6 — meals
- Service group 7 — transport.

The number of South Australian HACC clients who received one of the above service/assistance types increased by 11 per cent from 85 412 in 2005–06 to 96 000 in 2006–07. It is envisaged that dependency on HACC services will continue to grow in future years.

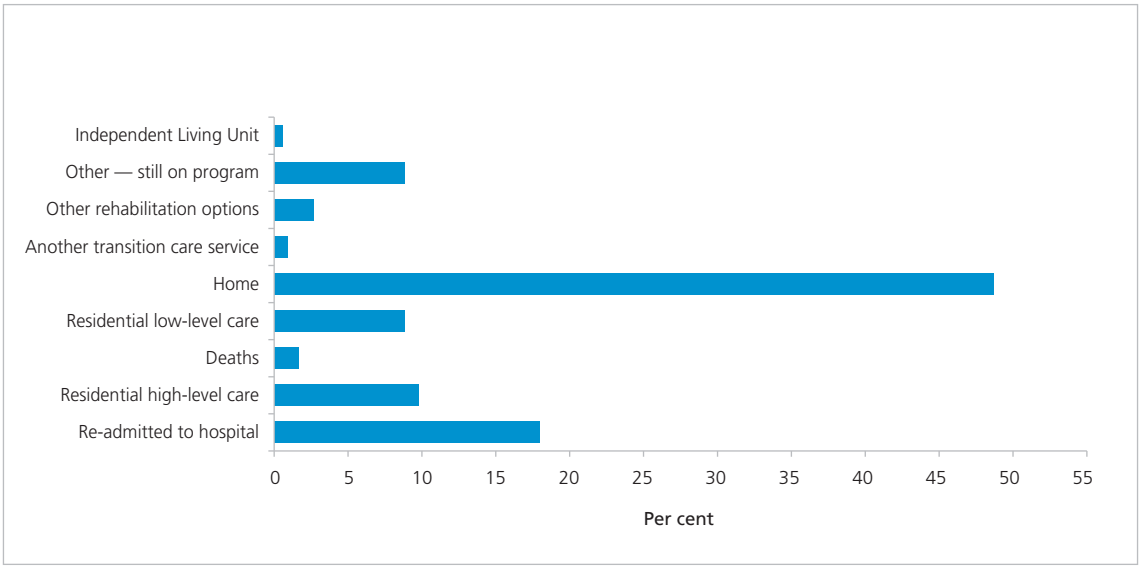
8.8.4 Transition care

The *Transition Care Program* provides short-term support for older people at the end of their hospital stay. The program is aimed at those people who require more time and support in a non-hospital environment to complete their recovery process, optimise their functional capacity and finalise their longer term care arrangements.

The program may be provided in a residential setting or in the older person's home, depending on each individual's care needs. A package of services is provided that includes low intensity therapy such as physiotherapy, occupational therapy and social work, nursing support and/or personal care.

There were 176 transitional care places as at June 2006. The mean age of people entering into transition care during 2006–07 was 82 years, with 50 per cent of people aged 81–90 years and 13 per cent aged 90+ years. Women comprised 67 per cent of transition care recipients in South Australia, while men amounted to 33 per cent of the clientele. The *Transition Care Program* had an overall increase of 30 per cent in admissions between 2005–06 and 2006–07.

Graph 8.8.3 Transition care program discharge destinations, South Australia, 2006–07



Source: SA Health, Transition care program data.

Almost 47 per cent of transition care recipients in South Australia during 2006–07 had been admitted to hospital with musculoskeletal problems (falls, fractures, and soft tissue injuries). The median length of stay in the transition care program was 50 days. Forty-nine per cent of older people returned to their home on completion of transition care rather than being admitted to a residential aged care facility (see graph above).

8.9 Services and initiatives

8.9.1 Out-of-hospital strategies

SA Health provided a number of out-of-hospital strategies during 2006–07 with the objective of developing primary health care programs to reduce demand on the acute system. Older people are high users of these health services as they often have more complex needs. These initiatives increase older people's chances of remaining at home longer and avoiding premature admission to residential care and/or admission to hospital. These programs include:

- *Metro Home Link* — provides care to patients who are at risk of hospital admission or re–admission; short–term packages of care are provided in a person's place of residence, including residential age care facilities
- *Chronic Disease Management programs* — health care planning programs for people with a chronic illness that aim to reduce complications and avoid future unplanned admissions to hospital
- *Transition Care Program* — provides older people with short-term assistance following a hospital stay; the program aims to give older people more time to recuperate in a non-hospital environment with care provided in a person's own home or in a residential facility dependent on the needs of the individual
- *GP Plus Health Care Centres* — assist in the early identification of health risk factors affecting the immediate and long-term health of an individual; assisting in the management of patients with chronic and complex conditions; providing health promotion and prevention strategies in local communities; and providing a community resource for self-management groups and other health and wellbeing activities
- *Lifestyle and Risk Factor programs* — lifestyle advisers and coordinators work with high-risk populations and individuals to reduce the risk of their developing a preventable chronic disease in the future, such as diabetes, heart disease and respiratory disease.

8.9.2 Mental health

There are a variety of initiatives funded by the South Australian Government aiming to bolster the mental wellbeing of older people living in their communities. The *Living Well* pilot project aimed to identify, trial and evaluate primary health care approaches with residents of independent living units at allocated sites, who were at risk of experiencing depression, anxiety and/or stress.

A commitment also has been made through *Improving with Age — Our Ageing Plan for South Australia* to work with community services to support initiatives consistent with the national mental health initiative — 'beyond blue' — in relation to the needs of older people with depression.

8.9.3 Support for carers

The development of the *SA Carers Recognition Act 2005* demonstrated South Australia's commitment to supporting carers. There is a range of strategies funded by the South Australian Government that seek both to recognise and support the work of carers supporting older people to live independent and fulfilling lives in the community. Carers are a key target population for the *Home and Community Care Program* administered by the Department for Families and Communities. This assistance includes respite and other carer supports such as counselling, support information and advocacy.

8.9.4 Research

There were a range of research initiatives (trials) funded by the South Australian Government in 2006–07 that sought to identify and establish healthy lifestyle practices for older people; these included:

- *The Healthy Ageing — Nutrition* project
- *Neighbourhoods* — Older women's perceptions of health supporting qualities across metropolitan Adelaide
- Non-metropolitan housing pathways for older people in South Australia
- Housing assistance budgets for an ageing population
- Factors that make housing more suitable for older people.

It is worth noting these overall strategies seek to complement the range of programs outlined across community, and residential care streams provided by the Australian Government.

8.10 Notes

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9 Aboriginal people

In this chapter

Summary

- Life expectancy for South Australian and Western Australian Aboriginal people (1996–2001) as a combined group was 58.5 years for males and 67.2 for females.
- The median age at death for Aboriginal males in 2005 was 42.4 years and for Aboriginal females, 47.5 years.
- External causes of death such as transport accidents, intentional self–harm and assault accounted for 23.9 per cent of South Australian Aboriginal deaths in 2005.
- The leading causes of premature mortality for Aboriginal South Australians between 2001–2003 (in order of magnitude) were ischaemic heart disease, road traffic accidents, suicide and self–inflicted injuries, and Type 2 diabetes.
- Birthing outcomes for Aboriginal South Australians in 2006 have reached six-year-low figures. The infant mortality rate was 9.0 per 1 000 births (5 deaths) and the proportion of low birth weight babies (less than 2 500 grams) was 14.3 per cent.
- The crude hospitalisation rate for diabetes, renal disease and mental health conditions for Aboriginal South Australians in 2006–07 was 3.3 times higher, 8.0 times higher, and 3.5 times higher respectively than for other South Australians.
- Survey data in 2004–05 show that 56 per cent of Aboriginal South Australians were current daily smokers, and 64 per cent of Aboriginal South Australians were overweight or obese.
- South Australian Aboriginal children (4–16 years-old) have higher rates of dental decay, missing teeth, filled teeth and unhealthy gums than do other South Australian children.

Introduction

Aboriginal cultural groupings within South Australia are defined by a diverse number of distinct language groups, numbering over 30, related to roughly defined regions of the state. The Aboriginal people of South Australia are a heterogeneous group with many unique and distinct cultural differences among them.

Aboriginal people live in large cities, small country towns and in remote areas of South Australia, from the coast to the arid lands of central Australia. The South Australian Aboriginal population also demonstrates diversity in its connection with traditional ways of life and culture.

The unacceptable standard of health and level of disadvantage for Aboriginal people in Australia have been described in numerous national reports and other publications, as instanced by the Generational Health Review, *Better Choices Better Health*, in 2003.[1]

Aboriginal people in South Australia experience poorer health and greater exposure to risk factors than do other South Australians.

Many South Australian Aboriginal people live in unsatisfactory environmental conditions, and in clear social and economic disadvantage. Socioeconomic factors such as education, employment and housing are intimately linked to health status.

Evidence of health improvements in recent times has been experienced by Aboriginal people. The gap between the health status of Aboriginal and other Australians, however, has widened because improvements have occurred at a faster rate for the non–Aboriginal population.[2]

Aboriginal people traditionally embrace an holistic approach to their wellbeing — one that includes physical, psychological, social, emotional and cultural dimensions, the spiritual connection with their land, their affinity with the sea, and the interconnection of spiritual beliefs with family and clan, mind, body and spirit. Family relationships, obligations and ceremonies are central to Aboriginal life.

For the purposes of this report, 'Aboriginal' is used to identify First Nation Australians, and where data cover both groups, is inclusive of Aboriginal and Torres Strait Islander people.

9.1 Aboriginal population and distribution

The estimated resident Aboriginal population of South Australia, based on the 2006 experimental Estimated Residential Population, is 26 044, being 1.7 per cent of the total South Australian population and 5.0 per cent of the total Aboriginal population in Australia.[3]

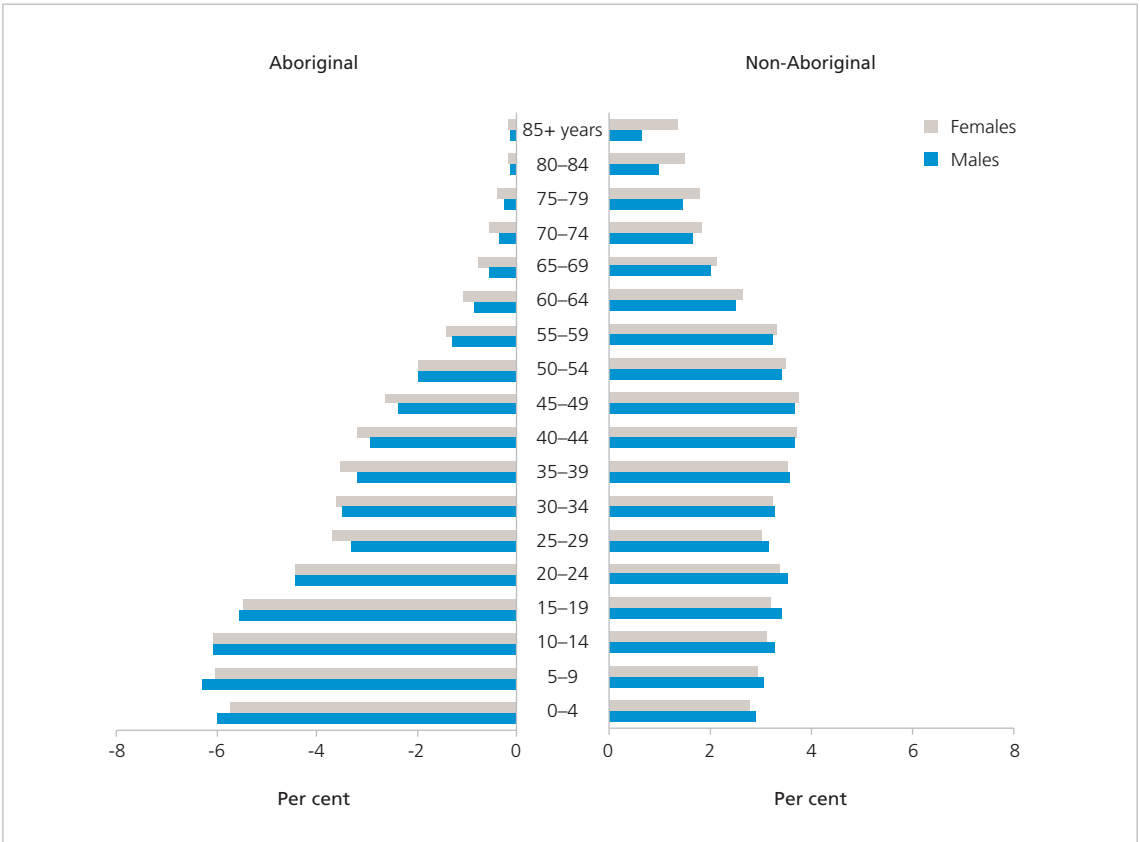
The Aboriginal population is younger than the rest of the community, with 36.1 per cent of the population being under 15 years of age and 56.0 per cent being under 25 years of age compared to the non-Aboriginal population with approximately 18.1 per cent being under 15 years of age and 31.5 per cent being under the age of 25 (Graph 9.1.1).

The highest numbers of Aboriginal people are aged 5–9 years. The number of Aboriginal people within each age group decreases, as the population gets older, whereas the non-Aboriginal population peaks in the 45–49 age group, and then decreases.

The Aboriginal population in South Australia aged 65+ years is 3.5 per cent, compared to 15.3 per cent in the non-Aboriginal population. There also is a substantial drop in the number of Aboriginal people aged between 20–24 and 25–29 years, reflecting a relatively high mortality rate among young adults.

The estimated resident Aboriginal population in South Australia between census periods has grown by 2.0 per cent from 25 544 in 2001 to 26 044 in 2006. The non-Aboriginal population growth in South Australia over the same period was 3.8 per cent.

Graph 9.1.1 South Australian estimated resident population—distribution by age, gender and Aboriginal status, 30 June 2006



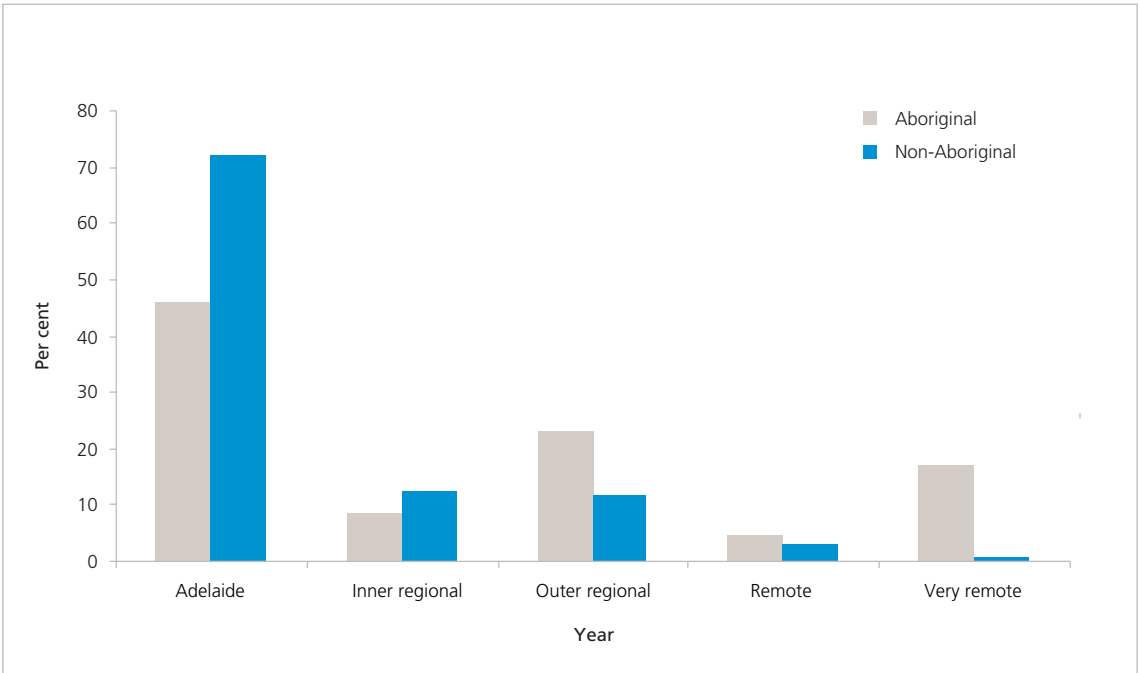
Source: Australian Bureau of Statistics (ABS), Australian Demographic Statistics 2007.

The 2006 population estimate for South Australia shows the proportion of males and females in both the state's Aboriginal and non-Aboriginal population to be 49 per cent and 51 per cent, respectively.

Census data from 2001 provide the most recent analysis on the South Australian population distribution by remoteness (Graph 9.1.2). Over half of the Aboriginal population resides outside the metropolitan areas of South Australia, compared with fewer than 30 per cent of other South Australians.

A stark difference is observed in the very remote areas of South Australia where 17.3 per cent of all South Australian Aboriginal people live, as distinct from only 0.7 per cent of all non-Aboriginal people. The very remote region of South Australia includes the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands with an estimated resident population of 2 149.[4] This number represents almost half of the very remote South Australian Aboriginal population.

Graph 9.1.2 South Australian estimated population distribution by remoteness, 2001



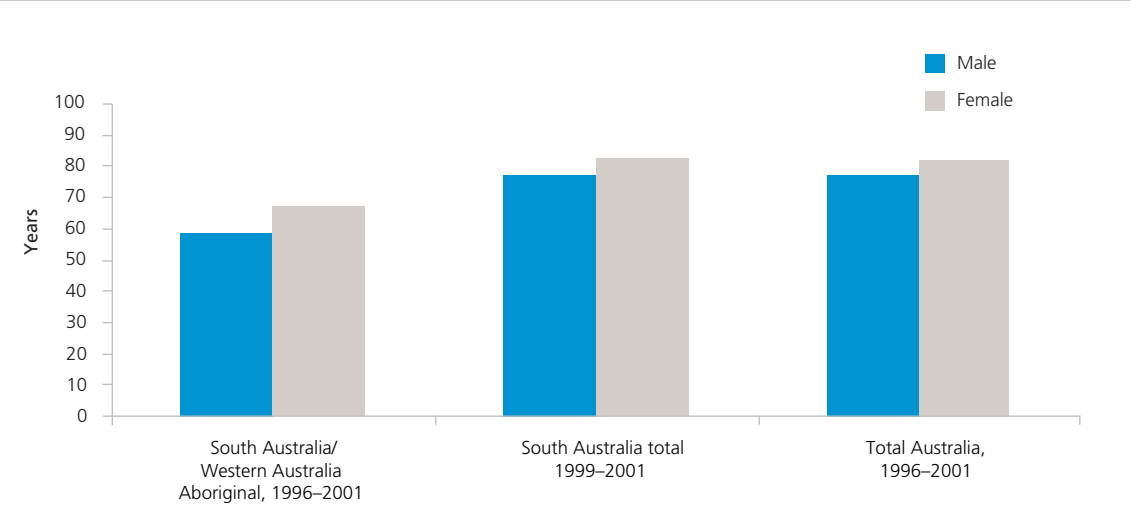
Source: Australian Bureau of Statistics (ABS), Census 2001.

9.2 Life expectancy and causes of death

Life expectancy for Aboriginal people in Australia is typically much less than that of the total population figure, indicating that mortality rates are higher and inferring that overall health status is lower than the rest of the population.

Graph 9.2.1 illustrates the latest available life expectancy information for Aboriginal South Australians.

Graph 9.2.1 Life expectancy comparisons South Australia/Western Australia, 1996–2001 (see section 9.11 for comments)



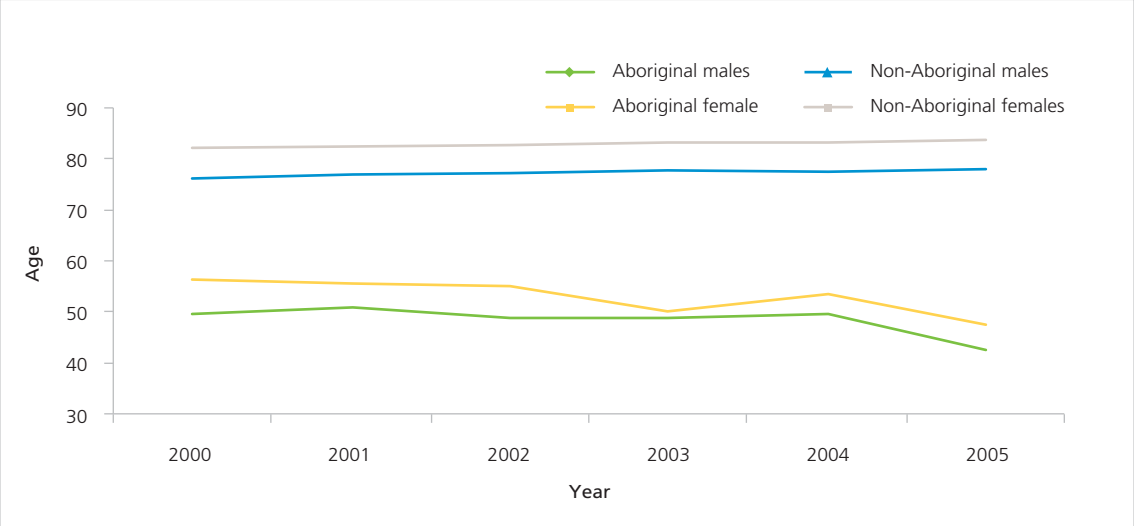
Note: Life expectancy calculations group the South Australia and Western Australia Aboriginal data together to improve data quality.
Source: Australian Bureau of Statistics (ABS), Deaths 2001 and 2005.

The life expectancy gap within South Australia between Aboriginal males and other males is 18.5 years. The life expectancy gap is 15.3 years for females. The chances of an Aboriginal South Australian living to 65 years of age — based on these figures — is approximately 25 per cent. This information is based on figures from the 2001 Census and may not reflect the life expectancy experienced currently.

Comparison with the life expectancy of Aboriginal people from other countries shows that the gap between Aboriginal people and non-Aboriginal people is much lower there than in Australia (New Zealand — male 8 years, female 9 years; Canada — male: 7 years, female 5 years).[2]

More recent information on the mortality of Aboriginal South Australian can be gained from a review of the median age at death and numbers of deaths reported. Most recent trends show a lowering of the median age at death for both Aboriginal males and females, both reaching six-year-lows of 42.4 and 47.5 years respectively, for 2005 (Graph 9.2.2)[5].This observation is accompanied by a sustained trend of increasing median age at death for non-Aboriginal South Australians.

Graph 9.2.2 Median age of death, South Australia, 2000–2005



Source: Australian Bureau of Statistics (ABS), Deaths 2005.

The underlying causes of death for Aboriginal South Australians in 2005 are described in Table 9.2.1. The leading cause of death for both Aboriginal males and females is diseases of the circulatory system, representing 25.4 per cent of deaths compared to 36.3 per cent for other South Australians. Malignant neoplasms accounted for 12.0 per cent of South Australian Aboriginal deaths compared to 28.1 per cent of deaths in the remaining South Australian population. Malignant neoplasms as a proportion of Aboriginal female deaths accounted for 18.4 per cent of deaths.[6]

Table 9.2.1 Underlying causes of death for Aboriginal South Australians, 2005

	Number of deaths				
	Males	Females	Persons	Total Aboriginal deaths (per cent)	Other South Australian deaths (per cent)
Medical causes					
Malignant neoplasms	8	9	17	12.0	28.1
Type 2 diabetes	4	6	10	7.0	2.6
Mental and behavioural disorders	-	-	3	2.1	3.3
Diseases of the circulatory system	25	11	36	25.4	36.3
Diseases of the respiratory system	9	5	14	9.9	9.2
Diseases of the digestive system	-	-	7	4.9	3.5
Perinatal conditions	-	-	1	0.7	0.6
All other medical conditions	13	7	20	14.1	10.8
External causes					
Transport accidents	-	-	6	4.2	1.3
Intentional self-harm	14	3	17	12.0	1.7
Assault	-	-	2	1.4	0.2
Other external causes	-	-	9	6.3	2.4
Total	**93**	**49**	**142**	**100.0**	**100.0**

Source: Australian Bureau of Statistics (ABS), Causes of death 2005.

External causes of death represented 23.9 per cent of the 2005 deaths for Aboriginal South Australians, compared to only 5.6 per cent for other South Australians. Intentional self-harm contributed a major proportion of deaths due to external causes; 12 per cent of all South Australian Aboriginal deaths and representing 15.0 per cent of Aboriginal male deaths. Transport accidents represented 4.2 per cent of Aboriginal deaths, over three times the non-Aboriginal proportion.

9.3 Burden of disease

Studies of burden of disease in specific populations categorise the impact of illness and death. The methodology requires analysis of the effects of disease, disability and death at the individual level and aggregation to present an overall picture.

The leading causes of premature death for Aboriginal South Australians for the period 2001–2003 are ranked in the table below. The table allows comparison of the age and sex adjusted rate of YLL with the non-Aboriginal population. The difference in the total YLL rate between Aboriginal (151.7) and non–Aboriginal South Australians (65.8) reflects the life expectancy gap.

Table 9.3.1 Leading causes of premature mortality (YLL), three-year average, 2001–2003

	Aboriginal South Australians			Other South Australians		
Condition	Rank	Crude rate per 1 000 *^	Adjusted rate per 1 000#	Rank	Crude rate per 1 000	Adjusted rate per 1 000
Ischaemic heart disease	1	14.2	30.2	1	13.3	11.7
Road traffic accidents	2	9.0	10.5	8	2.0	2.1
Suicide and self-inflicted injuries	3	6.6	6.3	5	2.7	2.7
Type 2 diabetes	4	4.9	11.4	10	1.4	1.2
Cirrhosis of the liver	5	3.6	6.8	17	1.1	1.0
Stroke	6	3.0	7.1	2	5.0	4.4
Homicide and violence	7	2.5	2.8	47	0.3	0.3
Septicaemia	8	2.4	2.6	36	0.5	0.4
Pneumonia	9	2.3	4.3	9	2.0	1.7
Chronic obstructive pulmonary disease	10	2.2	6.0	7	2.5	2.2
Other chronic respiratory diseases	11	1.8	3.9	13	1.3	1.1
Lung cancer	12	1.8	5.0	3	4.4	3.9
Type 1 diabetes	13	1.7	3.5	54	0.3	0.2
Epilepsy	14	1.5	1.8	45	0.3	0.3
Inflammatory heart disease	15	1.5	2.2	25	0.7	0.7
Low birth weight	16	1.3	0.7	44	0.3	0.3
Heroin dependence and harmful use	17	1.3	1.4	37	0.4	0.4
Other endocrine and metabolic	18	1.2	2.1	23	0.8	0.8
Nephritis and nephrosis	19	1.0	1.6	22	0.9	0.8
Rheumatic heart disease	20	1.0	1.0	72	0.1	0.1
All others	-	22.8	40.6	-	32.5	29.5
Total	-	**87.4**	**151.7**	-	**72.6**	**65.8**

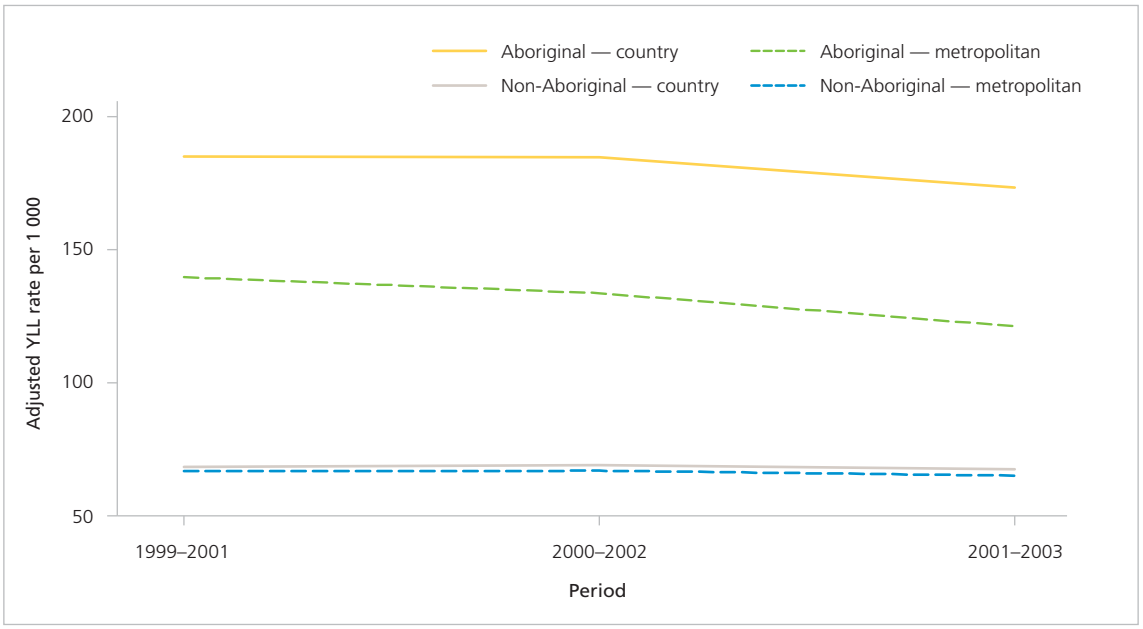
Note: *High Series Projections of Aboriginal population by age by year for South Australia from ABS Cat 3238.0, 0–4, then 10-year age groups to 55+ years.
^ 1999 & 2000 population figures not available within ABS Cat 3238.0. Rate calculations use 2001 estimates for 1999–2001 period, then 2001 and 2002 for 2000–2002 and 2001–2003 periods.
#Age and sex adjusted to Australia 2001 population.
Source: SA Health.

Comparison of the rates of premature mortality indicate that ischaemic heart disease is the leading cause of death in both population groups, with the Aboriginal rate (30.2 YLL/1 000) being more than two-and-a-half times higher than that for the non-Aboriginal population (11.7 YLL/1 000). Years life lost to road traffic accidents for South Australian Aboriginal people occur at five times the rate of other South Australians. Further analysis of the pattern of rankings in each population group clearly indicates a different profile of causes of premature death.

The total rate of YLL (Years of life lost - YLL) for Aboriginal South Australians (over the three periods of analysis, 1999–2001, 2000–2002 and 2001–2003) has fallen from 168.7 YLL per 1 000 to 151.7 YLL per 1 000. It is not clear whether the improvement in the YLL rate is a sustainable trend. The ranking of suicide and self-inflicted injuries, cirrhosis of the liver, and homicide and violence have increased over the three time periods, while the category of heroin dependence and harmful use has shown a decrease in ranking.

Further analysis of the burden of disease data demonstrates a relationship between place of residence and YLL for Aboriginal South Australians (Graph 9.3.1). Much higher rates of YLL per 1 000 (1.4 times higher) are experienced by country-based Aboriginal people than by those living in metropolitan areas. This location phenomenon is not evident for non–Aboriginal South Australians demonstrating almost identical rates. Some decrease is evident in the difference between the Aboriginal and non–Aboriginal rate of YLL over the time period shown below, but it is not clear if this is sustainable.

Graph 9.3.1 Premature mortality (Years of life lost-YLL) by Aboriginality and area, South Australia, three-year annual averages



Source: SA Health.

9.4 Birthing outcomes

Aboriginal women accounted for 2.7 per cent (487) of the confinements in South Australia in 2005.[7] This figure has varied slightly over the previous three years, ranging between 2.5 per cent to 3.0 per cent.

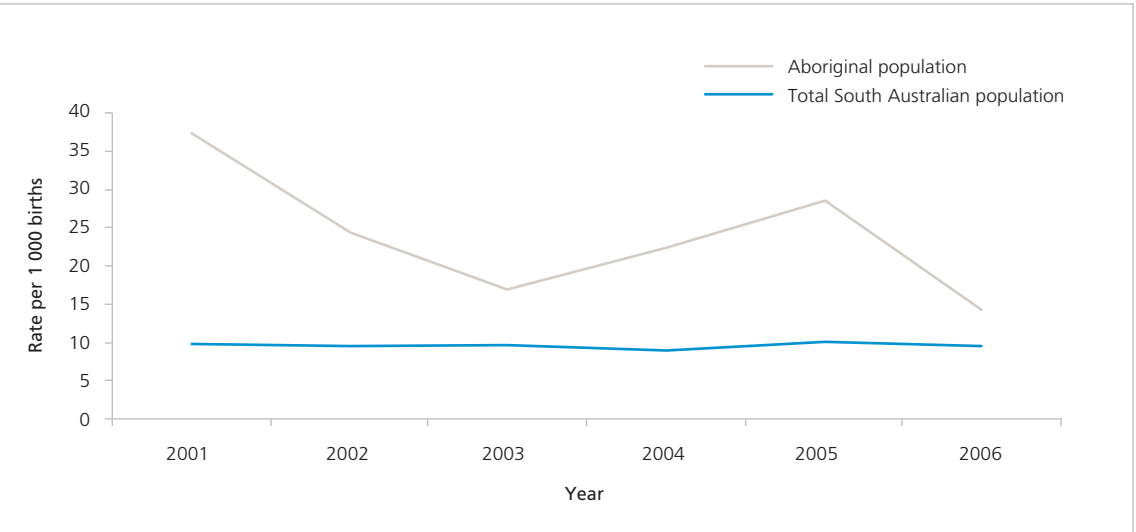
Aboriginal teenage women account for a higher proportion of confinements than do non-Aboriginal teenage women, typically around 20 per cent (21.5 per cent in 2005), compared to around 5 per cent. High rates of teenage pregnancy are associated with poorer birthing outcomes.[8]

Benefits of antenatal visits during pregnancy are achieved through education and health monitoring. Low attendance records at antenatal visits for South Australian Aboriginal women is a consistent finding with 41 per cent having had fewer than seven antenatal visits during pregnancy in 2005 compared with 7 per cent of non-Aboriginal women.[7] These figures have been very consistent over the previous three years.

Preliminary results from the 2006 birthing data on perinatal mortality, infant mortality and low birth weight show improved pregnancy outcomes across all indicators[9]; the 2006 data have yielded the best results for the period 2001–2006, with lowest figures for all three indicators (Graphs 9.4.1, 9.4.2 and 9.4.3). The long-term patterns have shown significant variability and sustained outcomes are required from future reporting periods, although these results are encouraging.

The most recent perinatal mortality rate for South Australia is for 2006, and shows 14.3 deaths per 1 000 (8 deaths), half the previous year's rate (Graph 9.4.1).

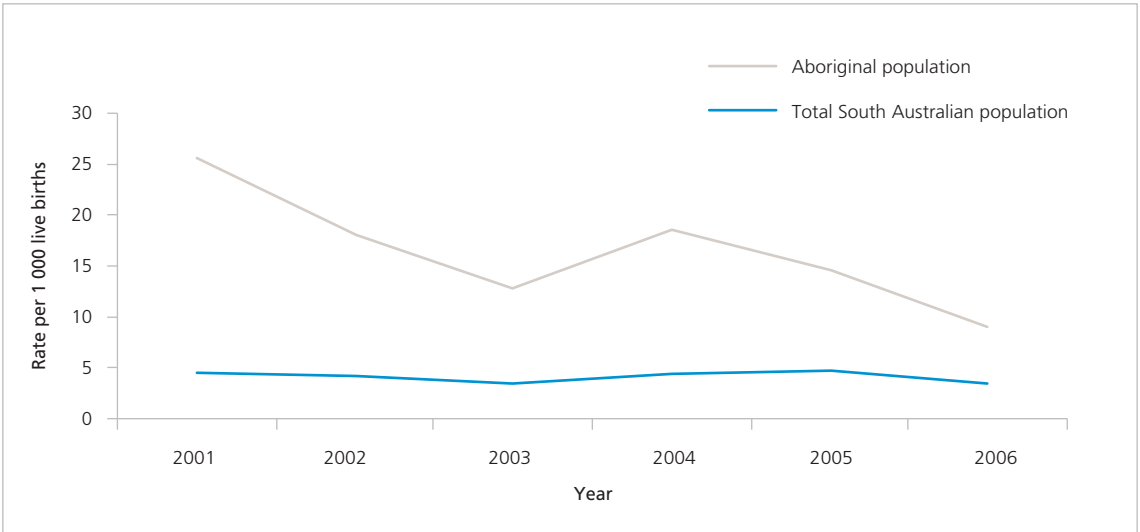
Graph 9.4.1 Perinatal mortality, South Australia, 2001–2006



Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

The infant mortality rate for 2006 for South Australian Aboriginal births was 9.0 deaths per 1 000 (5 deaths), down from 14.6 in 2005 (7 deaths), closing the gap on the overall population result (Graph 9.4.2).

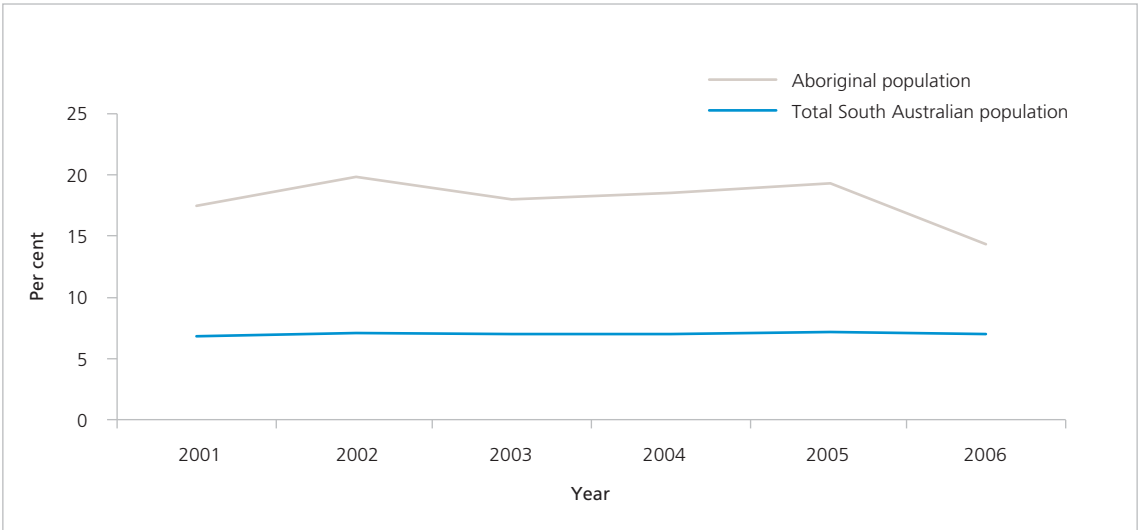
Graph 9.4.2 Infant mortality, South Australia, 2001–2006



Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

The percentage of low birth weight Aboriginal babies dropped from 19.3 per cent to 14.3 per cent following a fairly constant trend between 2001–2005 and closing the gap on the total South Australian population result (Graph 9.4.3).

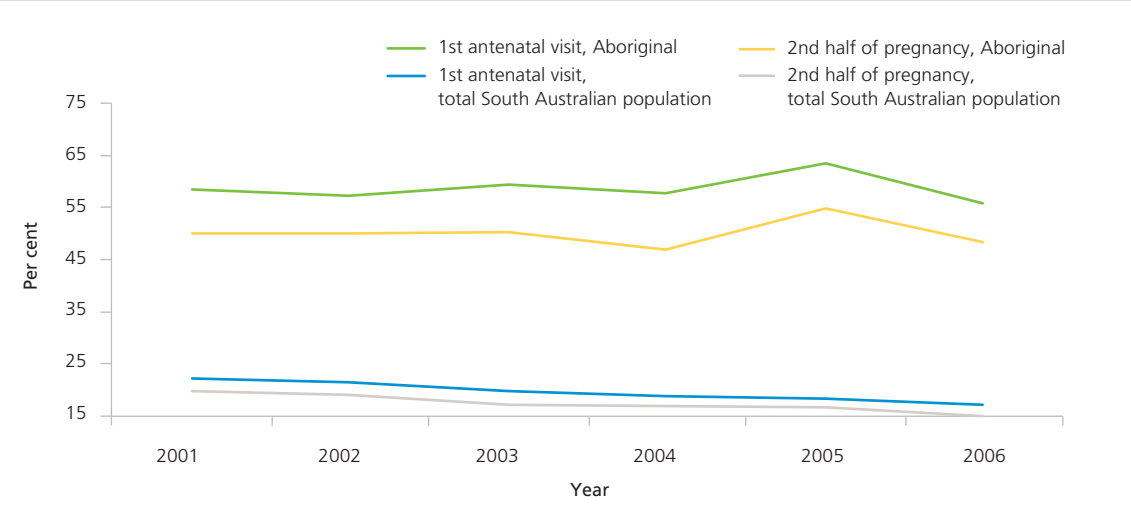
Graph 9.4.3 Low birthweight babies (<2500 grams), South Australia, 2001–2006



Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

Smoking during pregnancy is a recognised risk factor for poor birthing outcomes and is associated strongly with low birth weight babies.[10] No significant improvements in smoking rates during pregnancy for Aboriginal women were noted in South Australia over the time period 2001–2006 (Graph 9.4.4), while a definite improvement is noted for the total South Australian population for the same time period. Just over 55 per cent (55.7) of South Australian Aboriginal women were smoking in 2006 at the first antenatal visit and 48.4 per cent were smoking during the second half of their pregnancy.

Graph 9.4.4 Smoking during pregnancy, South Australia, 2001–2006



Source: SA Health, Pregnancy Outcome Unit, Epidemiology Branch.

The latest national comparisons show that of the five jurisdictions reported (New South Wales, Queensland, South Australia, Western Australia, and the Northern Territory), for the period 2003–2005, South Australia had the lowest reported infant mortality rate of 7.7 infant deaths per 1 000 (Table 9.4.1).[5]

Table 9.4.1 National infant mortality 2003–2005 (three-year average), infant deaths per 1 000

	South Australia	New South Wales	Queensland	Western Australia	Northern Territory
Aboriginal persons	7.7	8.4	10.9	12.8	15.6
Total persons	4.0	4.7	5.0	4.2	9.5

Source: Australian Bureau of Statistics (ABS), Deaths 2005.

The latest national figures for birth weight indicate that South Australian Aboriginal women have the second highest proportion of babies weighing less than 2 500 grams at 17.6 per cent (Table 9.4.2).

Table 9.4.2 National births by low birth weight, percentage, 2004

	South Australia	New South Wales	Queensland	Western Australia	Victoria	Tasmania	Australian Capital Territory	Northern Territory
Aboriginal persons	17.6	12.3	11.5	14.4	16.2	na	19.2	14.0
Total persons	6.6	5.9	6.7	6.6	6.3	7.1	7.9	9.3

Source: Australia's mothers and babies 2004.

It is expected that in future reported timeframes the national data will mirror the improvements seen in the South Australian data sets, as the national data are not as current as those belonging to the Pregnancy Outcomes Unit, SA Health.

9.5 Chronic disease

Chronic diseases generally develop over long periods of time as the result of numerous possible risk factors including smoking, physical inactivity, obesity, poor diet, excessive alcohol use, diabetes (which, while a chronic disease itself also is a risk factor for the progression of chronic disease), and environmental and socio–economic factors [11]. Chronic diseases are major causes of morbidity and mortality for Aboriginal people in South Australia and Australia.

National information from the Australian Institute of Health and Welfare (AIHW) demonstrate higher rates of hospitalisations for chronic conditions for Aboriginal people than for other Australians.[12] Table 9.5.1 describes the age standardised hospitalisation rates for various chronic disease for Aboriginal males and females, expressed as a ratio of the rates for their non–Aboriginal counterparts. The hospitalisation rates were higher for Aboriginal male and females for all chronic diseases, except cancer.

Table 9.5.1 Age standardised hospitalisation rate ratio, Aboriginal to non-Aboriginal, South Australian, Western Australian, Queensland and Northern Territory public hospitals, by gender, 2004–05

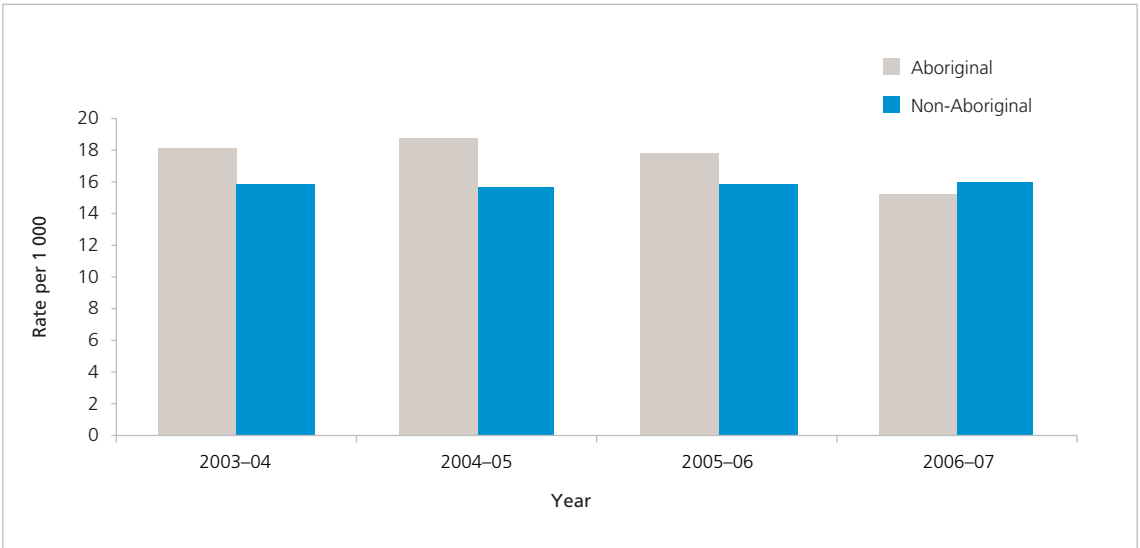
Condition	Male	Female
Cancer	0.6	0.6
Lung cancer	1.6	1.8
Cervical cancer	na	3.6
Mental and behavioural disorders	2.1	1.4
Circulatory diseases	1.6	1.9
Diabetes	4.2	6.7
End stage renal diseases	10.9	18.8
Chronic obstructive pulmonary diseases	4.9	5.7

Source: Australian Institute of Health and Welfare (AIHW), National Hospital Morbidity Database, OID 2007 tables 3A.2.11, 3A.2.15.[12]

The table above shows that the greatest difference between Aboriginal and non-Aboriginal hospitalisation rates was for end stage renal disease: 10.9 times higher for Aboriginal males and 18.8 times higher for Aboriginal females than for their non-Aboriginal counterparts. The Aboriginal rate of diabetes is 4.2 times higher for males and 6.7 times higher for females. The Aboriginal rate of chronic obstructive pulmonary disease is 4.9 times higher for males and 5.7 times higher for females.

Hospitalisations for cardiovascular disease have shown a decreasing trend for Aboriginal South Australians, to a level of 15.2 per 1 000 in 2006–07.

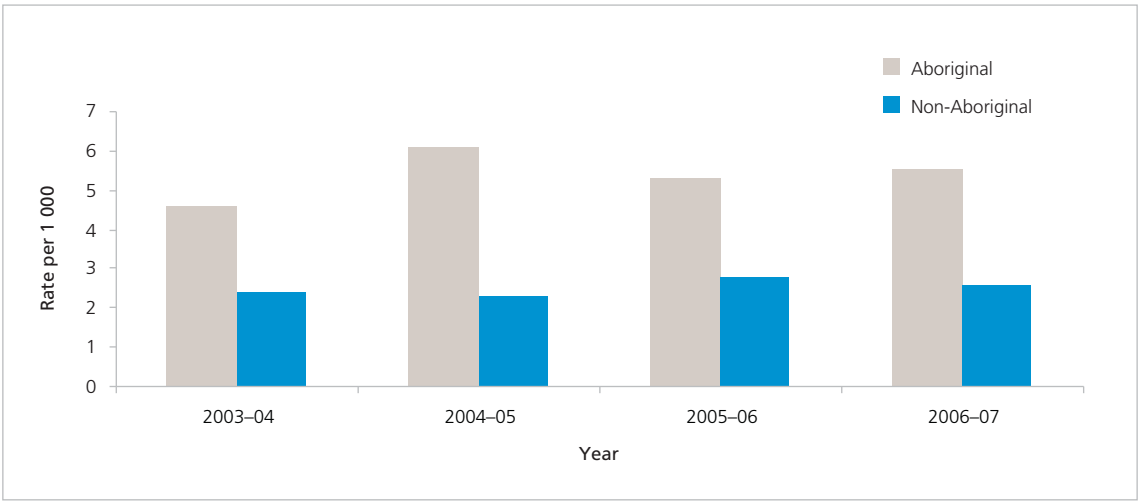
Graph 9.5.1 South Australian hospitalisation rates for cardiovascular disease, 2003–04 to 2006–07



Note: Non-age-standardised hospitalisation rates.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

Hospitalisations for chronic obstructive pulmonary disease have remained relatively static for Aboriginal South Australians over the last four financial years, but they clearly are over double the crude rate for non-Aboriginal people (Graph 9.5.2).

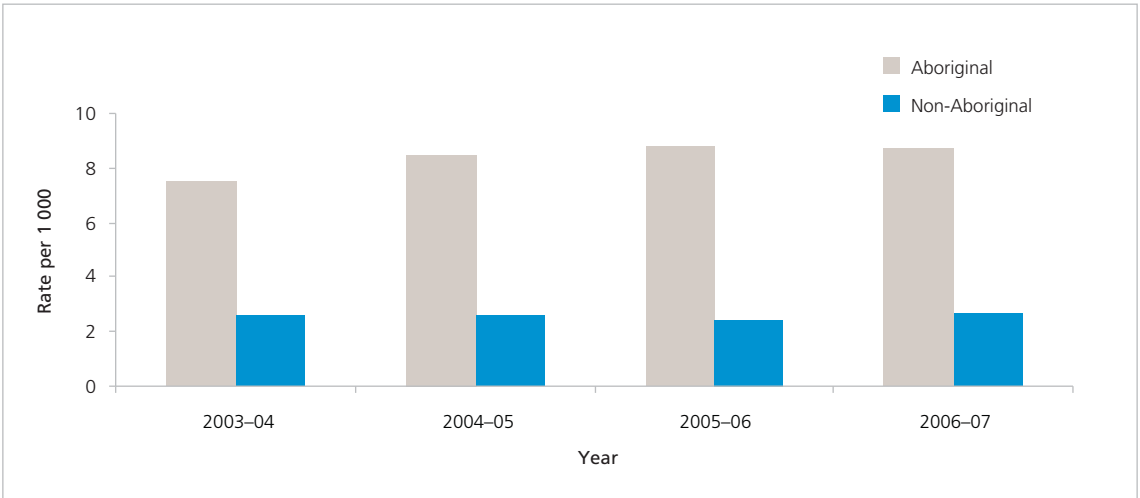
Graph 9.5.2 South Australian hospitalisation rates for chronic obstructive pulmonary disease, 2003–04 to 2006–07



Note: Non-age-standardised hospitalisation rates.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

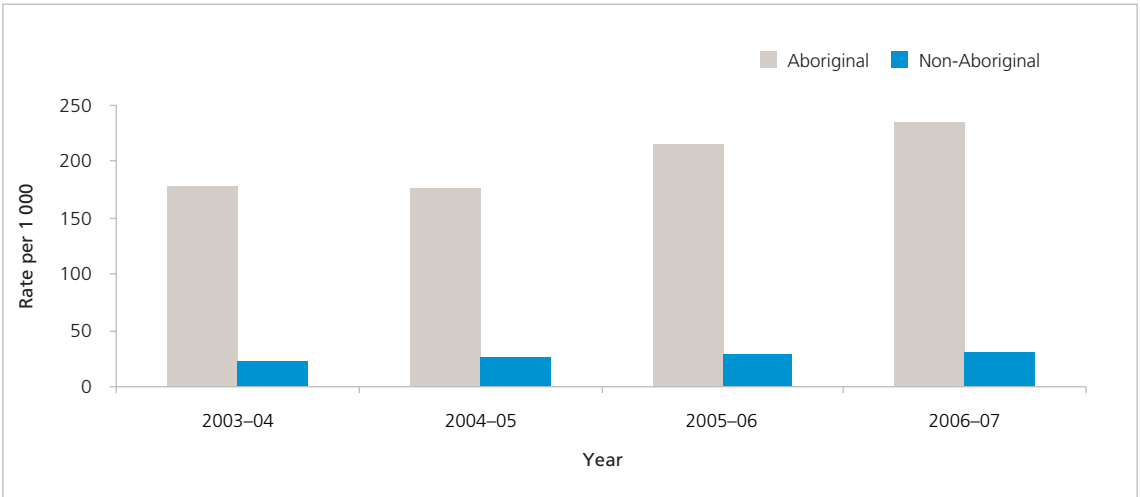
South Australian Aboriginal hospitalisations for diabetes and renal disease both have shown increasing trends over the four time periods (Graphs 9.5.3 and 9.5.4). The crude hospitalisation rate for diabetes in 2006–07 is 3.3 times higher for Aboriginal people (8.7 per 1 000) compared to non-Aboriginal South Australians (2.6 per 1 000). The crude hospitalisation rate for renal disease in 2006–07 is eight times higher for Aboriginal people (234.7 per 1 000) compared with non-Aboriginal South Australians (29.5 per 1 000).

Graph 9.5.3 South Australian hospitalisation rates for diabetes, 2003–04 to 2006–07



Note: Non-age-standardised hospitalisation rates.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

Graph 9.5.4 South Australian hospitalisation rates for renal disease, 2003–04 to 2006–07



Note: Non-age-standardised hospitalisation rates.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

9.6 Selected hospitalisations — environmental health

Certain diseases are reflective of the status of environmental health for Aboriginal communities. These environmentally sensitive diseases are influenced by such factors as the quality of sanitation, water, housing and food safety. Hospitalisations reflect the more serious cases but they do not show the overall incidence of disease. Hospitalisations are influenced by the ability to get access to hospital services and also can reflect the capacity of primary health services or outpatient departments to treat certain conditions.

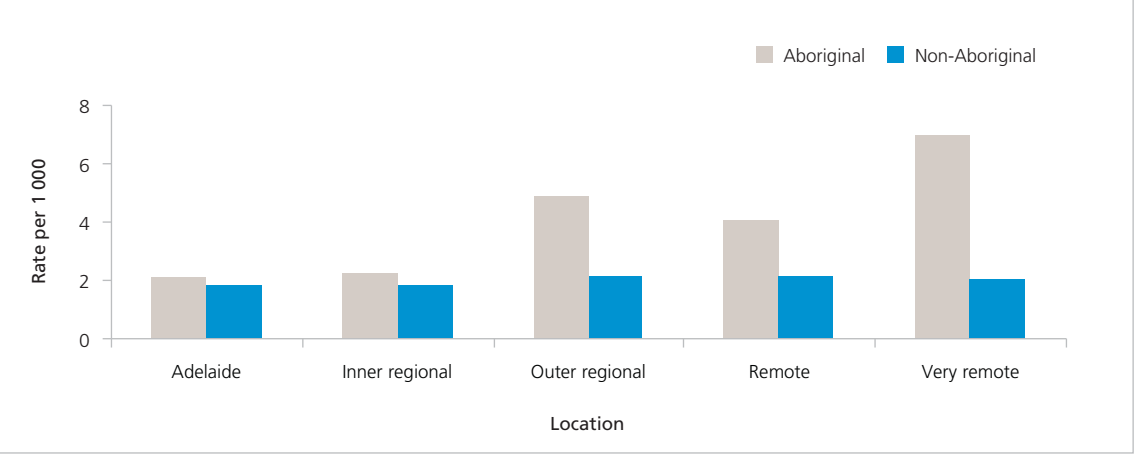
Table 9.6.1 Hospitalisation crude rates per 1 000, selected conditions, 2005–06 and 2006–07

	2005–06			2006–07		
	Aboriginal	Other	Ratio	Aboriginal	Other	Ratio
Asthma	5.0	2.3	2.2	4.3	2.1	2.0
Bacterial disease	1.3	0.6	2.2	1.0	0.6	1.7
Influenzae and pneumonia	6.2	2.7	2.3	5.2	2.4	2.2
Intestinal infection disease	3.6	1.7	2.1	3.8	1.9	2.0
Otitis media	2.7	1.0	2.7	2.2	1.0	2.2

Note: Non-age-standardised hospitalisation rates.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

It can be seen from Table 9.6.1 that all hospitalisation rates for diseases associated with poor environmental health are higher for Aboriginal South Australians than they are for others. These hospitalisation rates demonstrate that Aboriginal people generally are at least twice as likely to be admitted to hospital for environmentally associated diseases than are non-Aboriginal South Australians.

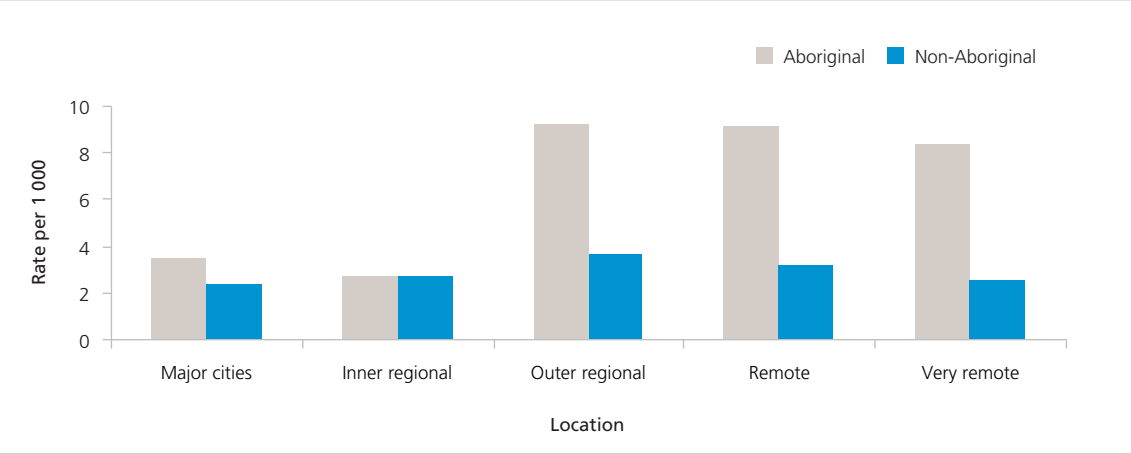
Graph 9.6.1 South Australian hospitalisation rates for intestinal infectious disease, by remoteness, three-year average, 2004–05 to 2006–07



Note: Non-age-standardised hospitalisation rates.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

Graphs 9.6.1 and 9.6.2 show the proportion of hospitalisations for intestinal infectious diseases, and influenza and pneumonia, using a three-year average. Admission to hospital for these conditions is more likely in outer regional and remote areas of South Australia. This finding strongly suggests that standards of environmental health for rural and remote Aboriginal communities are lower than those found in the major cities of South Australia. It also is noted that hospitalisations for influenza and pneumonia also are indicative of the extent and effectiveness of vaccination programs.

Graph 9.6.2 South Australian hospitalisation rates for influenza and pneumonia, by remoteness, 2004–05 to 2006–07



Note: Non-age-standardised hospitalisation rates.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

9.7 Risk factors

A strong association exists between the effects of health risk factors, and the onset and prognosis of a variety of chronic diseases. Many chronic diseases share common risk factors and the combination of multiple risk factors is likely to hasten development of disease. Health risk factors are associated with many aspects of socioeconomic status. It is well established that Aboriginal people experience disadvantage across numerous social and economic parameters.[12]

The health risk factors discussed here are behavioural in nature; however, other risk factors are recognised, such as environmental and socioeconomic influences. It is important to understand the effect of health risk factors, since the diseases that result are largely preventable.

9.7.1 Smoking

Smoking is associated with numerous chronic diseases including cardiovascular, chronic lung disease and cancer. Smoking during pregnancy has an adverse effect on foetal development. Other people also experience health effects from passive smoking, which can contribute to the onset of asthma and other chronic lung diseases.

Fifty-six per cent of Aboriginal people in South Australia in 2004–05 were current smokers, compared to 52 per cent of the total Australian Aboriginal population and 23 per cent of the non-Aboriginal Australian population (Table 9.7.1).[13, 14]

Table 9.7.1 Smoking status, Aboriginal South Australia by location, Australia by Aboriginal status, 2004–05

	South Australia — Aboriginal			Australia	
	Remote per cent	Non-remote per cent	Total per cent	Aboriginal per cent	Non-Aboriginal per cent
Smoker status					
Current smoker	53	57	56	52	23
Ex-smoker	16	17	17	20	30
Never smoked	31	26	27	28	47

Note: Smoking status 'not known' was excluded.
Source: Australian Bureau of Statisitcs (ABS), National Aboriginal and Torres Strait Islander Health Survey, 2004–05 (NATSIHS, 2004–05) and ABS National Health Survey 2004–05 (NHS, 2004–05).

Smoking was less prevalent in remote areas of South Australia. A more detailed breakdown of the data by gender, (data not shown in Table 9.7.1), indicates a greater percentage of South Australian Aboriginal males (59.5 per cent) smoked than did Aboriginal women (52.8 per cent). This difference is more substantial in remote South Australia where 61.6 per cent of Aboriginal males smoked compared to 46.8 per cent of women.[13]

9.7.2 Overweight and obesity

Overweight and obesity are risk factors for various chronic diseases, including renal disease, Type 2 diabetes and cardiovascular disease. Overweight and obesity also can be associated with poor self–image and psychological problems.

The South Australian Aboriginal population reported the highest proportion of overweight or obese people (64 per cent) of all Aboriginal people from other Australian jurisdictions (Table 9.7.2).[13]

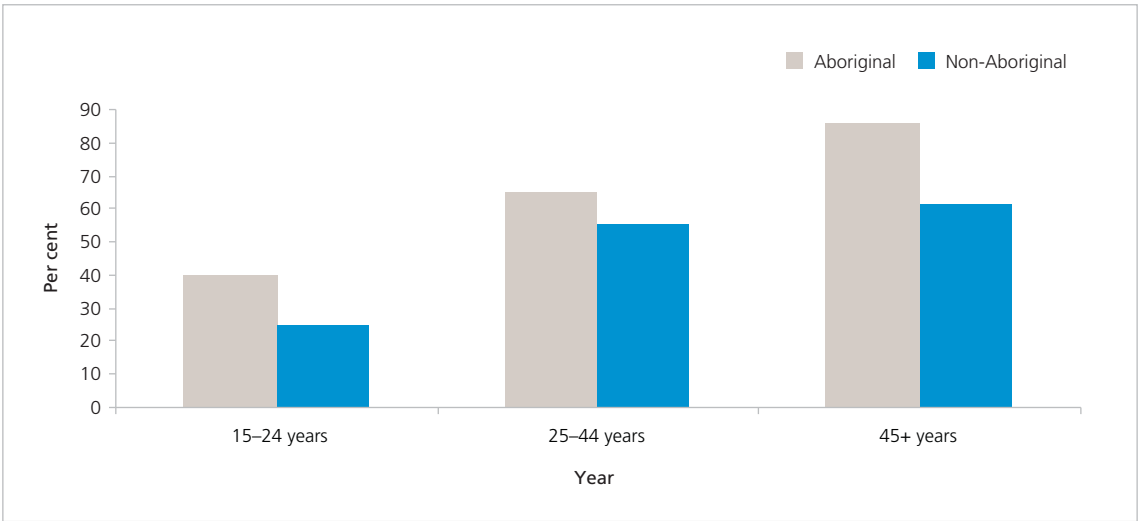
Table 9.7.2 Aboriginal overweight and obesity, by state and territory, 2004–05

	State/Territory								Australia
	South Australia	Victoria	New South Wales	Queensland	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Total
Overweight/ obese per cent	64	48	59	58	59	54	50	58	57

Note: 15 years and over. Excluding body mass unknown. Measured using Body Mass Index.
Source: Australian Bureau of Statisitcs (ABS), NATSIHS, 2004–05

The percentages of overweight or obese people are higher for Aboriginal South Australians across all age groups than for non-Aboriginal South Australians (Graph 9.7.1). Most striking is the difference between the Aboriginal and non-Aboriginal 15–24 years age group, recording levels of overweight or obese of 40 per cent and 25 per cent respectively.

Graph 9.7.1 Overweight or obese, by Aboriginality, in South Australia, 2004–05



Source: Australian Bureau of Statisitcs (ABS), NATSIHS, 2004–05.

9.7.3 Alcohol consumption

Excessive alcohol consumption is associated with a number of adverse health and social consequences. It is a risk factor for liver disease, pancreatitis, Type 2 diabetes and some types of cancer.

Alcohol consumption is associated with traffic accidents, injury and has psychological consequences. The social ramifications of excessive alcohol consumption can include family violence and breakdown of relationships.[10]

Aboriginal people of South Australia and across Australia are less likely to consume alcohol than are non-Aboriginal people. Close to 44 per cent of Aboriginal South Australians did not consume alcohol in the week prior to the *National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) 2004–05*, compared to 27 per cent of non-Aboriginal Australians (Table 9.7.3). Those Aboriginal South Australians who did drink were more likely to consume alcohol at risky or high-risk levels. Seventeen per cent of the South Australian Aboriginal population surveyed reported risky to high-risk drinking in the week prior to interview. Aboriginal South Australians living in non-remote locations were more likely to consume alcohol at risky or high-risk levels (18.6 per cent) than were remotely located Aboriginal people (11.9 per cent).

Table 9.7.3 Alcohol risk, as percentage, Aboriginal South Australia by location, Australia by Aboriginal status, 2004–05

	South Australia — Aboriginal			Australia	
	Remote	Non-remote	Total Aboriginal South Australia	Aboriginal	Non-Aboriginal
Alcohol risk					
Low-risk	17.0	32.2	28.7	29.7	49.2
Risky/high-risk	11.9	18.6	17.0	15.3	13.5
Did not drink	51.9	41.5	43.9	42	27.3
Never consumed alcohol	18.2	7.1	9.7	11.4	8.8

Note: Risk level based on the Australian Alcohol guidelines, 2001. Based on consumption in week prior to survey.
Source: Australian Bureau of Statisitcs (ABS), NATSIHS, 2004–05 and ABS NHS, 2004–05.

9.8 Mental health

Mental health for Aboriginal people is a product of social and emotional wellbeing that is related to individual, family and community relationships. Socioeconomic disadvantage contributes to reduced states of physical and emotional wellbeing. High rates of suicide, intentional self-harm, violence and incarceration for Aboriginal people are related directly to the emotional wellbeing of individuals, which in turn contributes to further emotional trauma.[15]

Consequences of excessive consumption of alcohol and substance use contribute to social breakdown and contact with the criminal justice system, as well as having a direct effect on mental health.

A modification of the Kessler Psychological Distress Scale–10 (K10) of non-specific psychological distress was used, for the purposes of the *National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) 2004–05*. The K10 yields a measure of psychological distress based on questions about negative emotional states experienced in the four-weeks prior to interview. Five questions (K5) were selected for the *NATSIHS 2004–05* regarding feeling nervous, without hope, restless or jumpy, everything was an effort, and, so sad that nothing could cheer them up.

Results from the NATSIHS 2004–05 showed that 30.2 per cent of South Australian Aboriginal people experienced high to very high distress levels, which was higher than the Australian Aboriginal average and 2.3 times higher than the proportion (13.1 per cent) in the non-Aboriginal Australian sample (Table 9.8.1).[12]

Table 9.8.1 Psychological distress (K5), South Australia Aboriginal, Australia Aboriginal and non-Aboriginal

	South Australia Aboriginal per cent	Australian Aboriginal per cent	Australian non-Aboriginal per cent
Low/moderate distress level	67.1	71.3	86.8
High/very high distress level	30.2	27.2	13.1

Note: Includes refusals and persons with no score.
Source: Australian Bureau of Statisitcs (ABS), *NATSIHS 2004–05*, NHS Table 9A.4.1 9A.4.2 Overcoming Aboriginal Disadvantage: Key Indicators 2007.

Interstate comparison of hospitalisations for the principal diagnosis of a mental health-related condition (includes behavioural disorders due to alcohol or substance use) for the four jurisdictions (South Australia, Queensland, Western Australia and Northern Territory) 2002–2004 shows that South Australian Aboriginal people had the highest rate of 41.0 hospitalisations per 1 000 and 3.2 times the South Australian non-Aboriginal rate (Table 9.8.2).[16]

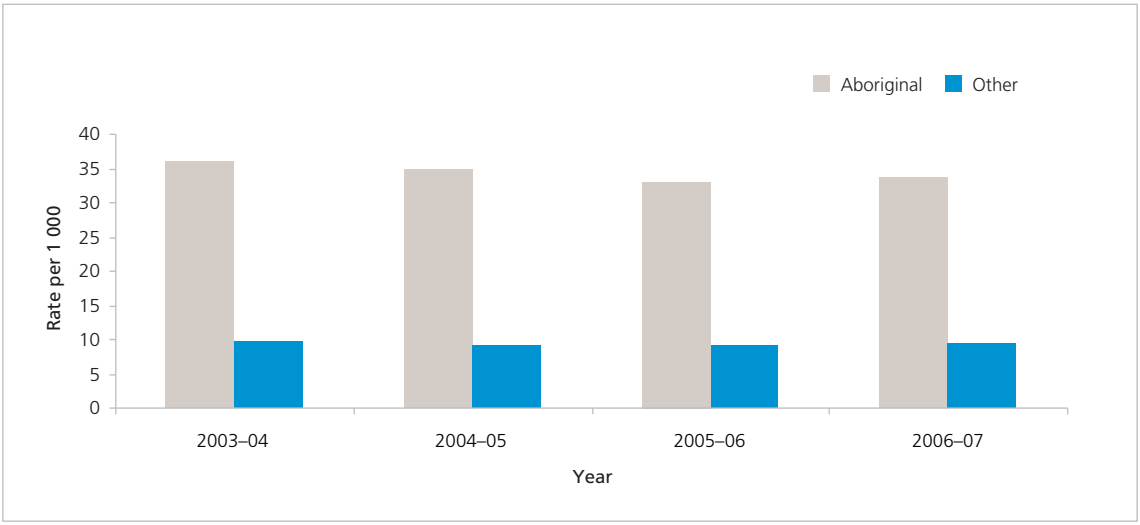
Table 9.8.2 Hospitalisations for the principal diagnosis of a mental health-related condition

	South Australia	Queensland	Western Australia	Northern Territory
Aboriginal	41.0	20.0	32.7	9.0
Other	12.8	14.7	13.2	5.0

Note: Age standardised rate per 1 000.
Source: *Aboriginal and Torres Strait Islander Health Performance Framework 2006:* detailed analysis.

Analysis of South Australian hospitalisations for mental health-related conditions (includes behavioural disorders due to alcohol or substance use), over a four-year period, shows a constant rate of hospitalisation. The crude hospitalisation rate was 33.6 hospitalisations per 1 000 for South Australian Aboriginal people in 2006–07 — 3.5 times higher than the non-Aboriginal rate (Graph 9.8.1).

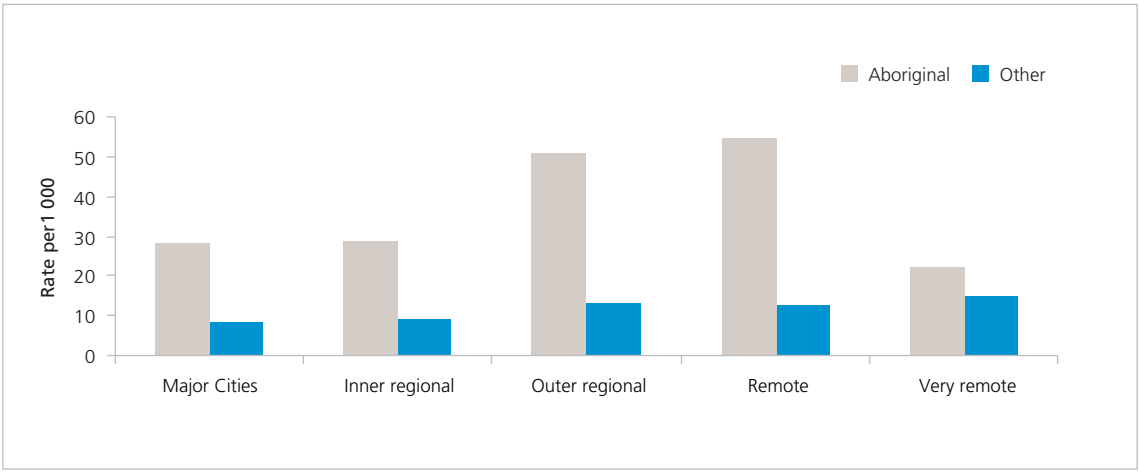
Graph 9.8.1 South Australian hospitalisation rates for mental health conditions, 2003–04 to 2006–07



Note: Non-age-standardised hospitalisation rates.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

Analysis of mental health hospitalisations by remoteness shows an increasing rate with increasing remoteness for South Australian Aboriginal people, excluding the result for very remote South Australia (Graph 9.8.2). Hospitalisation of Aboriginal people in very remote regions is likely to be influenced by referral to the Northern Territory for people on the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands as well as by lack of access resulting in avoidance of hospital care.

Graph 9.8.2 South Australian hospitalisation rates for mental health conditions by remoteness, three-year average, 2004–05 to 2006–07



Note: Non-age-standardised hospitalisation rates.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

9.9 Oral health

Aboriginal people are more likely to have lost all their teeth, have gum disease, receive less caries treatment and more likely to have untreated dental disease.[2]

The National Survey of Adult Oral Health 2004–2006 reported disproportionately elevated rates of tooth loss, untreated decay and tooth wear among Aboriginal Australians. Oral examination results were consistent with the findings of Aboriginal people who self-reported poor oral health, more toothache and difficulty eating, due to dental problems.[17]

The dmft (sum of decayed, missing and filled *primary* teeth) and DMFT (sum of Decayed, Missing and Filled *permanent (adult)* teeth) indices commonly are used to measure oral health outcomes.

9.9.1 Children

Many Aboriginal children experience expensive destruction of their deciduous teeth especially in remote communities where treatment options are limited. Oral disease influences systemic health and the quality of life from childhood through to adulthood.[21] It has been noted that the relatively poor oral health of Aboriginal children appears to begin early in life.[18] Poor dental health is evident from the age of four-years-old for Aboriginal South Australians. Aboriginal children show poorer outcomes than other children across all oral health indicators.[16]

Comparisons possible with other jurisdictions in Australia indicate Aboriginal South Australian children have poorer oral health (DMFT scores) than Aboriginal children from New South Wales and similar results to Aboriginal children from the Northern Territory.[16]

Details on the mean number of decayed, missing or filled teeth in South Australia children are presented in Table 9.9.1, indicating higher rates of decay, missing and filled teeth.

Table 9.9.1 Mean number of decayed, missing or filled teeth, South Australian children, 2003

	Aboriginal	Other	Ratio
4–6 years-olds, primary teeth			
decayed	2.23	0.91	2.4
missing	0.33	0.08	4
filled	1.1	0.58	1.9
dfmt	3.66	1.58	2.3
8–10 years-olds, permanent teeth			
Decayed	0.48	0.19	2.5
Filled	0.31	0.25	1.2
DFMT	0.83	0.45	1.8
12–14 years-olds, permanent teeth			
Decayed	0.94	0.41	2.3
Filled	0.86	0.65	1.3
DFMT	1.85	1.08	1.7

Source: Australian Institute of Health and Welfare (AIHW), Dental Statistics and Research Unit.

Data from the SA School Dental Service show that Aboriginal children have a lower percentage of healthy gums and a higher percentage of bleeding gums than do other children in the age groupings 6–7 and 14–15 years of age.[19]

Aboriginal children living in the regional area of Port Augusta were compared with non-Aboriginal children living in the same region over a five-year period, between 2001–2006. Aboriginal children had 2.7 times the mean number of decayed primary and permanent teeth compared to their non-Aboriginal counterparts. The dmft for Aboriginal children was 1.6 times the mean of non-Aboriginal children. Aboriginal children aged under 10 had 1.9 times the mean dmft of other Australian children living in the area.[20]

The rates for hospital dental procedures for Aboriginal children were shown to increase with geographic remoteness, with procedures for extraction and restorative treatment in children aged below five,1.5 times greater than other Australian children.[21]

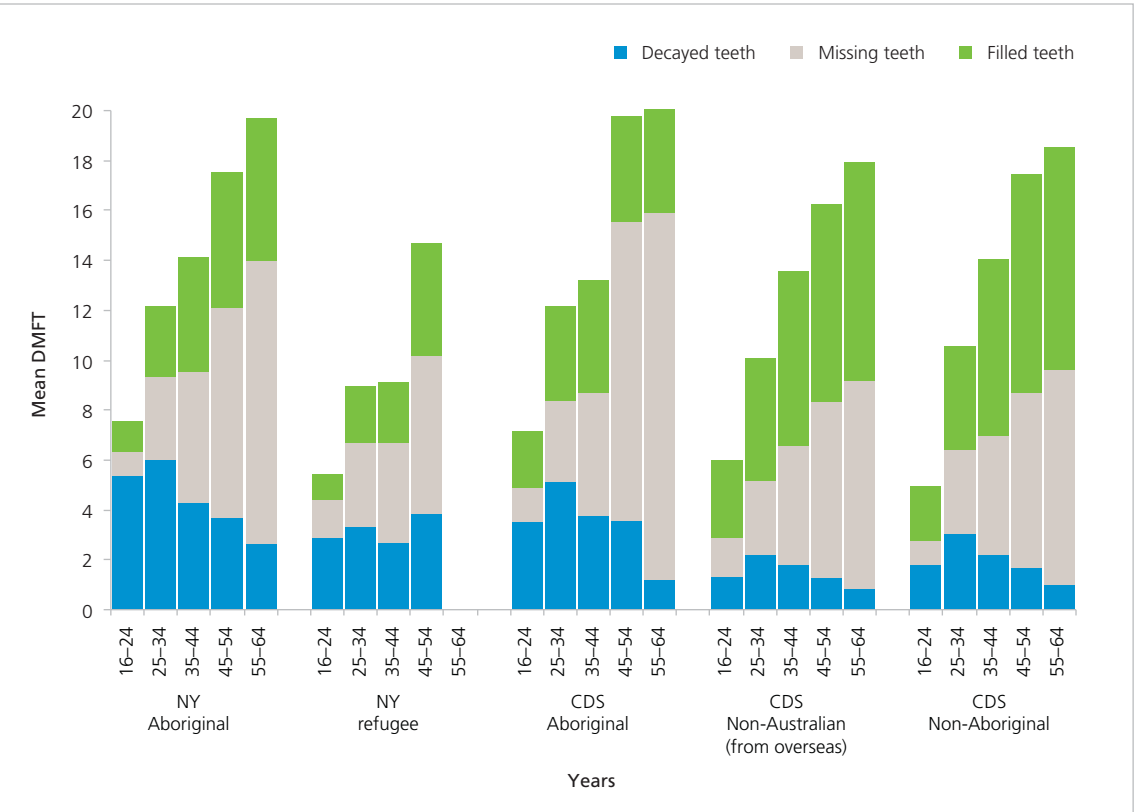
9.9.2 Adults

The latest national data on DMFT scores for Aboriginal adults comes from adults seeking public dental care in Australia, 2001–02.[16] There is a consistent pattern, although little difference exists between Aboriginal and other Australians in the DMFT measure, for adult age groupings. Aboriginal people over the age of 25 years had more missing teeth than other Australians and, in all adult age groups, the mean number of decayed teeth was higher for Aboriginal people. The mean number of filled teeth was higher for non-Aboriginal people in all adult age groups, indicating a higher rate of treated dental disease.

Aboriginal adults in South Australia, who received dental services from public clinics, demonstrated less dental disease than did other public dental patients.[19] Aboriginal South Australians in the age group 25–44 years, who are receiving public dental services, have a lower DMFT score (8.7 teeth) compared to other public patients (12.9 teeth).

Aboriginal clients attending dental services provided by the Aboriginal Community Controlled Health Organisation, Nunkawarrin Yunti and South Australian Dental Service Community Clinics from February 2005 to 2007, by contrast, reported far greater experience of dental decay and missing teeth compared to other cardholders in each category (graph 9.9.1). Other cardholders eligible for these services include refugees, other non-Australians and non-Aboriginal Australians.

Graph 9.9.1 Mean adult dentate DMFT, 16–64 year-olds, Nunkawarrin Yunti and South Australian Dental Service CDS, 2005–2007



Note: NY = Nunkawarrin Yunti, CDS = Community Dental Service. DMFT: decayed, missing, filled teeth.
Source: Nunkawarrin Yunti Aboriginal Community Controlled Health Organisation.

9.10 Health service access and equity

It is important in assessing the health status of minority population groups to understand the relationship between fair and reasonable access to appropriate health services and overall health outcomes.

Access and equity issues for Aboriginal people are difficult to analyse and require a level of qualitative assessment through the use of a number of indirect measures. Physical location, levels of health expenditure and provision of culturally appropriate environments will all affect the uptake and use of health services. The willingness of Aboriginal people to use health services may be influenced by community control of the health service, gender and age characteristics of staff, and availability of Aboriginal staff.

9.10.1 Geography

South Australian discrete Aboriginal communities — of all Australian states and territories — are the most geographically isolated from health services. Around 45 per cent of South Australian Aboriginal communities are located 250 km or more from an Aboriginal primary health centre or hospital.[22] Only 13 per cent of Aboriginal communities across Australia are located 250 km or more from an Aboriginal primary health care centre.

Twenty-six per cent of Aboriginal people (for the period 2004–05 in South Australia) went to an Aboriginal Medical Service if they had a problem with their health; 68 per cent reported going to a doctor.[16]. Table 9.10.1 shows the ratio of doctor to Aboriginal Medical Service use for all of Australia, dependent on remoteness. The reliance of Aboriginal people on Aboriginal medical services is evident with increasing remoteness.

Table 9.10.1 Regular health care by remoteness, Aboriginal person, 2004–05, Australia

	Doctor	Aboriginal medical service
Adelaide	80	15
Inner regional	80	11
Outer regional	67	26
Remote	34	45
Very remote	6	76
Total Australia	**60**	**30**

Source: 2004–05 NATSIHIS, ABS and AIHW [2]

Analysis of the *NATSIHS 2004–05* indicates that remoteness is a factor for Aboriginal people not going to a general practitioner over the previous 12 months, across all of Australia. Logistical reasons were cited for 44.9 per cent of Aboriginal people in a remote location as the reason for not using the services of a general practitioner in the last 12 months compared to only 21.5 per cent of people in non-remote settings (Table 9.10.2).

Table 9.10.2 Reasons for not going to the GP in the last 12 months, 18+ years, Aboriginal Australia

	Remote (per cent)	Non-remote (per cent)
Cost	3.4	14.2
Personal reasons(a)	36.3	40.1
Logistical reasons(b)	44.9	21.5
Other reasons	22.5	27.9
Decided not to seek care	5.2	11.4

Note (a): Personal reasons included too busy, discrimination, service not culturally appropriate, language problems, dislikes services, afraid, embarrassed, or felt service would be inadequate.
Note (b): Includes transport /distance, service not available, waiting time too long, or service not available at the time required.
Source: Australian Bureau of Statistics (ABS), 2004–05 NATSIHS (unpublished).[12]

9.10.2 Discharge against medical advice

Aboriginal South Australians demonstrate different behavioural characteristics than other South Australians in response to contact with health services. Aboriginal people as health consumers are more likely to demonstrate compliance with treatment, continue to use health services and actively participate in their treatment if they are satisfied.

Discharge against medical advice provides indirect evidence of the extent to which hospital services are appropriate or not for the needs of Aboriginal people. Table 9.10.3 describes the proportion of hospital separations for which patients were discharged against medical advice. Aboriginal South Australians discharge themselves against medical advice for all diagnoses at a rate six times higher than that of other South Australians.

Table 9.10.3 Proportion of separations for which patients were discharged against medical advice, by principal diagnosis category and Aboriginal status, 2006–07

	Aboriginal per cent	Other per cent
Diseases of the circulatory system	4.0	0.4
Diseases of the digestive system	6.7	0.6
Diseases of the ear	1.0	0.1
Diseases of the eye	1.8	0.1
Diseases of the genitourinary system	2.8	0.3
Diseases of the musculoskeletal system	5.3	0.3
Diseases of the nervous system	9.9	0.6
Diseases of the respiratory system	6.2	0.7
Diseases of the skin	6.9	0.6
Endocrine, nutritional and metabolic diseases	3.8	0.7
Factors influencing health status	0.2	0.0
Infectious and parasitic diseases	3.6	0.5
Injury, poisoning, external causes	7.9	1.2
Mental and behavioural disorders	10.1	3.0
Neoplasms	0.4	0.1
Pregnancy, childbirth	2.9	0.2
Symptoms, signs n.e.c	8.1	1.2
Other diagnoses (a)	5.5	0.4
All separations	**3.2**	**0.5**
All separations (excluding mental and behavioural disorders)	2.8	0.4

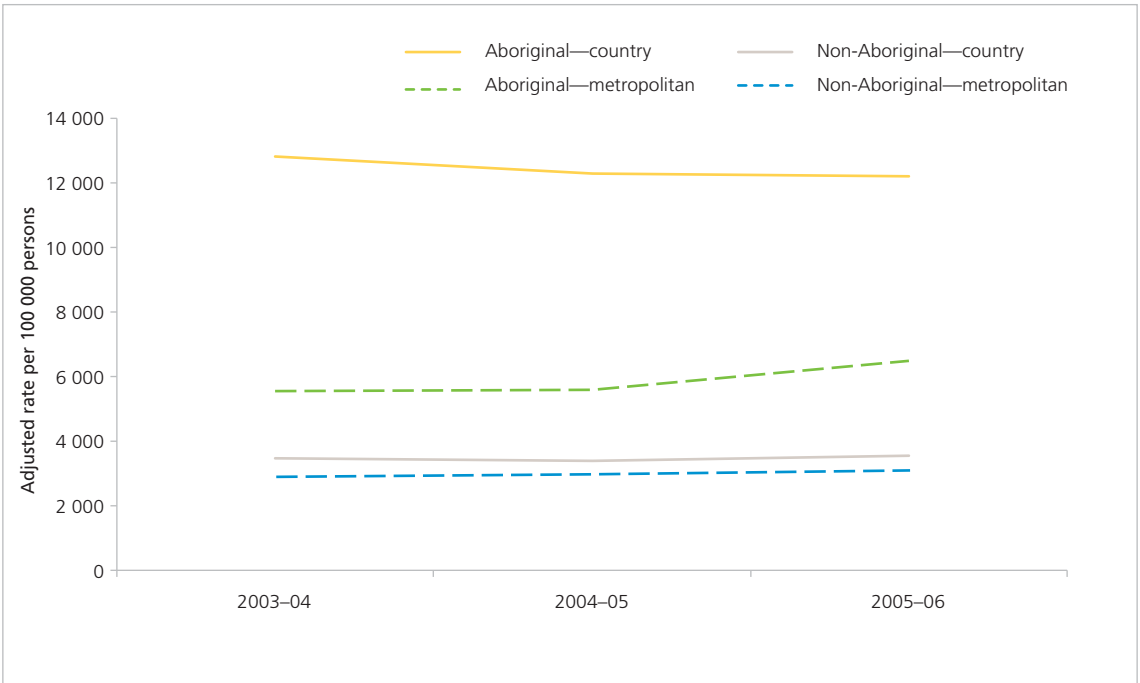
Note 1: ISAAC subsetting rules have been applied.
Note 2: Other includes separations for non-Aboriginal Australians and those for whom Aboriginal status was not stated.
(a) Includes factors influencing health, infectious and parasitic diseases, neoplasms, diseases of the blood, diseases of the genitourinary system, diseases of the eye, diseases of the ear, certain conditions originating in the perinatal period and congenital malformations.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

9.10.3 Hospitalisation for potentially preventable conditions

Potentially preventable hospitalisation rates indicate the effectiveness of non-hospital care; an analysis of the rates by location gives an indirect measure of the effect of remoteness on access to appropriate primary health care.

Conditions that are included in this group include vaccine preventable diseases (for example, influenza), potentially preventable acute diseases (for example, acute infections) and chronic disease (for example, diabetes).

Graph 9.10.1 Selected potentially preventable hospitalisation by Indigenous identification, South Australia, 2003–04 to 2005–06



Source: SA Health.

Potentially preventable hospitalisation rates for non-Aboriginal South Australians vary little between patients from metropolitan and country locations (Graph 9.10.1). The rates of hospitalisation for Aboriginal people are higher than for other South Australians within both metropolitan and country categories. Most strikingly, Aboriginal people from country South Australia experience over twice the rate of hospitalisations for preventable conditions than do metropolitan Aboriginal people.

9.11 Data issues associated with Aboriginal people

Overview

Data associated with Aboriginal populations often suffers from issues of quality due to causes such as under-identification of Aboriginal status, under reporting and small numbers of events, preventing assessment of developing trends. It is recognised that the detail presented does not present a comprehensive description of the health of Aboriginal South Australians but, rather, an attempt to focus on the key health issues. Most of the information reported reflects the overall state of the health of Aboriginal people in South Australia and does not attempt to analyse specific health issues at a community level.

Population growth

Prediction between census periods of the population for a future year is necessary to describe the rate of occurrence of a particular health statistic for that year. The ABS published estimates of the Aboriginal population for the period of 2001–2009, based on assumptions of growth over previous time periods, level of under-identification of Aboriginal status and enumeration in the Census collections. A high and low series of population projections was published by the ABS for Aboriginal people in South Australia. The high series estimates show a growth over the 2001–2006 of 15.7 per cent compared to the low series estimates with 10.0 per cent growth. The low series projections are used for the purposes of reported health data for the South Australian Aboriginal population as they best reflect the actual population growth, defined by the 2001 and 2006 Census.

Population distribution

Analysis of remote and very remote hospitalisation data for South Australia can be problematic. A significant proportion of the hospital-based health services for residents of the APY Lands are provided in the Northern Territory owing to the proximity of the APY Lands to Alice Springs. Rates of hospitalisations from SA Health data collections record only those episodes that occur in South Australian hospitals. This association influences the overall rates of hospitalisation of Aboriginal South Australians, and especially those from the very remote area classification. The population proportions are used to determine South Australian population numbers for subsequent analyses on remote areas.

Life expectancy

The most current reported life expectancy data for South Australian Aboriginal people is reported for the 1996–2001 period. Comparisons are made to the closest chronological data sources for estimates of life expectancy for the total populations of South Australia and Australia. Life expectancy calculations group the South Australia and Western Australia Aboriginal data together to improve data quality.

Birthing outcomes

Comparison of SA Health, Pregnancy Outcomes Unit (POU) data with the national data sets of the ABS and AIHW is problematic due to lack of conformity of methodology. POU data is based on birthing activity occurring in South Australia, includes interstate residents and also is recorded at the time of birth. ABS and AIHW determine birthing outcomes based on the mother's usual place of residence and on the date of registration of birth. These differences can effect the birthing outcomes data for South Australia, as complex cases from the Northern Territory often are retrieved to major hospitals in Adelaide, and low complexity cases from the APY Lands usually are confined in Alice Springs.

Non-age standardised hospitalisation data derived from SA Health sources

The South Australia hospitalisation data presented in this chapter are not age-standardised, in contrast to the information reported from national sources. The effect of this is to limit the ability to compare hospitalisation rates between the Aboriginal and non-Aboriginal population. The impact of diseases that affect older age groups, such as cardiovascular disease, will be understated for the Aboriginal population as a result of the differences in the age profiles of Aboriginal and non-Aboriginal populations. Conversely, conditions that affect younger age groups will be overstated for Aboriginal people. This limitation must be considered when reviewing the following South Australia-specific data for cardiovascular disease, diabetes, renal disease, and chronic obstructive pulmonary disease. All data using 'crude' non-age standardised rates have been identified.

9.12 Services and initiatives

9.12.1 Burden of disease

The current methodology used to determine the burden of disease for Aboriginal South Australians calculates the level of premature mortality; that is, Years of life lost (YLL). This measure is limited in that it does not account for morbidity, or the burden of disease associated with disability. SA Health currently is working towards developing a means of measuring Health adjusted life expectancy (HALE) for Aboriginal people and this will be used in ascertaining progress for Target 2.5 of *South Australia's Strategic Plan:* T2.5 Aboriginal healthy life expectancy: lower the morbidity and mortality rates of Aboriginal South Australians.

9.12.2 Birthing outcomes

The *Our Culture, Our Babies, Our Future: Improving Aboriginal and Torres Strait Islander Birthing Outcomes Context and Framework for Action* has been completed and a statewide implementation strategy is being developed by the Children, Youth and Women's Health Service.

The 'Connecting Mums' program (previously the 'Parent and Infant Mental Health in the Community Project: Feeling Attached') is now an Aboriginal and Torres Strait Islander-specific program. The program has increased the awareness of the needs of Aboriginal mothers and babies, and improved the communication between mainstream and Aboriginal health services to manage issues for Aboriginal mothers and infants through childcare and early childhood services. Programs have been conducted in Alice Springs and Darwin, and others are planned in 2008 for Katherine and Alice Springs. A training workshop has been conducted in the Coorong.

9.12.3 Chronic disease

The Menzies School of Health's *Audit and Best Practice in Chronic Disease* research program (ABDC) is being considered for use in South Australia. This Participatory Action model includes audit system assessment, data analysis and reporting in individual health units to improve service delivery and individual health outcomes around chronic disease management.

9.12.4 Risk factors

9.12.4.1 Smoking

A 'Smoke-Free Pregnancy Project, Stage 4, Aboriginal Women and Their Families' is being considered as a means of increasing smoke-free pregnancy among Aboriginal women.

A $130 000 per annum five-year project will reduce Aboriginal tobacco use and exposure to passive smoking in communities identified by the Healthy Ways Project.

9.12.4.2 Obesity

A Healthy Weight Project Officer position has been established to coordinate plans across SA Health to implement the *Eat Well Be Active Healthy Weight Strategy*, and to develop an evaluation framework.

SA Health and five other jurisdictions, including the Australian Government, are jointly funding the national Remote Aboriginal Stores and Takeaways project (RIST) to support the provision and promotion of healthy food in remote community stores. The Department of Transport, Energy and Infrastructure is working with SA Health to support the development of freight plans in remote South Australian Aboriginal communities.

'Community Foodies' continued to grow in 2006–07 at existing sites in Whyalla and Enfield. Future projects are planned for the western metropolitan region in the remainder of 2007.

9.12.4.3 Alcohol

A substance misuse service for the Anangu Pitjantjatjara Yunkunytjatjara (APY) Lands, being developed by Drug and Alcohol Services SA, will include a residential facility for eight people at Amata and a mobile outreach service. The building of the main residential facility is expected to be completed in time to begin operations in 2008.

9.12.4.4 Mental Health

A Memorandum of Understanding cross-border agreement between SA Health and the Northern Territory Department of Health and Community Services was finalised during the year. This agreement was developed to enhance the capacity of the Central Australian Remote Mental Health Team to support the Anangu Pitjantjatjara Yunkunytjatjara (APY) Lands and APY Land people residing in the Northern Territory. Services offered include providing a psychiatrist, mental health nurse and social worker based at the Alice Springs hospital.

The Pika Wiya Shared Care Project (Port Augusta) provides increased psychological and psychiatric services in the north and far western region.

Child Adolescent Mental Health Services (CAMHS) has appointed three Aboriginal staff as Aboriginal Child and Adolescent Mental Health Consultants. Two of these positions work with Aboriginal children and young people in the Magill and Cavan Youth Training Centres. The third position is based within the CAMHS Community service based in Port Adelaide.

SA Health is working collaboratively with the Social Inclusion Unit on its regional youth suicide initiative and programs which encompass Aboriginal needs in all of country South Australia.

Northern CAMHS Country negotiated in 2006 a contract with Northern and Far Western Regional Health Service (Country Health SA) to provide clinical child and adolescent mental health services to the APY Lands. A small, multi–disciplinary team from Child and Adolescent Mental Health was involved in a pilot visiting service to a range of communities across the APY Lands. There has been a strong focus on responding to concerns raised within the communities in regard to sexualised behaviour and child sexual abuse. It is anticipated that future visits will be made every two months, with extension of this service through new funding from Healthy Young Minds.

9.12.4.5 Equity and Access

Developing a culturally responsive health system is a key objective of the *SA Health Strategic Plan*. The process of involving key stakeholders from across the health system in developing an Aboriginal Health Policy for SA Health has been part of a long process of raising awareness of Aboriginal issues and addressing practice issues.

SA Health participated in the development of the Australian Health Minsters' Advisory Council (AHMAC) *Cultural Respect Framework (CRF)*; this is to be used as a guiding principle in policy construction and service delivery.

The *CRF* is designed to assist in implementing initiatives to strengthen relationships between the health care system and Aboriginal and Torres Strait Islander people, and to improve the response from mainstream health services.

The *Cultural Respect Framework* is being implemented currently across the SA Health system as a critical component of regional Aboriginal health improvement plans.

SA Health also has developed an *Aboriginal Health Impact Statement* that includes guidelines and check lists designed to help the portfolio to address Aboriginal interests in all its policies, programs, services and evaluations.

The Aboriginal Health Division is working with health regions on implementing the *Aboriginal Health Impact Statement* process which will be monitored on an annual basis through the Regional Aboriginal Health Improvement Plans.

A number of other activities address access and equity in specific areas of the health portfolio.

'Perko Ngurratti' Cancer Forum was held in September 2007 — co-hosted by the Aboriginal Health Council of South Australia and the Cancer Council South Australia — and, as a result, the organisations are collaborating to address the recommendations from the forum. The forum provided an opportunity for Aboriginal community members and health professionals to discuss their cancer experiences and to raise awareness of issues faced by Aboriginal people with cancer.

The Aboriginal Community Enhancement Program aims to strengthen the capacity of Aboriginal communities to improve health and wellbeing outcomes for their community. The program supported nine projects by incorporated Aboriginal organisations in 2006–07, addressing their health and wellbeing priorities around the social determinants of health. These projects included upgrading community buildings; the Healthy Food, Healthy Living program; and the Bush Tucker and Market Garden Project.

A new step-down facility in Ceduna was established to assist with coordinating the care of Aboriginal clients from Yalata, Oak Valley, Koonibba and transient groups from the Anangu Pitjantjatjara Yunkunytjatjara (APY) Lands in relation to their hospital admission, discharge, hospital transfer, transport and follow-up.

The Regional Aboriginal Integrated Social and Emotional (RAISE) Wellbeing Program, will look at the development and sustainability of Aboriginal and mainstream primary health care programs in Port Augusta as part of the Mapping Aboriginal Health Partnerships for Policy-Evidence Transfer (MAHPET).

The Mental Health Shared Care with GPs program involves providing specialist mental health workers to work with GPs and Aboriginal specialists in metropolitan Adelaide and selected country regions. Four Aboriginal specific metropolitan and rural positions began in 2007.

9.13 Notes

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10 Health care services and resources

In this chapter

Summary

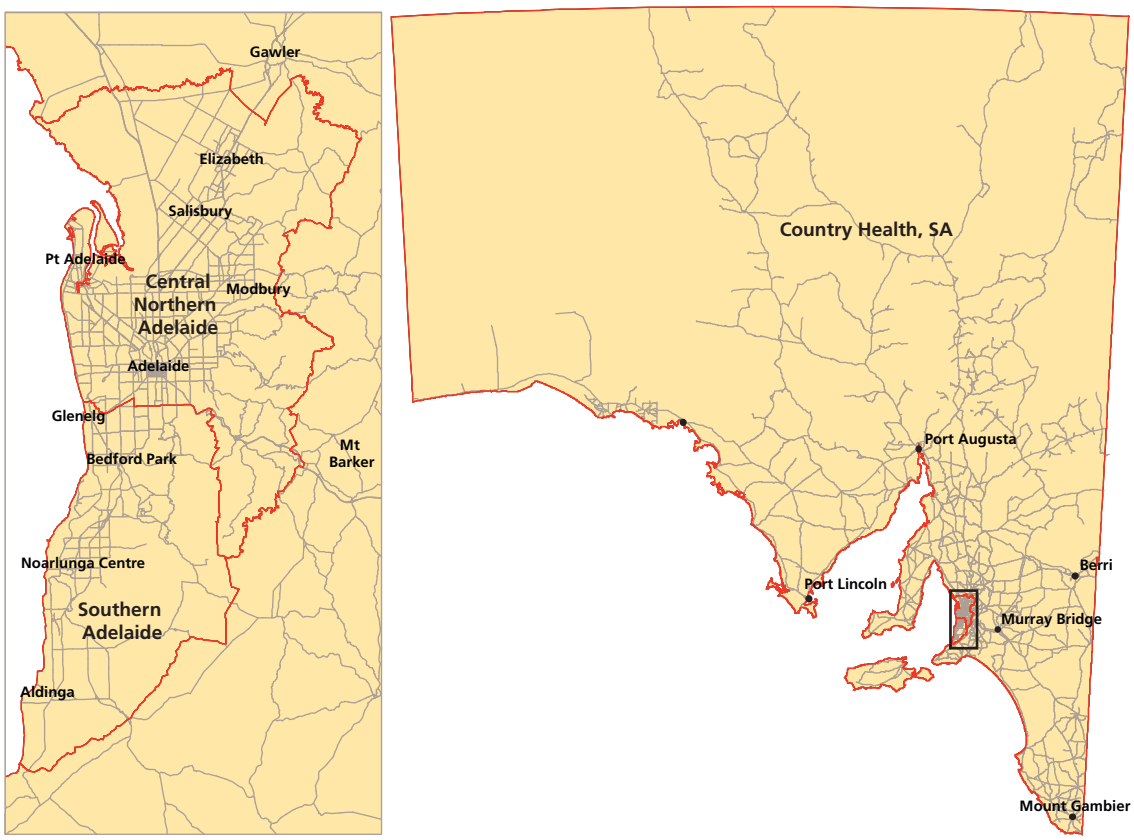
- Hospital use has increased progressively over the years. There were 619 419 separations reported in South Australian public and private hospitals during 2006–07, an increase of 21 316 (3.6 per cent) compared to 2005–06.
- The number of separations in private hospitals between 2002–03 and 2006–07 increased by 13.3 per cent (24 805), while separations in public hospitals increased by 11.8 per cent (40 251).
- The average length of stay in South Australian hospitals (excluding same-day separations) has decreased from 6.6 days in 2002–03 to 6.4 days in 2006–07.
- Presentations in metropolitan public hospital emergency departments (ED) increased 5.8 per cent over the previous financial year. There were 348 075 presentations of which 170 605 attendances were classified as resuscitation/emergency/urgent (49.0 per cent) and 177 470 were classified as less urgent (51.0 per cent).
- The total percentage of emergency patients seen within the specified waiting time targets, based on urgency of required treatment, among metropolitan public hospitals has increased from 50.0 per cent in 2003–04 to 63.7 per cent in 2006–07.
- Just over 80 (82.4) per cent of elective surgery patients during 2006–07 were seen within the clinically appropriate time.
- The total South Australian general practitioner (GP) headcount during 2005–06 was 2 042. The number of full-time workload equivalent (FWE) GPs practising in the state was 1 404, an increase of 2.9 per cent from the previous year.[6]
- There were 8.306 million general practitioner attendances (including practice nurses) within South Australia during 2006–07.
- The number of potentially preventable hospitalisations increased 6.7 per cent between 2004–05 (52 092) and 2005–06 (55 562).
- The Royal District Nursing Service of SA Inc (RDNS) had 20 648 clients within metropolitan Adelaide during 2006–07. RDNS nurses made 527 285 nursing and support visits (an increase of 4 per cent from 2005–06) and conducted 225 085 other client contacts (an increase of 3 per cent from 2005–06).
- Metro Home Link provided 14 706 care packages to 12 857 patients during 2006–07; nearly 8 000 (7 872) of the total number were hospital avoidance packages, with the remaining 6 834 being hospital supported discharge packages.
- The State Government provided financing of $3.043 billion to Health Regions and other health entities during 2006–07.

Introduction

SA Health is responsible for the effective administration and operation of South Australia's public health services. The Health Portfolio collectively is referred to as SA Health and consists of the Department of Health, the metropolitan health regions, Country Health SA and the SA Ambulance Service. Three regions manage the provision of health services in the metropolitan area: Central Northern Adelaide Health Service; Southern Adelaide Health Service; and the Children, Youth and Women's Health Service.

The first two regions named are responsible for providing services in defined geographical areas while the third region provides statewide services to children, youth and women. A new single country health region, Country Health SA, was established on 1 July 2006 to replace the previous seven country regions, with the objective of providing a more integrated system of care across country South Australia. Maps of the three geographical regions are shown below.

Figure 10.1 South Australian Health Service Regions



The four regions collectively provide to the people of the state hospital-based care, including medical, surgical and other acute services, in addition to mental health, rehabilitation, dental care, breast screening, drug and alcohol services, community health and public health-based services. Agencies that provide specific services include:

- public hospitals
- Child and Family Health (CFH)
- community health centres
- community mental health centres
- SA Dental Service (SADS)
- SA Ambulance Service
- Drug and Alcohol Services of SA (DASSA)
- Breast Screen SA
- Prison Health Services
- GP Plus Health Care Centres
- Institute of Medical and Veterinary Science (IMVS).

The Australian Government also plays an important role in the provision of health care. It administers two national subsidy schemes: the Medicare Benefits Scheme and the Pharmaceutical Benefits Scheme, which subsidise payments for services provided by doctors and optometrists, and for a high proportion of prescription medications purchased from pharmacies. The Australian Government also funds a wide range of services for older people (for example, residential aged care places and community aged care packages) and eligible veterans.

A large amount of non-hospital health care is provided by non-government providers, including private medical and dental practitioners, other health practitioners (such as physiotherapists, psychologists, and podiatrists) and pharmaceutical retailers.

There were 133 hospitals throughout South Australia in 2006–07, comprising 79 public and 54 private hospitals (which includes 23 free-standing day facilities). There were an average 7 188 available hospital beds in 2006–07, 4 895 in public hospitals and 2 293 in private hospitals.

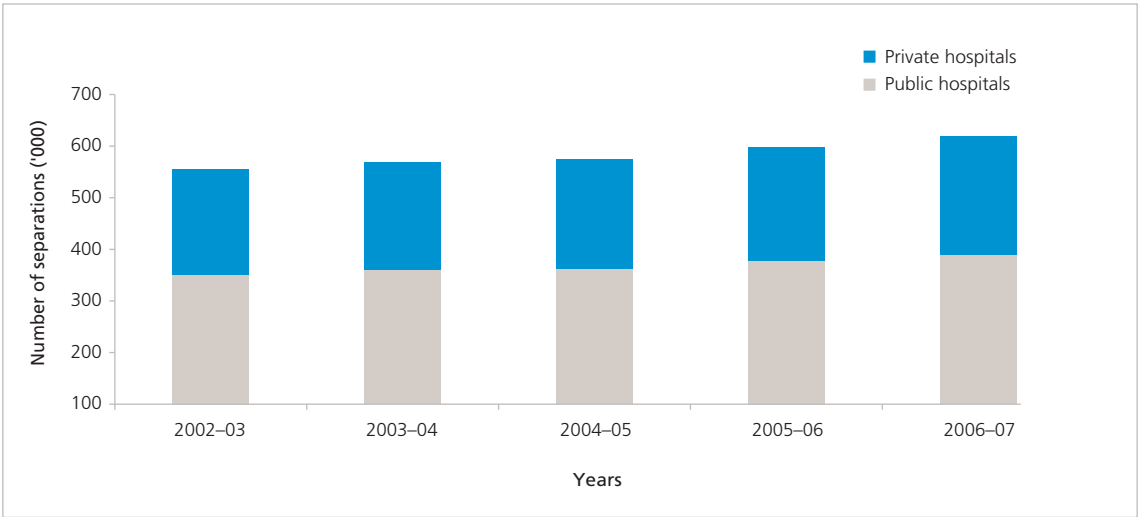
A comprehensive listing of health, family and community services offered across government, community and private sectors in South Australia, can be found at the Human Services Finder web site, <www.hsfinder.sa.gov.au>. Additional information on selected services and initiatives also can be found at the end of each chapter throughout this report.

This chapter provides information on the use of, access to, and spending on health care services in South Australia.

10.1 Hospital care

10.1.1 Inpatient separations

Graph 10.1.1 Public and private hospital separations, South Australia



Hospital type	2002–03	2003–04	2004–05	2005–06	2006–07
Public hospital	350.4	361.5	362.4	377.6	390.6
Private hospital	204.0	207.4	212.4	220.5	228.8
Total	554.4	568.9	574.8	598.1	619.4

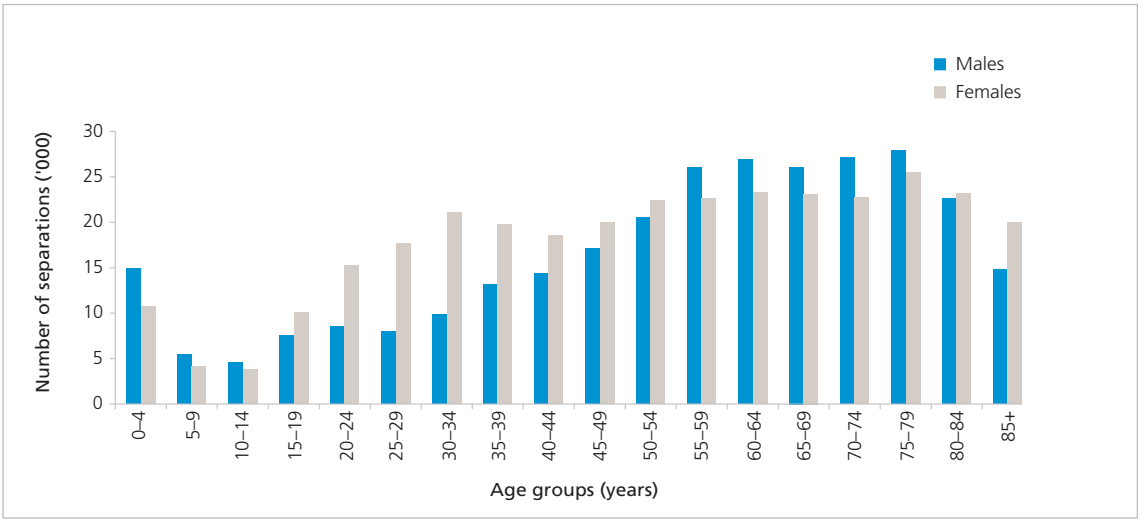
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

Hospital use has increased progressively over the years. There were 619 419 separations reported in South Australian public and private hospitals during 2006–07, an increase of 21 316 (3.6 per cent) compared with 2005–06; this was due predominantly to a 4.2 per cent increase in metropolitan public hospital separations during this period.

Private hospital demand for inpatient care has outpaced demand for the same care in public hospitals. Separations from private hospitals between 2002–03 and 2006–07 increased by 13.3 per cent (24 805), while separations in public hospitals increased by 11.8 per cent (40 251); this in part has been due to the growth in the number of private day surgery facilities.

Inpatient activity in metropolitan public hospitals has increased steadily due to advances in medical technology, population growth, the effect of ageing, the increase in demand for emergency department services, and an increase in the number of country residents receiving treatment in metropolitan public hospitals.

Graph 10.1.2 Public and private hospital separations by age and gender, South Australia, 2006–07



Note: Includes both public and private hospitals in South Australia.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

Females accounted for 52.3 per cent (323 713) and males for 47.7 per cent (295 693) of total hospital separations in 2006–07. Separations for females aged between 15–39 years exceeded male separations in the same group (largely due to admissions for birth), with males having higher numbers in the 55–79 age group.

The most common 'overnight' Extended service-related groups (ESRG) in the public sector during 2006–07 was *vaginal delivery*, accounting for 4.7 per cent (9 383) of total separations. Other leading ESRGs included *major psychiatric disorder* with 3.2 per cent (6 318), and *diseases of the digestive system including oesophagitis, gastroenteritis and other miscellaneous diseases* with 2.7 per cent (5 422). The corresponding top three 'overnight' ESRGs in the private sector were *other orthopaedics — surgical* with 6.8 per cent (6 375) of total separations, *non-acute rehabilitation* with 3.9 per cent (3 650) and *hip and knee replacement* with 3.8 per cent (3 553).

Table 10.1.1 South Australian private and public hospital 'overnight' separations by ESRG, 2006–07

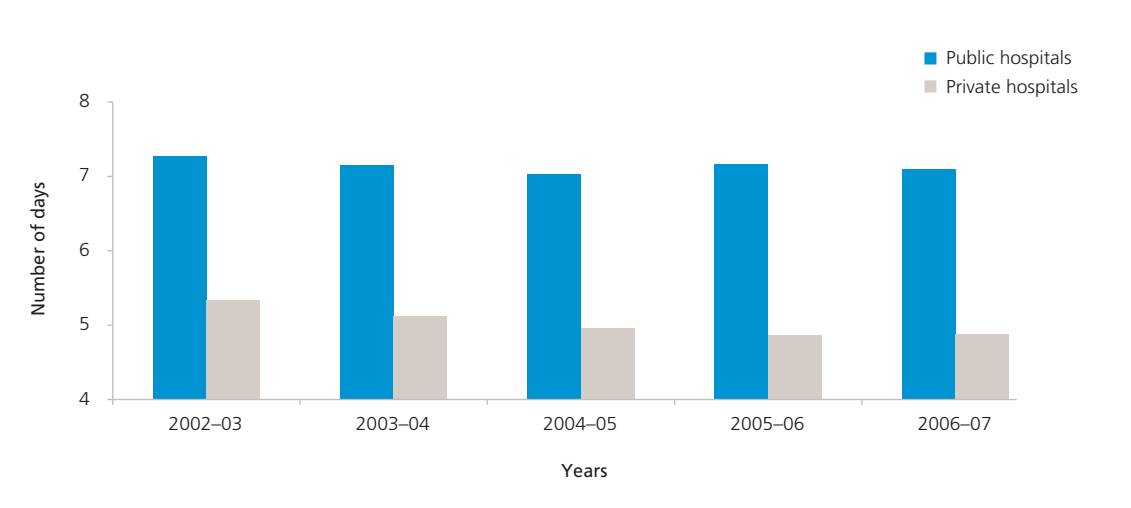
ESRG	Public hospitals Number	Public hospitals Per cent	Private hospitals Number	Private hospitals Per cent	Total Number	Total Per cent
Vaginal delivery	9 383	4.7	2 805	3.0	12 188	4.2
Other orthopaedics — surgical	5 021	2.5	6 375	6.8	11 396	3.9
Major psychiatric disorder	6 318	3.2	1 142	1.2	7 460	2.6
Non-acute rehabilitation	3 611	1.8	3 650	3.9	7 261	2.5
Chest pain	5 256	2.6	1 596	1.7	6 852	2.4
Oesophagitis, gastroenteritis and miscellaneous digestive system disorders	5 422	2.7	1 286	1.4	6 708	2.3
Caesarean delivery	4 001	2.0	2 249	2.4	6 250	2.1
Hip and knee replacement	2 087	1.1	3 553	3.8	5 640	1.9
Respiratory infections/inflammation	4 049	2.0	1 066	1.1	5 115	1.8
Other respiratory medicine	3 980	2.0	997	1.1	4 977	1.7
Chronic obstructive airways disease	3 829	1.9	793	0.9	4 622	1.6
Other procedural ENT (ear, nose, throat)	1 491	0.8	3 030	3.3	4 521	1.6
Other psychiatry	3 925	2.0	568	0.6	4 493	1.5
Other general medicine	3 407	1.7	890	1.0	4 297	1.5
Other urological procedures	2 089	1.1	2 133	2.3	4 222	1.4

Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

The most common 'same-day' ESRGs in both the public and private sector during 2006–07 were *renal dialysis*, *chemotherapy*, and *colonoscopy*, accounting for 38 per cent of total separations.

There were 299 048 elective and 192 373 emergency inpatient separations in South Australian hospitals during 2006–07. Elective separations were evenly distributed between public and private hospitals (46 and 54 per cent respectively). The majority of emergency inpatient separations in contrast were handled in public hospitals (84 per cent) compared to private (16 per cent).

Graph 10.1.3 Public and Private Hospital average length of stay (excluding same-day separations), South Australia



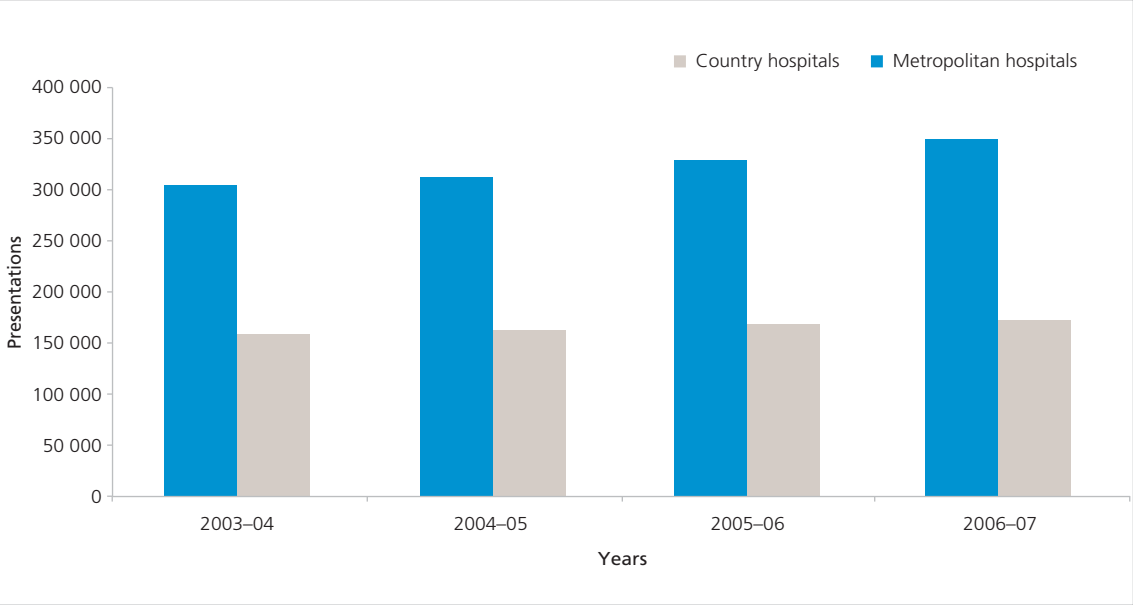
Note: Average length of stay is based on overnight separations only.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

The proportion of patients treated on a same-day basis is increasing due to improvements in clinical technologies, drugs, and patient procedures as well as better support for patients when they leave hospital. The proportion of same-day separations in all South Australian hospitals increased from 50.8 per cent in 2002–03 to 53.0 per cent in 2006–07. Private hospitals performed 59.4 per cent of their total separations on a same-day basis in 2006–07, compared to 49.2 per cent by public acute hospitals.

Lengths of stay in hospital are decreasing for overnight patients for similar reasons. Most patients require a relatively short stay in hospital unless rehabilitation, maintenance or palliative care is required. The average length of stay (excluding same day separations) has decreased in all South Australian hospitals from 6.6 days in 2002–03 to 6.4 days in 2006–07; in public acute hospitals, it decreased from 7.3 to 7.1 days, while private hospitals decreased from 5.3 to 4.9 days. This trend is growing throughout developed countries, and is believed to increase patient satisfaction as well as hospital throughput.[2]

10.1.2 Emergency department presentations

Graph 10.1.4 Public hospital emergency department presentations by hospital location, South Australia



Note: Includes South Australian public hospitals only.
Source: SA Health, Monthly Management Summary System.

South Australian emergency departments (ED) provide care to people who typically are experiencing a medical emergency. People presenting to an emergency department are assessed by a nurse and assigned a level of urgency, known as a triage category. Services provided by an emergency department can vary from managing relatively minor injuries and conditions to treating patients who are critically ill.

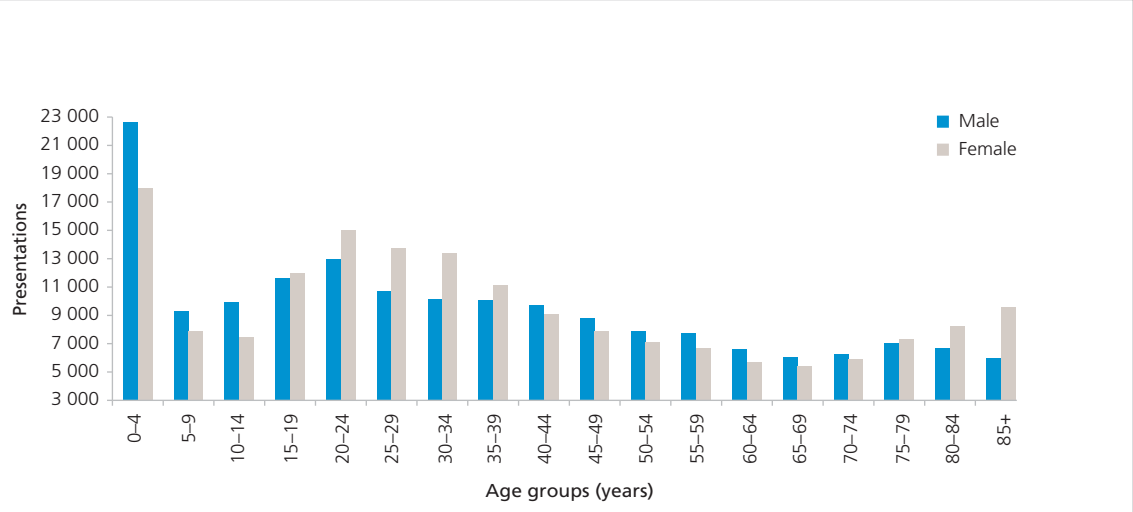
The level of activity in public hospital emergency departments is affected by such factors as access to and cost of general practitioners (where charges exceed Medicare rebates), the availability of emergency department services within the private sector, demand due to seasonality, and population growth and ageing.[2]

Metropolitan public hospital EDs experienced high growth during 2006–07, up 5.8 per cent compared with the previous financial year — a continuation of recent trends. There were 348 075 presentations of which 170 605 attendances were classified as resuscitation/emergency/urgent (49.0 per cent) and 177 470 were classified as being less urgent (51.0 per cent).

Country hospital ED presentations also increased during 2006–07, with 2.2 per cent (3 701) more activity than the previous year.

The gap in ED presentations between metropolitan and country hospitals continues to widen each year. Metropolitan public hospitals accounted for 65.7 per cent of total ED presentations in 2003–04, and country public hospitals the remaining 34.3 per cent, while in 2006–07, 67.1 per cent of presentations were at metropolitan public hospitals and 32.9 per cent at country public hospitals.

Graph 10.1.5 Metropolitan public hospital emergency department presentation, 2006–07



Note: Includes metropolitan public hospitals only.
Source: SA Health, Emergency Department Data Collection (EDDC).

Male ED presentations to metropolitan public hospitals outnumbered female presentations in the childhood years, but the opposite is true for the age groups between 20 and 39 years of age. Male presentations exceed female presentations between 40 and 74 years, but this status is reversed for the older age groups.

Nearly 30 (29.2) per cent of the total ED presentations to metropolitan public hospital EDs (excluding those who did not wait) in 2006–07 resulted in an admission to hospital. Most of the presentations that required hospital admission occurred among those aged 65 years or more (36.5 per cent). Only 15.9 per cent of child presentations (aged less than 15 years) in comparison required hospital admission.

10.1.3 Waiting times

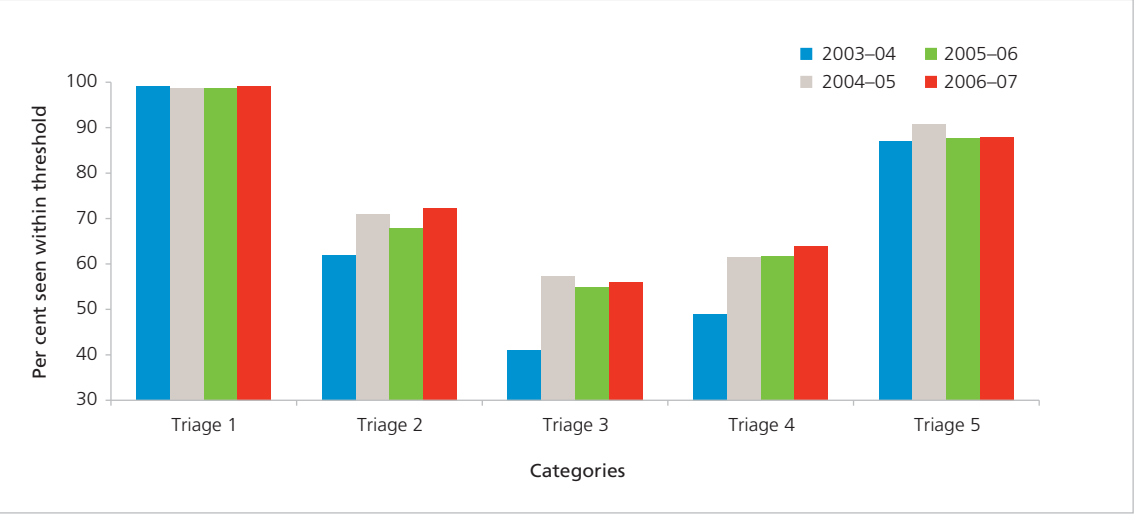
10.1.3.1 Emergency departments

Emergency department waiting times measure the time a patient has waited to be seen by a treating doctor or nurse. The proportion of patients seen within specified targets, based on the urgency of required treatment, is an indicator of access to public emergency department services. The effect of longer waiting times ranges from discomfort to poor health outcomes.

The maximum waiting times as specified by the Australasian College of Emergency Medicine are:

- Triage category 1: Immediate — resuscitation required
- Triage category 2: 10 minutes — emergency
- Triage category 3: 30 minutes — urgent
- Triage category 4: 60 minutes — semi-urgent
- Triage category 5: 120 minutes — non-urgent.

Graph 10.1.6 Metropolitan public hospital emergency department patients seen within threshold



Note: Includes metropolitan public hospitals only.
Source: SA Health, Emergency Department Data Collection (EDDC).

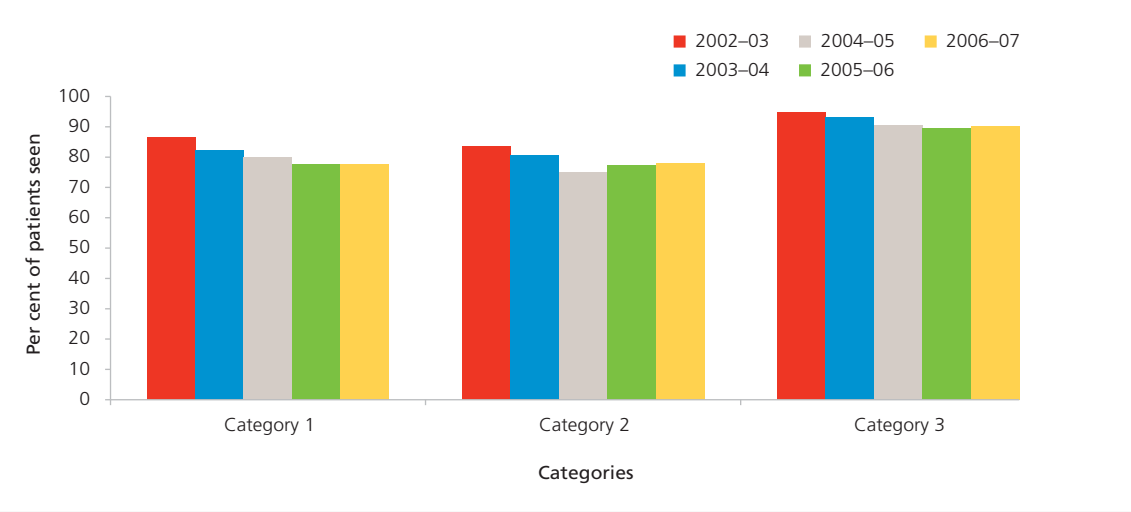
The proportion of patients seen within the thresholds in metropolitan public hospitals improved during 2006–07, despite the high growth in presentations; this is due to changes in processes and procedures within emergency departments and other areas within hospitals that have led to improved patient flows.

The total percentage of patients seen within the threshold among metropolitan public hospitals has increased overall from 50.0 per cent in 2003–04 to 63.7 per cent in 2006–07. Triage categories 2, 3 and 4 experienced marked improvements in the percentage of patients seen in time over this period.

10.1.3.2 Elective surgery

Elective surgery is surgery, not medical treatment, that a doctor considers necessary but which can be delayed for at least 24 hours. Patients requiring elective surgery are put on a waiting list, after assessment by a surgeon. The list is prioritised so that surgery is scheduled based on the degree of urgency for the procedure required.

Graph 10.1.7 Metropolitan public hospital elective surgery patients seen within the clinically appropriate time



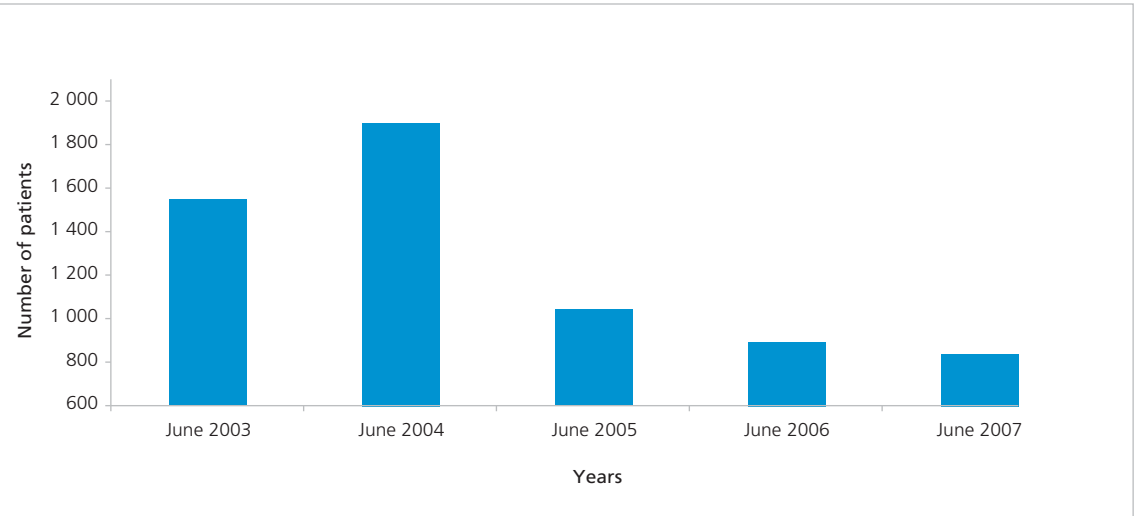
Note: Includes metropolitan public hospitals only.
Source: SA Health, Booking List Information System (BLIS).

Slightly under 40 000 (37 477) people received elective surgery procedures during 2006–07 in South Australia's metropolitan public hospitals (excluding Noarlunga Public Hospital), an increase of 3.7 per cent when compared to 2005–06. A significant amount of elective surgery also was provided in country hospitals.

Just over 80 (82.4) per cent of elective surgery patients during 2006–07 were seen within the clinically appropriate time. The breakdown by urgency category for South Australia's metropolitan public hospitals was:

- 77.5 per cent of category 1 patients (urgent surgery required within 30 days) were treated on time (the national average in 2005–06 being 81 per cent)
- 77.9 per cent of category 2 patients (semi-urgent surgery required within 90 days) were treated on time (the national average in 2005–06 being 74 per cent)
- 90.2 per cent of category 3 patients (non-urgent surgery required within 12 months) were treated on time (the national average in 2005–06 being 88 per cent).

Graph 10.1.8 Metropolitan public hospital patients waiting greater than 12 months for elective surgery, June 2003 to June 2007



Note: Includes metropolitan public hospitals in South Australia only.
Source: SA Health, Booking List Information System (BLIS).

The number of metropolitan public patients waiting longer than 12 months for elective surgery at June 2007 decreased by 6.3 per cent compared to June 2006, and 45.8 per cent compared with June 2003.

A number of factors affect the length of time a patient can wait for elective surgery. The number of emergency admissions often increases in winter, for example, causing a reduction in the capacity for the hospital to undertake elective surgery. Other factors influencing waiting times include the individual patient's assigned urgency category, the number of patients already on the waiting list, the type of treatment required and the availability of specialists.

The most common types of elective surgery performed during 2006–07 in metropolitan public hospitals were general (22.5 per cent), gynaecological (15.3 per cent), orthopaedic (11.7 per cent), ophthalmic (11.3 per cent), and otorhinolaryngeal (ear, nose and throat or ENT) (11.0 per cent).

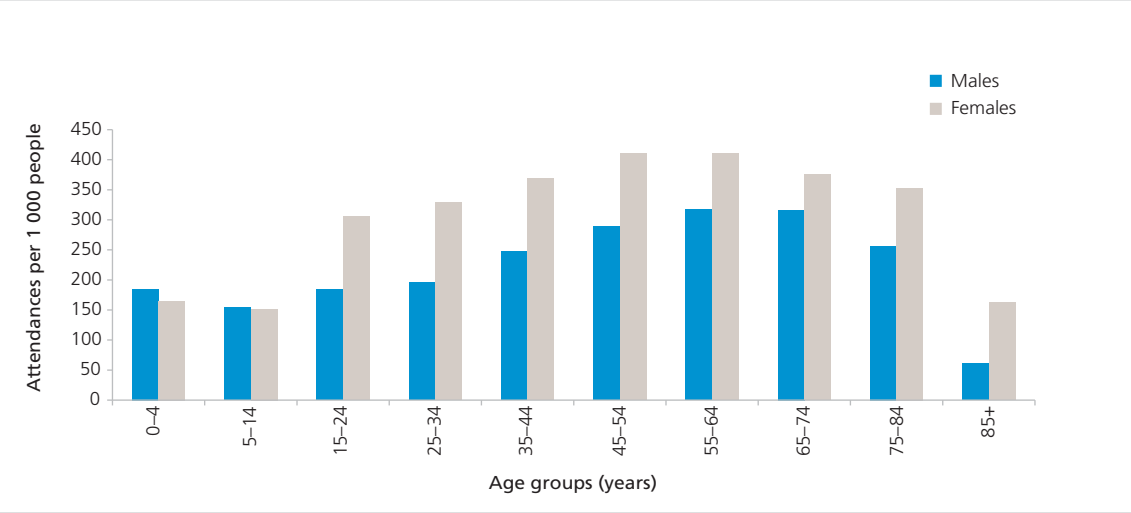
10.2 General practitioners

10.2.1 Number of GPs

General practitioners (GPs) usually are the first point of contact for people requiring healthcare. GPs provide primary healthcare in a variety of settings such as hospitals, and small and large practices, or are self-employed. GPs in the country may work in relatively isolated conditions. The total South Australian GP headcount during 2005–06 was 2 042. The number of full-time workload equivalent (FWE) GPs practising in the state was 1 404, an increase of 2.9 per cent from the previous year[6]; this equates to nearly one FWE GP per 1 000 population.

Younger GPs are inclined to work fewer hours than older GPs. Additional GPs are required to provide similar services, therefore, as older GPs retire. The number of women entering the medical workforce has increased, although the majority works part-time.[6]

Graph 10.2.1 GP attendances by age and gender, South Australia, 2006–07



Source: Medicare Australia.

There were 8.306 million general practitioner attendances (including practice nurses) within South Australia during 2006–07; this was an increase of 0.9 per cent compared to the previous year, and an increase of 7.8 per cent since 2002–03.[7]

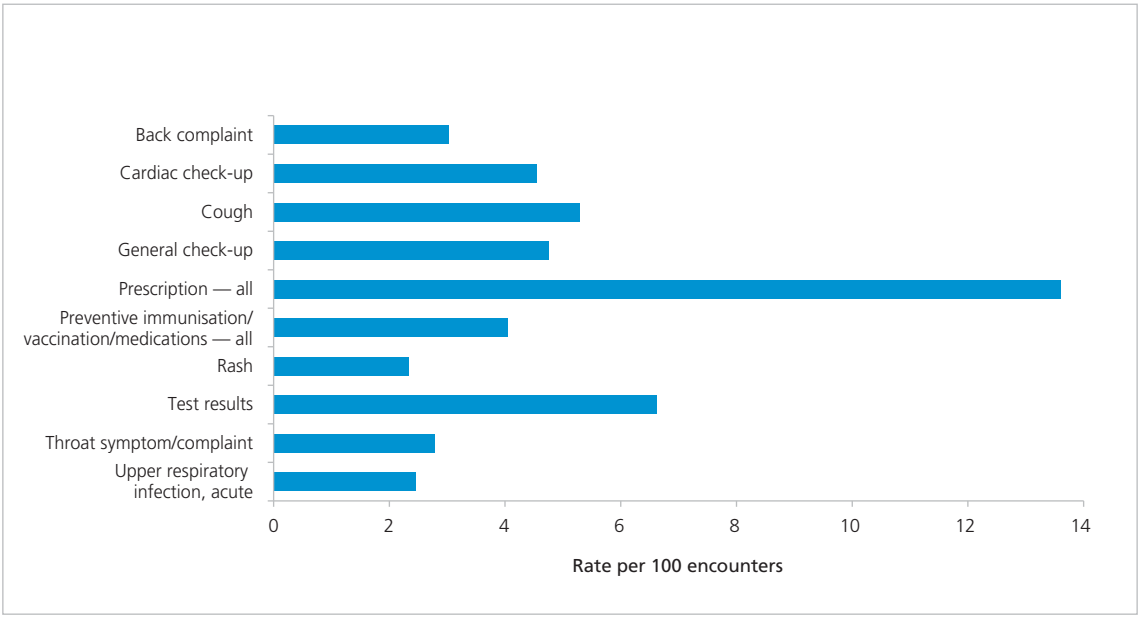
The number of general practice items (including practice nurse items) claimed through Medicare per 1 000 weighted population was 4 753 during 2006–07, slightly less than the national value of 4 920, and marginally less than the previous year (4 784).[8]

Females used GP services more than males, accounting for 57.9 per cent of services during 2006–07. There were 3.0 services per head of population for females and 2.2 per head for males. Females also were responsible for more services per patient in each age group, from 15–24 years onwards, with males accounting for more services only in the 0–14 year age group. People aged 45–74 years were the heaviest users of GP services during 2006–07, accounting for just over 40 per cent of total services. Females aged 15–34 years used GP services nearly 67 per cent more often than males in the same age group.[7]

10.2.2 Reasons for encounter

The *Bettering the Evaluation and Care of Health* (BEACH) survey of general practice activity collects information on the problems managed by GPs for patients in South Australia.

Graph 10.2.2 Most frequent reasons for encounter, South Australia, 2005–2007



Source: Table 2.2, Top 60 reasons for encounters, BEACH Survey report, Australian GP Statistics and Classification Centre, University of Sydney.

Reasons for encounter (RFE) reflect the patient's expressed demand for care as perceived and recorded by the GP.[1] The most frequent reason for encounter by South Australians in 2005–2007 was for prescriptions (13.6 per 100 encounters), followed by test results (6.6 per 100) and for cough (5.3 per 100).

The most common problems that were managed by GPs during 2005–2007 were hypertension (8.7 per 100 encounters), upper respiratory infection (5.1 per 100) and preventative immunisation (4.4 per 100).

Table 10.2.1 Top 10 problems managed by GPs, South Australia, 2005–2007

Problem	Rate per 100 encounters
Hypertension	8.7
Acute upper respiratory tract infection	5.1
Preventive immunisations/vaccines/medications-all	4.4
Depression	4.3
Diabetes (all)	3.7
Lipid disorders	3.6
General check-up	3.4
Back complaint	2.8
Osteoarthritis	2.6
Oesophagus disease	2.4

Source: Table 3.2, Top 60 problems managed, BEACH Survey report, Australian GP Statistics and Classification Centre, University of Sydney.

The most common referrals to specialists by GPs over the period 2005–2007 (excluding continuation referrals) were to surgeons (including orthopaedic, plastic, vascular and neurosurgery) with 2.1 per 100 encounters, ophthalmologists (0.8 per 100), and gastroenterologists (0.5 per 100).[1]

The most common GP referrals to allied health professionals over the period 2005–2007 were to physiotherapists (1.4 per 100 encounters), podiatrists/chiropodists (0.3 per 100), and psychologists (0.3 per 100).[1]

10.2.3 GP prescribing patterns

The BEACH survey of general practice activity also collects information on drugs prescribed by GPs. Medications were prescribed in 2005–2007 at a rate of 78 per 100 encounters; of the 10 most frequent prescribed medications, four were from the antibiotic group, and two from the painkillers group.

The most common prescribed medication was Amoxycillin, accounting for 3.5 per cent of all prescriptions, followed by Paracetamol (3.1 per cent), Paracetamol/Codeine (2.8 per cent), Cephalexin (2.5 per cent), and Amoxycillin with potassium clavulanate (2.2 per cent).

Table 10.2.2 Medications most frequently prescribed by GPs, South Australia, 2005–2007

Generic name	Action	Proportion of prescriptions (per cent)	Prescriptions per 100 encounters
Amoxycillin	Antibiotic	3.5	2.7
Paracetamol	Painkiller	3.1	2.4
Paracetamol/Codeine	Painkiller	2.8	2.2
Cephalexin	Antibiotic	2.5	2.0
Amoxycillin/potassium clavulanate	Antibiotic	2.2	1.7
Salbutamol	Open airways	2.0	1.6
Atorvastatin	Lowers blood cholesterol	2.0	1.5
Diazepam	Reduces anxiety	1.9	1.5
Roxithromycin	Antibiotic	1.8	1.4
Temazepam	Sleeping tablet	1.7	1.3

Note: These data refer to prescriptions written by GPs. Actual prescriptions filled per 100 encounters may be higher than the numbers in this table because many prescriptions have 'repeats'.
Source: Table 4.3 Top 30 medications prescribed—GP-Patient encounters in SA April 2005-March 2007, BEACH Survey report, Australian GP Statistics and Classification Centre, University of Sydney.

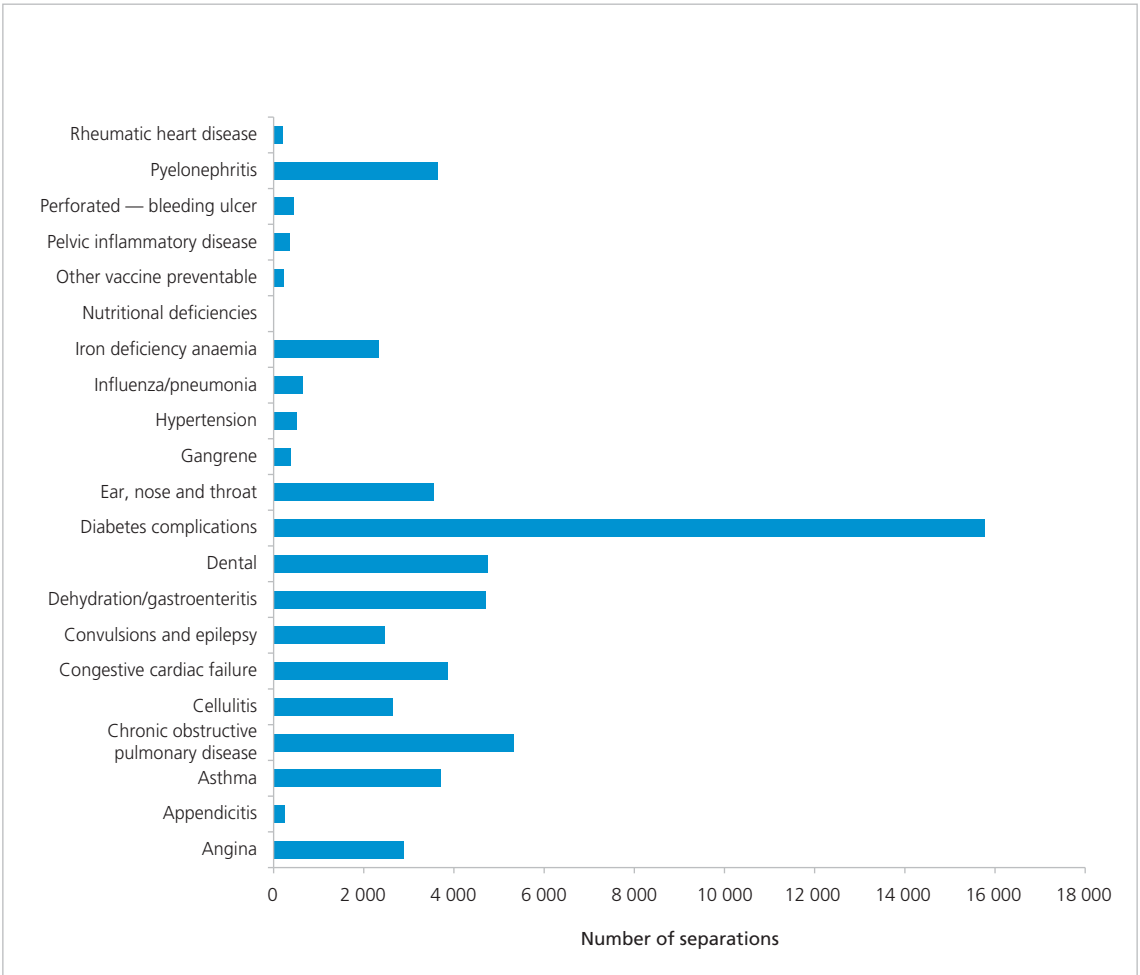
10.3 Potentially preventable hospitalisations

There are a number of conditions for which hospital separations are seen to be potentially preventable if timely and adequate non-hospital care is provided. The list of potentially preventable hospital separations includes:

- vaccine-preventable conditions including influenza, pneumonia, and other conditions such as hepatitis B, diphtheria, tetanus, measles, mumps, rubella and polio
- potentially preventable acute conditions including appendicitis, convulsions and epilepsy, dehydration/ gastroenteritis; gangrene; perforated ulcer; cellulitis, pyelonephritis; pelvic inflammatory disease; ear, nose and throat infections; and dental conditions
- potentially preventable chronic conditions including diabetes complications, asthma, angina, hypertension, iron deficiency anaemia, nutritional deficiencies, congestive heart failure and chronic obstructive pulmonary disease.

The list above is not comprehensive. There are other conditions that may be preventable, such as coronary heart disease, substance abuse, lung cancer, and injury. The list above includes conditions for which there is evidence that prevention and management methods, lifestyle changes and specific non-hospital care can reduce hospitalisation rates.

Graph 10.3.1 Potentially preventable hospitalisations by condition, South Australia, 2005–06



Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

Separations for potentially preventable hospitalisations are used most often as an indication of appropriate and adequate non-hospital care. An increase in separations, however, also may be due to increased prevalence of the condition in the community, leading to increased hospital use, and improvements in the identification of conditions in data collections.

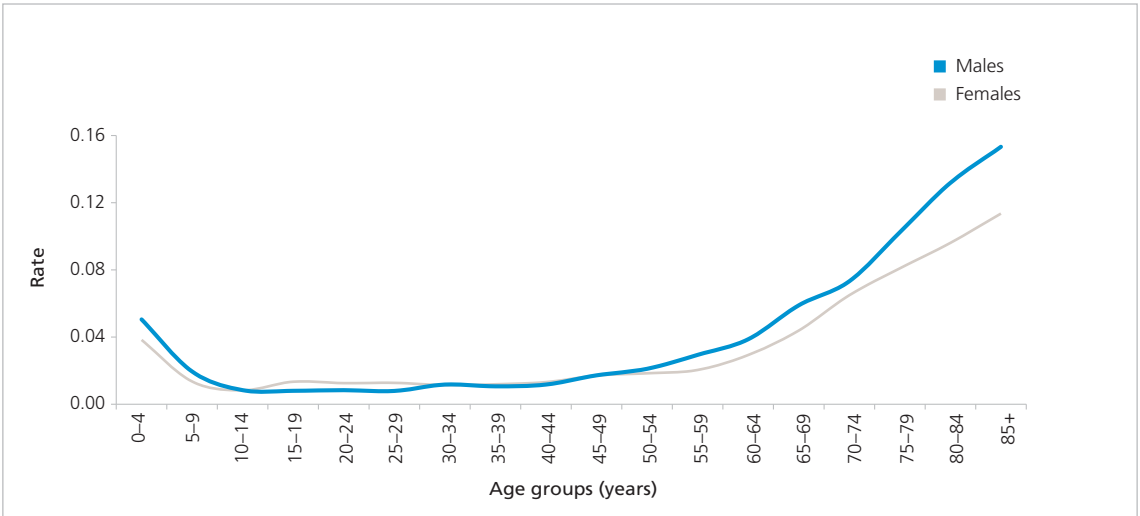
Nearly 9.3 per cent of total hospital separations (both public and private) in South Australia during 2005–06 were potentially preventable.

The number of potentially preventable hospitalisations increased 6.7 per cent between 2004–05 (52 092) and 2005–06 (55 562). The number of potentially preventable hospitalisations as a proportion of total separations was 9.3 per cent during 2005–06, an increase of 0.2 percentage points on the previous year.

Chronic conditions were the most common type of potentially preventable hospitalisation during 2005–06, comprising 57.1 per cent overall. Acute conditions accounted for 40.9 per cent, while vaccine-preventable conditions were 2.0 per cent.

The largest single cause of preventable hospital separations was diabetes complications (25.2 per cent); next was chronic obstructive pulmonary disease (10.0 per cent), followed by dental conditions (8.0 per cent), and dehydration and gastroenteritis (8.0 per cent). Influenza and pneumonia accounted for 1.6 per cent of potentially preventable hospitalisations, both of which can be prevented by vaccination.

Graph 10.3.2 Potentially preventable hospitalisation rates, by age and gender, public hospitals, South Australia, 2005–06



Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

Males had higher hospitalisation rates for potentially preventable admissions than did females during 2005–06 in the older age groups. The rates of potentially preventable hospitalisations for all people aged 60+ years was nearly five times higher than for the rest of the South Australian population. The rate of all the potentially preventable hospitalisations in South Australia was 23.1 per cent higher for males than females.

The patterns of preventable hospital separations by socioeconomic status in South Australia were similar to Australian patterns.[5] The separation rate during 2005–06 for the most disadvantaged quintile was 63.1 per cent higher than for the least disadvantaged quintile; this is attributed mainly to chronic conditions, which were 120.6 per cent higher than for the least disadvantaged quintile.

10.4 Home and nursing services

10.4.1 Domiciliary Care SA

Domiciliary Care SA was established on 1 July 2007 with the transfer of funding responsibility from the Department of Health to the Department for Families and Communities; the service existed before this as Metropolitan Domiciliary Care (MDC), from 2002 to 30 June 2007. MDC was the state-based provider of government-funded domiciliary care services in metropolitan Adelaide.

Domiciliary Care SA provides the same service as the former MDC: assisting people with reduced ability to care for themselves while living in their own homes.

The organisation's major services include personal care, domestic assistance, case management, respite care, social support and allied health services. A range of professional groups provide paramedical assistance, occupational therapy, physiotherapy, social work, speech pathology, podiatry and dietetics.

Domiciliary Care SA also manages three business units:

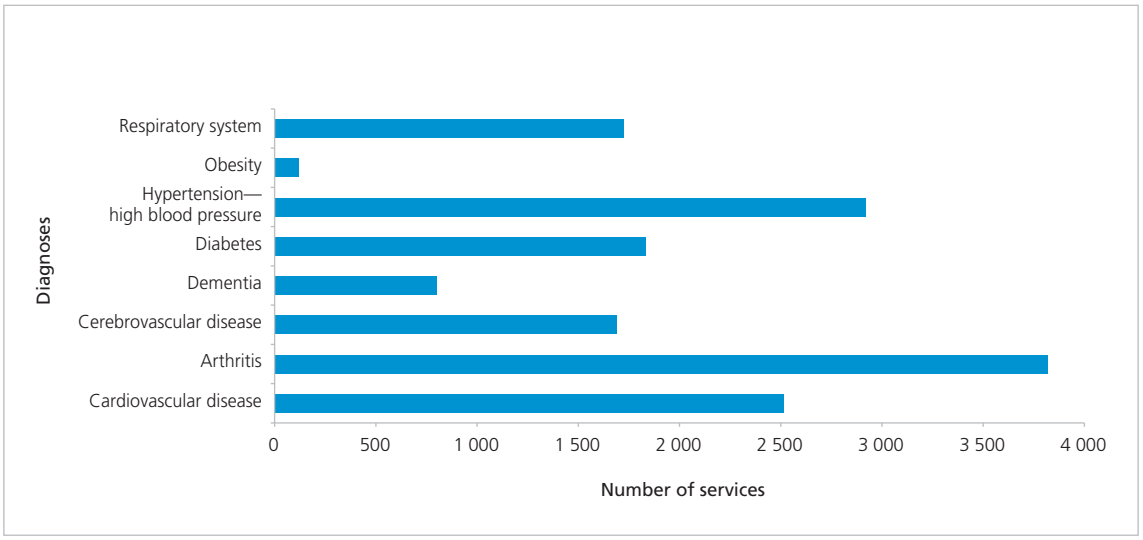
- Domiciliary Equipment Service (DES), which provides equipment, independent living aids and home modifications; on average, there are 35 000 equipment items rented per month
- Manual Handling Australia, which provides training and consultancy services upon request, both to Domiciliary Care SA and to external agencies
- Therapy Solutions, which provides allied health services and expertise to Domiciliary Care SA and to other agencies.

Domiciliary Care SA also manages the Adelaide Aged Care Assessment Team (AACAT), which conducts assessments under the Commonwealth Aged Care Assessment Program, as well as offering advice to older people who experience difficulty living at home. AACAT completed 12 044 new client assessments during 2006–07.

Domiciliary Care SA primarily assists people aged 65+ years, with over 90 per cent of clients in this age group. Younger people with a disability also may qualify for support in some circumstances.

The largest proportion of clients is aged between 76–85 years (42 per cent), with the next largest group of clients aged 85+ years (25 per cent). Services were provided to 12 036 clients across eight client service areas in Adelaide during 2006–07. The most common service was for arthritis (3 820), followed by hypertension (high blood pressure) (2 922) and cardiovascular disease (2 517).

Graph 10.4.1 Metropolitan services by clinical diagnosis, 2006–07



Source: Department for Families and Communities, Client Management Engine.

A significant proportion of Domiciliary Care SA clients come from culturally and linguistically diverse backgrounds (CALD) and speak English as a second language. Thirty per cent of clients currently report that they were born in a non-English-speaking country and 15 per cent report that English is not the primary language they speak at home.

There has been a significant decrease over the past year in the total number of clients waiting for services. The total waiting list has fallen by 20 per cent, with a 64 per cent decrease in the number of Priority 1 clients waiting for care (those assessed as having the most urgent and complex care needs). These reductions have been achieved through innovations to entry assessment, strategic waiting list management, and improvements to services and intake processes.

Domiciliary Care SA Palliative Care services are managed by two regional teams based in the North and South of Adelaide, in partnership with regional palliative care services and the Royal District Nursing Services of SA Inc (RDNS). The palliative care teams provide respite, social support, domestic assistance, equipment, home modifications and linen service as part of a joint program with other service providers.

The Palliative Care Program was used by 1 930 clients during 2006–07. Around 500 clients receive services from this program at any given time. The former MDC had achieved a rapid response rate for all palliative care referrals as of 30 June 2007, with 90 per cent of new clients seen within one business day of their initial referral.

10.4.2 Country Health SA Domiciliary Care

In country South Australia, domiciliary care services are provided predominantly by public sector incorporated health units, as well as by non-government service providers in some locations. Services are provided to hundreds of communities from 95 sites based in 77 towns.

Services encompass a range of coordinated social, personal care, nursing, home support and allied health services provided in support of independent, community-based living.

Domiciliary care supports the management of chronic disease, and reduces the risk of injury or deteriorating health, thus reducing the frequency and length of hospital admissions by focusing on health promotion, early intervention and maintaining independence. Domiciliary care also minimises the requirement for residential aged care by providing a sustainable alternative in the client's own home.

Table 10.4.1 Country Health SA Domiciliary Care Services, 2006

Domiciliary care services	Number of services	Service hours
Aged care assessment team	20 830	15 047
Counselling/support, information and advocacy	9 053	4 458
Case management	2 568	10 500
Case planning/review, and coordination	61 623	34 764
Assessment	16 107	12 626
Personal care	127 996	81 591
Domestic assistance	119 137	143 844
Respite care	15 351	39 906
Social support	49 355	46 102
Home modification	1 877	2 648
Allied health	73 489	50 160
Centre-based day care	78 558	321 392
Formal linen service	2 741	118
Home maintenance	5 877	7 299
Meals (home)	69 339	13 888
Meals (centre)	60 774	2 553
Other food sources (home)	7 604	1 669
Nursing care	81 039	43 360
Home-based support services for adults following an acute admission	5 209	3 673
Total	**808 527**	**835 598**

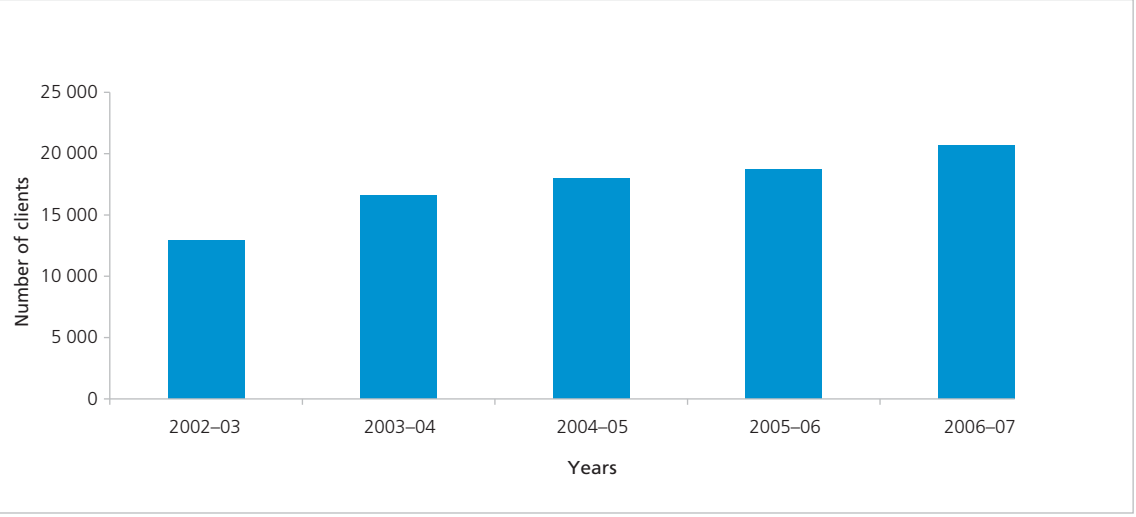
Source: Department for Families and Communities, Country Consolidated Client Management Engine.

Nearly 809 000 services were provided by Country Health SA during the 2006 calendar year. The predominant services provided were personal care (15.8 per cent of services), domestic assistance (14.7 per cent) and nursing care (10.0 per cent). Nearly 836 000 hours of service time were provided over this 12-month period. The largest proportion of service hours were dedicated to the provision of centre-based care (38.5 per cent of total service hours) and domestic assistance (17.2 per cent).

10.4.3 Royal District Nursing Service of SA Inc

The Royal District Nursing Service of SA Inc (RDNS) is a non-government organisation that provides 24 hour, 7-day home and community nursing services across the Adelaide metropolitan area. Services to clients include general and specialised nursing, with the dual objectives of improving their health status while also enabling them to enjoy the benefits of remaining at home.

Graph 10.4.2 RDNS clients, South Australia, from 2002–03 to 2006–07 financial years



Source: Royal District Nursing Services (RDNS).

Specialist clinical services include wound and diabetes management, palliative care, continence promotion and health care for people with disabilities, HIV-AIDS, dementia and mental health. RDNS staff also undertake procedures that once were performed only in hospitals or medical clinics; these include blood transfusions and ultrasound investigations. This service gives people with serious illnesses more choice to remain in their own home.

The RDNS had 20 648 clients within metropolitan Adelaide during 2006–07. RDNS nurses made 527 285 nursing and support visits (an increase of 4 per cent from 2005–06) and conducted 225 085 other client contacts (an increase of 3 per cent from 2005–06).

The RDNS also carried out 6 528 hospital referrals during 2006–07, an increase of 3.9 per cent over the previous year.

10.5 Hospital avoidance program

Metro Home Link provides hospital avoidance and discharge packages to patients who reside in metropolitan Adelaide and/or who have been admitted to a metropolitan hospital. The program is aimed at helping people to avoid a presentation or admission to hospital, or to facilitate an early discharge. Referrals to the service can be made by hospital staff, general practitioners or residential care facilities.

Examples of packages of care provided through Metro Home Link include personal care, assistance with the activities of daily living, technical nursing and allied health care. Services are short-term in nature. The majority of packages do not exceed seven days.

Metro Home Link provided a total of 14 706 care packages to 12 857 patients during 2006–07. A total of 14 124 care packages was provided to 11 400 patients in the period 2005–06.

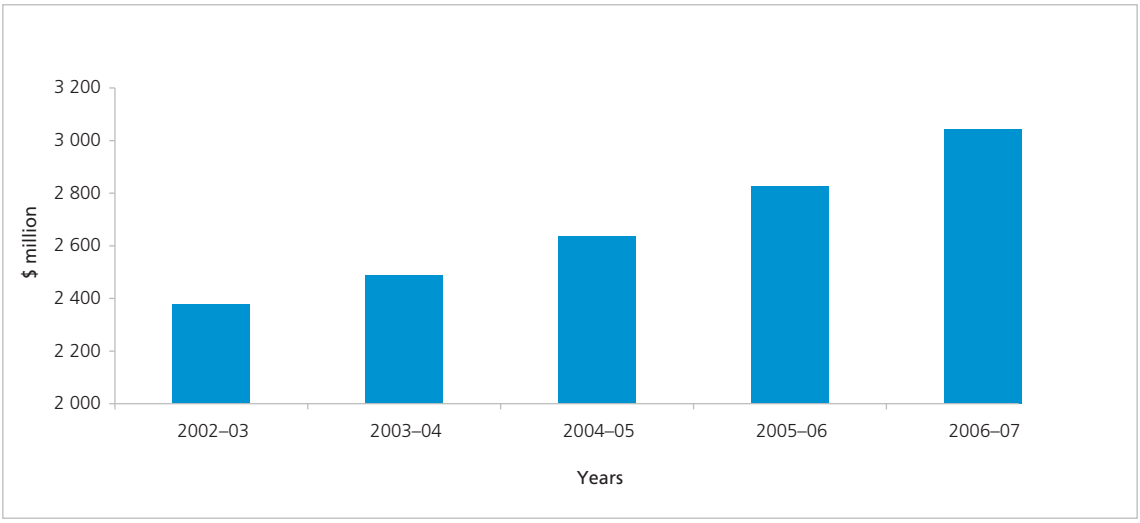
Nearly 8 000 (7 872) of the total packages provided in 2006–07 were for hospital avoidance and 6 834 were hospital-supported discharge packages; 7 655 avoidance packages and 6 469 hospital-supported discharge packages were provided in the previous financial year.

10.6 Finance

10.6.1 State Government spending

The South Australian government has spent—cumulatively, in real terms—$13.4 billion on Health Regions and other health entities from 2002–2003 to 2006–2007; this includes $3.043 billion during 2006–2007. These amounts exclude the Central Office of SA Health and SA Ambulance service expenditure.

Graph 10.6.1 State Government spending, health regions and services, financial years from 2002–02 to 2006–07



Source: SA Health, Corporate Finance calculation as per October 2007.

10.6.2 State spending on mental health services

South Australian Government recurrent expenditure on mental health has increased considerably since 2002–03. The South Australian Government has committed an additional $83 million from 2002–03 to 2006–07 on a range of mental health initiatives. A further $155.4 million has been committed over the next four years on a range of initiatives, including additional community-based support for non-government organisations.

10.6.3 Per capita spending on health

Per capita spending on health is based on total government and non-government expenditure. Information has been provided for the previous years for comparative purposes. Expenditure is specified below in terms of current and constant prices. A constant price refers to expenditure that has been adjusted to remove the effects of inflation; hence, expenditure over different years can be compared. The term 'current price' refers to expenditure for a particular year (unadjusted for inflation).[4]

The average recurrent health expenditure per person, based on constant prices, for South Australia was $3 912 in 2005–06 compared with $3 864 in 2004–05 and $3 731 in 2003–04; this represents an increase of 4.9 per cent over that two-year period. Per capita spending for South Australia in 2005–06 was 4.1 per cent above the national average.[4]

Average recurrent health expenditure per person, based on current prices, for South Australia (all sources of funds) was $4 070 in 2005–06 compared with $3 864 in 2004–05 and $3 582 in 2003–04. South Australian per capita expenditure in 2005–06 was 13.6 per cent higher than in 2003–04, and 2.6 per cent above the national average.[4]

10.6.4 Health spending as a proportion of Gross Domestic Product

Australia's health expenditure totalled $87 billion during the 2005–06 financial year, representing 9.0 per cent of Gross Domestic Product (GDP).[4]

The Organisation for Economic Co-Operation and Development (OECD) median health-to-GDP ratio was 7.5 per cent in 1995, compared with 8.1 per cent in 2000 and 9.0 per cent in 2005; Australia's average was slightly lower in 1995 (7.4 per cent), higher in 2000 (8.3 per cent) and lower again in 2005 (8.8 per cent).[4]

The biggest spender on health care in the OECD countries during 2005 was the United States of America, spending 15.3 per cent of GDP. The average expenditure per person was more than double the amount for Australia ($8 833 per person compared with $4 121 for Australia).

Australia in 2005 had a health-to-GDP ratio similar to that of Italy and New Zealand, while it was higher than the United Kingdom and much lower than the United States of America, as shown in the table below.

Table 10.6.1 Health expenditure as a proportion of GDP and per person, top 20 OECD countries, 1995–2005

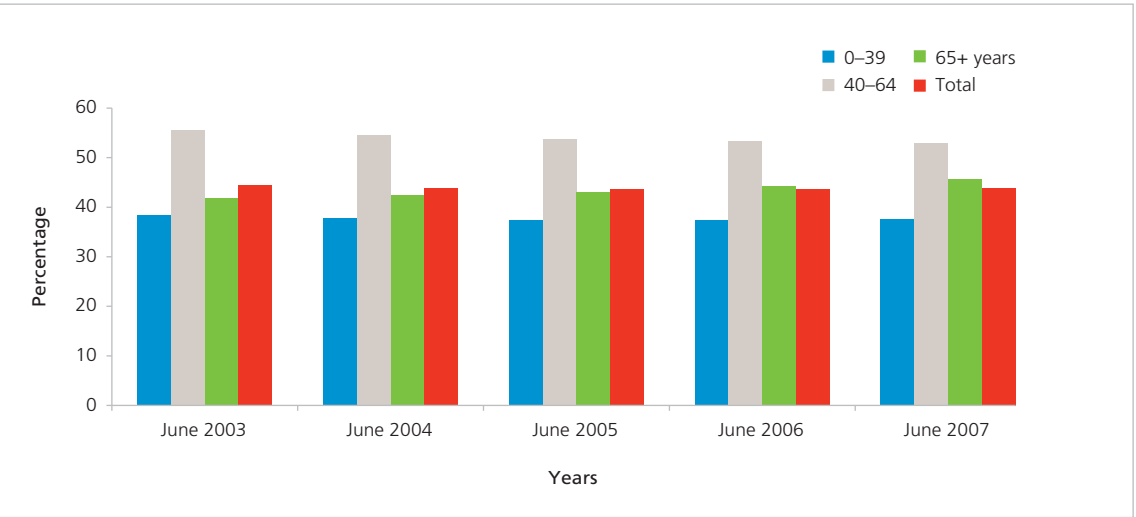
	1995		2000		2005	
Country	Health-to-GDP ration (per cent)	Per person (A$)	Health-to-GDP ration (per cent)	Per person (A$)	Health-to-GDP ration (per cent)	Per person (A$)
United States of America	13.3	4 826	13.2	5 985	15.3	8 833
Switzerland	9.7	3 394	10.4	4 167	11.6	5 764
France	9.9	2 726	9.6	3 258	11.1	4 656
Germany	10.1	2 937	10.3	3 451	10.7	4 536
Belgium	8.2	2 416	8.6	3 014	10.3	4 677
Austria	9.8	2 970	10.0	3 701	10.2	4 856
Portugal	7.8	1 447	8.8	2 129	10.2	2 806
Greece	7.5	1 650	9.3	2 555	10.1	4 114
Canada	9.0	2 715	8.8	3 287	9.8	4 590
Iceland	8.2	2 446	9.3	3 533	9.5	4 751
Denmark	8.1	2 433	8.3	3 119	9.1	4 289
Norway	7.9	2 497	8.4	4 037	9.1	6 022
Sweden	8.1	2 288	8.4	2 976	9.1	4 027
New Zealand	7.2	1 642	7.7	2 103	9.0	3 233
Italy	7.3	2 062	8.1	2 722	8.9	3 494
Australia [b]	7.4	2 111	8.3	2 956	8.8	4 121
United Kingdom	7.0	1 827	7.3	2 435	8.3	3 759
Spain	7.4	1 575	7.2	1 991	8.2	3 112
Turkey	3.4	247	6.6	591	7.6	809
Finland	7.5	1 886	6.6	2 249	7.5	3 217

Notes: (a) Expenditures converted to Australian dollar values using GDP purchasing power parities.
(b) Expenditure based on the OECD System of Health Accounts (SHA) framework.
Source: Health Expenditure Australia, 2005–06.

10.6.5 Private health insurance

Just under 44 (43.9) per cent of South Australians had private health insurance (PHI) hospital cover as at June 2007; this compares to 44.5 per cent of South Australians at June 2003. The percentage of people with PHI has stayed reasonably steady during this period, at around 44 per cent.

Graph 10.6.2 People with private health insurance as a percentage of their age cohort, South Australia



Source: Private Health Insurance Administration Council (PHIAC).

The percentage of South Australians with PHI aged 0–39 years has been sitting at just under 38 percent since June 2003.

The percentage of people with PHI has slowly decreased for the 40-64 age cohort from 55.5 per cent in June 2003 to 53.0 per cent in June 2007; in contrast, the percentage of people 65+ years of age has steadily increased from 41.9 per cent in June 2003, to 45.7 per cent in June 2007.

10.7 Services and initiatives

South Australia's Health Care Plan has been developed by the South Australian Government to meet future challenges of health service delivery through health system reform and represents the most significant single investment in health care in South Australia's history. The *SA Health Care Plan* will reform the state's health system so that it meets the health challenges of an ageing population, increasing incidence of chronic diseases, international workforce shortages and ageing infrastructure. These changes will ensure that South Australians have access to the best available health care in hospitals and health care centres, and through GPs and other health professionals.

The new health system outlined in the *SA Health Care Plan* aims to achieve the best balance between enhancing hospital services, reforming mental health care and strengthening primary health care services. Health system reform, and the decisions about health services roles and functions, is guided by a range of principles that enable ongoing provision of caring, complete, safe, effective and efficient services within the new SA Health environment. Key reform principles incorporated include taking a population approach in planning the level and location of services, achieving an appropriate balance of in-hospital and out-of-hospital health services, consolidating clinical expertise, optimising access to care where needed, and ensuring affordability and long-term financial sustainability.

The *SA Health Care Plan* will mean better coordinated hospital services and a responsive health workforce for the future. The 'spine' of tertiary hospitals will provide a full range of complex medical, surgical and diagnostic services and specialist mental health care, guided by the health reform principles, and consolidating highly specialised clinical expertise and complex services in a smaller number of locations. The *SA Health Care Plan* describes the new Marjorie Jackson-Nelson Hospital, which is due for completion in 2016, and is planned both to replace the ageing infrastructure at the Royal Adelaide Hospital, and to accommodate some of The Queen Elizabeth Hospital's (TQEH) more complex services.

The *SA Health Care Plan* describes how specialist hospital care will be provided *now* through this central 'spine' of more complex hospital services comprising the Lyell McEwin Hospital in the north, the Royal Adelaide Hospital and the Women's and Children's Hospital (WCH) in the centre, and Flinders Medical Centre in the South, and the new Marjorie Jackson-Nelson Hospital into the future. The other metropolitan hospitals, as part of the *Plan*, will be reoriented to provide more general hospital services by increasing routine elective surgery, and providing new chronic disease, rehabilitation, drug and alcohol, and palliative care services that are delivered in partnership with general practice.

Country SA services will be informed by the *SA Country Health Care Plan* currently being developed in partnership with health units and health professions. Enhancing hospital care in country SA will involve expanding existing services at four hospitals located in Berri, Mount Gambier, Port Lincoln and Whyalla; so that they can provide a more comprehensive range of services, reducing the need for country residents to travel to metropolitan Adelaide.

Strengthening primary health care will involve new models of early intervention provided through newly established GP Plus health care centres. GP Plus centres will build on the existing infrastructure of community health centres and will be established on the basis of approximately one centre per 100 000 population, which means there will be about 10 centres in the Adelaide metropolitan area. Centres are being planned for Elizabeth and Marion with centres at Aldinga and Woodville already operating. GP Plus health care centres also are planned for Country SA, with one centre planned for Port Pirie; and the redevelopment of the Ceduna Health Service to incorporate a GP Plus Health Care Service. These innovative models of primary care — designed to help prevent or delay onset of ill health — will be focused on chronic diseases, mental health care, rehabilitation, drug and alcohol, and palliative care services. This construct recognises the available future workforce across the continuum of care, ensuring timely access to services where and when needed, while maintaining quality and safety standards.

10.8 Notes

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11 Safety and Quality

In this chapter

Summary

- The introduction of the BloodSafe™ pilot program and its interventions reduced the rate of red cell transfusions outside the national guidelines from 18 per cent (2002) to 4 per cent and then a further 2 per cent after the pilot had been converted into an ongoing program across eight metropolitan hospitals in 2005.
- Estimates suggest that each year in Australia in excess of 140 000 hospital admissions are associated with medicine related problems, accounting for 10–20 per cent of the incidents that are reported in hospitals. Importantly, a large proportion of these incidents—up to 50 per cent—are preventable. Medication errors in the public hospital system throughout Australia are estimated to cost $380 million per annum.
- Implementation of the National Inpatient Medication Chart in all South Australian public hospitals was completed in March 2007, allowing accurate data collection and the use of a standard medication chart across all health sites.
- SA Health is participating in a pharmaceutical reform process that aims to increase equity, access and safety of medication use. One of the first steps, the implementation of national medication management guidelines, began in 2007 with the employment of additional pharmacist positions across the metropolitan hospitals. Changes associated with the guidelines build in safeguards to medication management practices in public hospitals.
- The incidence of health care related infection and appropriate antibiotic use in South Australia's public and private metropolitan hospitals has been monitored since 2001. An improvement has been seen during this time in the overall rate of bloodstream infection from 6.5 per 10 000 bed-days in 2002 to 5.9 per 10 000 bed-days in 2006. The rate of infection due to MRSA (antibiotic-resistant golden staph) has been halved over the same period of time, from 3.5 to 1.8 per 10,000 bed-days.
- A Pressure Ulcer Prevention Project was conducted in 2005 involving 13 health services across the state. The key recommendation from that project was to conduct a statewide survey on the prevalence of pressure ulcers. The recommended survey, funded by SA Health, has been conducted and demonstrated a strong commitment and collaboration across private, community, public and aged care health services in improving the quality of health care. The survey results provide a foundation for targeting specific actions for reducing the prevalence of pressure ulcers

- The Patient Evaluation of Health Services (PEHS) Program indicated consumers had an overall satisfaction rate of 87.2 per cent in 2005.
- SA Health is committed to learning from adverse events that occur in the health system. The first national sentinel event report was released in 2007 by the Australian Institute of Health and Welfare (AIHW) based on all states (including South Australia) and territories contributing their sentinel event information to a national report. Analysis of adverse events and reporting of improvements made as a result of recommendations is published annually in the *South Australian Patient Safety Report*.
- A recent report by AIHW estimated that falls and related injuries have an annual cost across Australia in excess of $566m.[4] Falls injuries are chiefly a problem associated with older people, and occur at high rates in acute, residential and community settings. Risks for falling and for injury vary across settings. The draft falls prevention strategy will address data needs and implementation of initiatives to reduce the impact of falls.

Introduction

The delivery of safe, quality health care is fundamental in the strategic directions of SA Health. A clear plan and well defined clinical governance for the safe provision of health care is essential. *The Patient Safety Framework 2002–2006* provided the structure for the coordinated implementation of a statewide safety system. This *Framework* supported effective implementation of:

- integrated patient information systems
- centralised electronic incident reporting
- standardised approach to investigating and analysing adverse events
- supported culture change
- redesign of systems through continuous quality improvement.

The *South Australian Safety and Quality Framework & Strategy 2007–2011* was launched in 2007, following broad consultation across the state, and investigation of the latest national and international safety and quality research and initiatives. This new strategy is centred around consumer and community needs and involves all sectors of health care working collaboratively, including primary, public, private, community and aged care. The *Framework and Strategy* guides the improvement of safety and quality of health care in South Australia with initiatives across the continuum of care.

The *Framework and Strategy* comprises five key interconnected and interdependent action areas:

- 1. Clinical governance
  Rigorous clinical governance will support safety and quality improvement and enable all stakeholders to contribute effectively to safe and high quality care and services.
- 2. Consumer and community participation
  Consumers and the community partner with health services to drive safety and quality improvement.
- 3. Workforce
  The health workforce is equipped and supported to meet health consumer and organisation safety and quality needs.
- 4. Knowledge, information management and technology
  Knowledge, information management and technology are used effectively to improve safety and quality of care and services.
- 5. Prioritising and targeting areas of risk and opportunities for improvement
  The clinical priorities are falls prevention, infection prevention, the safe use of medications, safe use of blood products and pressure area prevention.

Improvements in safety and quality

SA Health safety and quality programs are an integral part of a continuous cycle of improvement. Examples of project areas include:

- BloodSafe™
- medication safety
- infection control
- pressure ulcer prevention and management
- patient evaluation of health services
- incident management
- Clinical Practice Improvement
- falls prevention.

11.1 Blood safety

A statewide collaborative called BloodSafe™ was formed in 2002 between SA Health, the Australian Red Cross Blood Service, and South Australian hospitals and their transfusion providers. BloodSafe™ was established to coordinate a safety and quality framework for all steps of the blood transfusion process to improve patient outcomes and ensure sufficiency of blood supply. The program ran as a pilot for two years before becoming an ongoing health funded program with a multidisciplinary team of transfusion nurse consultants, medical scientists and haematologists.

The National Health and Medical Research Council and the Australasian Society of Blood Transfusion released clinical practice guidelines on the use of blood components in 2001. Audits of red cell transfusions in other states indicated that a third of red cell transfusions were inappropriate. BloodSafe™ audits at the start of the pilot in 2002 found that 18 per cent of red cell transfusions in stable patients were outside the guidelines. This rate was reduced to 4 per cent with the initial introduction of BloodSafe™ program interventions. This rate had reduced further to 2 per cent in 2005, after the pilot was converted into an ongoing program across eight metropolitan hospitals.

There has been growing recognition in developed countries in recent years that the current serious hazards of transfusion are not so much the viral disease risks but are related more to the administration of blood or the wrong blood being given to a patient, which can have fatal consequences. BloodSafe™ has worked hard to educate staff and consumers, and to redesign systems in hospitals to help prevent these events. BloodSafe™ has focused in particular on the following areas to improve patient outcomes:

- decision to transfuse and dosage of transfusion
- transfusion specimen collection
- bedside administration of blood
- issuance/collection of correct product
- timeliness of transfusion
- special requirements/pre-medication
- anaemia assessment and alternatives
- better engagement of patients and their families/carers in the transfusion process.

BloodSafe™ activities have included the involvement of transfusion scientists to help transfusion laboratories better manage their blood stocks and minimise wastage of blood supplies across both the public and private sectors, as well as focus on initiatives to improve transfusion practice within hospitals.

The stakeholders involved in the BloodSafe initiative have worked towards a common goal. This has resulted in improved sharing of ideas and preventative measures amongst hospitals, with stronger relationships forged amongst the organisations involved in the project. Visit the BloodSafe™ web site at <http://www.health.sa.gov.au/BloodSafe> for more information.

11.2 Medication safety

Medicines are a key component of disease management and prevention, and make a significant contribution to the health and wellbeing of our communities. Use of medicines is not without risks, however, as with any form of treatment. Medicine related errors are among the most common medical errors, and the most common threat to patient safety. Estimates suggest that each year[1] in Australia:

- in excess of 140 000 hospital admissions are associated with medicine related problems
- medicine related incidents account for 10–20 per cent of the incidents that are reported in hospitals; importantly, a large proportion, up to 50 per cent, of these incidents are preventable
- medication errors in the public hospital system are estimated to cost $380 million per annum.

Medication safety, therefore, is a significant strategic goal for SA Health. A number of initiatives have been established to improve medication safety for our patients.

11.2.1 Implementation of National Inpatient Medication Chart (NIMC)

Ensuring that a patient in hospital receives the best medication therapy in an accurate and safe manner is a complex process involving many health professionals. One critical element of this process is the communication of the medication order or prescription.

Australian Health Ministers agreed in 2004 to implementing a National Inpatient Medication Chart in all public hospitals by 2006.

The development of the NIMC was informed by research into the most common errors arising from medication charts including human factors research. The NIMC incorporates design features that reduce the potential for errors in prescribing, dispensing and administering of medications; including specific sections managing high risk processes such as documenting adverse drug reactions and high risk medications such as Warfarin, a blood thinning drug. A standard set of abbreviations and administration codes also were incorporated.

Five South Australian hospitals participated in the national pilot and evaluation of the NIMC. The pilot hospitals elected to continue using the NIMC on the basis of the demonstrated improvements in medication management and reduced errors, and subsequently assisted in developing the plan for statewide implementation. SA Health provided resources for project officers to coordinate a series of train-the-trainer workshops and to develop tools to assist hospitals in their local implementation. A regular newsletter and a comprehensive web site also were used to communicate with hospital teams, provide updates and highlight the safety features of the chart.

A feature of the implementation process and the ongoing evaluation of the impact of the NIMC, is the collection of pre- and post-implementation audit data using a standard audit tool. These data are valuable for highlighting areas for further education, and for benchmarking and achieving quality standards for accreditation.

The easier transitioning of staff across sites is an additional benefit of the standardisation of the medication chart and of key processes of the medication use cycle; wherever a doctor, nurse or pharmacist works, the chart will be the same.

The implementation of the NIMC also was an excellent opportunity to raise awareness of the broader issues of medication safety, and of the strategies and processes known to minimise potential for harm.

Implementation of the NIMC in all South Australian public hospitals was completed in March 2007. Further work is now underway to develop a number of specialty charts and an electronic version.

11.2.2 Pharmaceutical Reforms

SA Health continues progress toward implementing the Australian Government's offer of Pharmaceutical Reforms.

The objectives of the reforms are to improve:

- equity of access to medications for patients regardless of their place of care — public or private hospital or community care
- safety and quality of medication management, including smooth transitions between hospital and community based care.

The reforms achieve these objectives via two main strategies:

- access to medications under the Pharmaceutical Benefits Scheme (PBS) for public hospital patients
- implementation of the Australian Pharmaceutical Advisory Council's (APAC) Guiding Principles to achieve continuity of medication management.[2]

Implementation of the reforms — and in particular the APAC guidelines — provides an important opportunity to make a significant and sustained impact on the safety, quality and continuity of medication management for patients of South Australian public hospitals. The 10 guiding principles address all areas of medication management in the patient journey, from admission to discharge back to their primary caregiver.
A component of the reforms, by way of example, is medication reconciliation, including ensuring:

- collection of an accurate medication history of every patient
- confirmation of details of the medication history
- reconciliation of the information (that is, documenting details accurately and ensuring correct information is transferred to the next point in the medication use process).

Other areas covered include, for each patient, preparation of a medication care plan, adverse drug reaction management, medication counseling on discharge and timely transfer of medication information. These functions typically will be provided by a clinical pharmacist or other trained health professional.

SA Health began a 'stepwise' implementation of the APAC guidelines in 2007 with the employment of additional pharmacist positions across the metropolitan hospitals. There has been very positive feedback on the impact of this strategy to-date. It is anticipated that the PBS component of the reforms will be implemented in the 2007–08 financial year and will result in significant improvements in patient outcomes by optimising pharmaceutical care.

11.2.3 High risk medications

SA Health also has a key focus on medications associated with a high risk of error. This focus includes continued support for research and development of safer systems and decision support tools to reduce the associated risks; example are:

- developing standard guidelines for use of anticoagulants (blood thinning medications such as Warfarin and Heparin) with implementation supported by academic detailing; that is, the personal provision of information about the effects of medications to the prescriber by a pharmacist
- developing an IT-based support tool for medications that are removed from the body via the kidneys
- alerting the health care system to the high risk for patient harm from errors with medications such as potassium chloride and vincristine injection by promoting educational material and risk reduction strategies
- conducting research into factors related to insulin and management of hypoglycaemia (low blood sugar) in the acute setting.

11.3 Health care associated infections

SA Health has been monitoring the incidence of health care associated infection and appropriate antibiotic use in its public and private metropolitan hospitals since 2001. An improvement in the overall rate of bloodstream infection has been seen in this time, from 6.5 per 10 000 bed-days in 2002 to 5.9 per 10 000 bed-days in 2006. The rate of infection due to methicillin resistant staphylococcus aureus (MRSA), commonly known as antibiotic–resistant 'golden staph', has been halved over the same period of time, from 3.5 to 1.8 per 10 000 bed-days. Total antibiotic use has remained fairly constant over the period, although there are some concerns about increased use of certain antibiotic classes.

The improvements in infection rates have been achieved through an increased focus on infection control in South Australian hospitals that has been largely facilitated through an infection control 'link nurse' program, funded by SA Health. The Infection Control Service of SA Health oversees this program and delivers centralised training in infection control for the nurses who act as a 'link' between the hospital's infection control teams and the nurses on the wards.

There has been an increased focus on the role of hand hygiene in the transmission of infection in hospitals, and resources have been provided to deal with this problem. SA Health is initiating a project to deliver a package of information and education tools to health care facilities, other government departments, businesses and schools, designed to raise awareness of the importance of hand and respiratory hygiene in preventing the spread of respiratory and gastrointestinal illness within the community as well as in the hospitals.

11.4 Pressure ulcer prevention and management

The development of pressure ulcers (commonly known as bed sores) is considered to be largely preventable. Pressure ulcer rates continue to be of concern, however, and have an effect on the individual concerned, health services and the wider community. Pressure areas can result in pain, decreased mobility and loss of independence. It is expected that the prevalence of pressure ulcers will continue to rise as the population ages.

A Pressure Ulcer Prevention Project was conducted in 2005 involving 13 health services across the state. The participants in this project delivered a comprehensive set of evidence based guidelines, resources and tools that were used to improve the identification, assessment and management of pressure ulcers in their health service. This material is available online at <www.safetyandquality.sa.gov.au> and has received international interest.

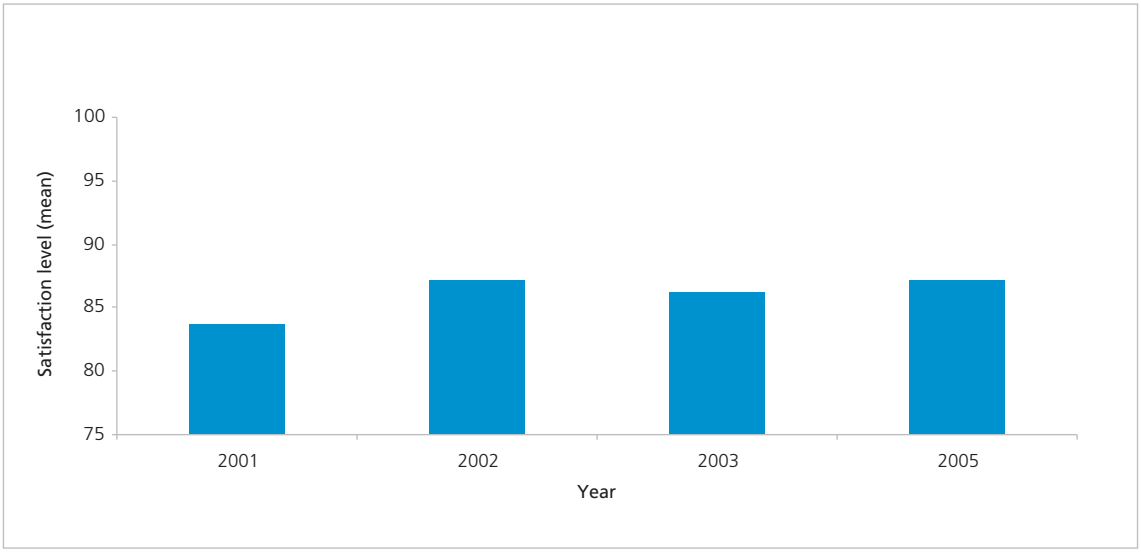
The key recommendation from that project was to conduct a statewide survey on the prevalence of pressure ulcers. The recommended survey, funded by SA Health, has since been conducted, showing a demonstrably strong commitment to and collaboration across private, community, public and aged care health services to improve the quality of health care, and providing a foundation to target specific actions to reduce the prevalence of pressure ulcers. This program is now being extended to continue improvements in managing pressure ulcers in South Australia.

Survey data have been complied in the *South Australian Pressure Ulcer Point Prevalence Survey Report 2007*.[3]

11.5 Patient evaluation of health services

The Patient Evaluation of Health Services (PEHS) Program is an initiative of the former South Australian Safety and Quality Council. The PEHS Program objective is to monitor consumer satisfaction with health services. Surveys are conducted to gain patient's perceptions, experiences and satisfaction with their health service, their care and their treatment.

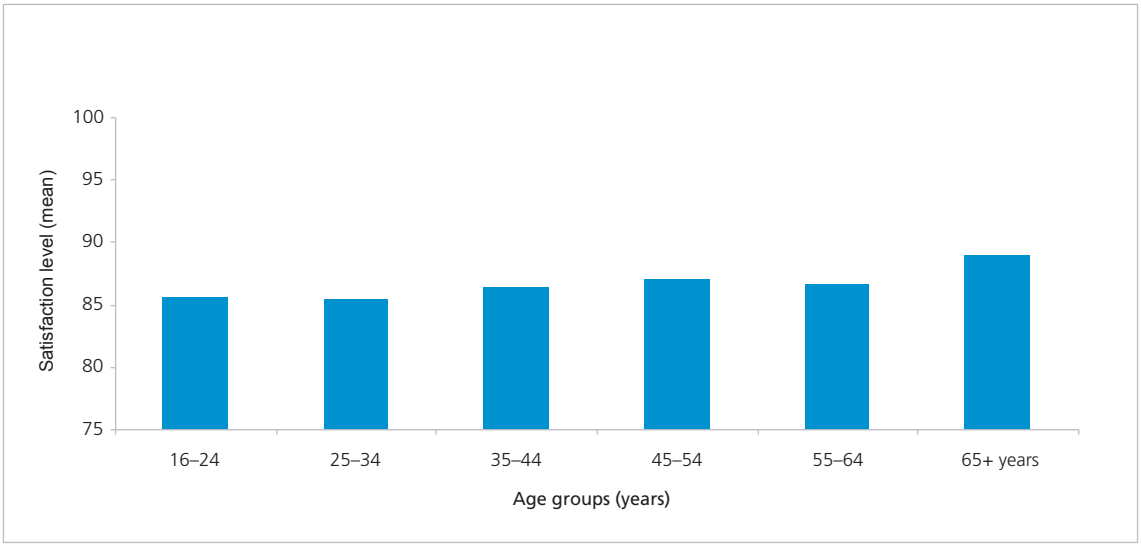
Graph 11.5.1 Overall patient satisfaction from overnight survey



Source: SA Health, Patient Evaluation of Health Services (PEHS) Overnight Surveys.

The overnight PEHS survey is a statewide survey designed to monitor, analyse, benchmark and respond to patient needs, to enhance service delivery and improve patient outcomes. The 2005 overnight survey presented satisfaction scores for a sample of 4 440 adult patients who received at least one night of care in a South Australian public hospital in April, May or June 2005. Data were collected from May to October 2005 using computer assisted telephone interviewing (CATI) techniques. The Overall Patient Satisfaction Score was 87.2 statewide, in 2005, higher than the Overall Satisfaction score of 86.3 for the 2003 survey. Participants in the age group '65+ years' had a significantly higher level of overall satisfaction than did other age groups.

Graph 11.5.2 Patient satisfaction from overnight surveys, by age groups, 2005.



Source: SA Health, Patient Evaluation of Health Services (PEHS) Overnight Survey 2005.

11.6 Sentinel events incident management

Patient safety reporting systems enhance patient safety by facilitating learning from the failures and vulnerabilities of the health care system. Reporting is fundamental to detecting patient safety hazards; however, it cannot alone provide a complete picture of all the sources of risk to patients. Incidents are reported into the Advanced Incident Management System (AIMS), a computerised database system used to support the reporting, investigation and analysis of clinical incidents. Analysis of incidents and their contributing factors at the local and statewide level helps to identify areas where improvements can be made to prevent recurrence. Over 22 000 incidents were reported to AIMS during 2004–05.

The South Australian Sentinel Event Reporting System was introduced in 2003, hence the lower number of reported events in the initial year. Records for subsequent years demonstrate a maturing reporting system with increases in reporting of sentinel events. Better understanding of reporting requirements (for example, including reporting of wrong side radiological incidents that did not cause harm) indicates a robust reporting culture essential for uncovering the underlying causes for these events occurring. The reporting of sentinel events is expected to rise as awareness surrounding sentinel event reporting continues to increase and more attention is drawn to reporting.

Table 11.6.1 Notification of sentinel events

Sentinel events	Notifications received 2003–04	Notifications received 2004–05
Procedures involving the wrong patient or body part	0	10
Suicide/suspected suicide of a patient in an inpatient unit	2	4
Retained instruments or other material after surgery requiring another operation to remove them or further surgical procedure	0	4
Intravascular gas embolism resulting in death or neurological damage	1	1
Haemolytic blood transfusion reaction resulting from ABO (blood type) incompatibility	1	0
Medication error leading to the death of a patient, and reasonably believed to be due to incorrect administration of drugs	0	0
Maternal death or serious morbidity associated with labour or delivery	1	1
Infant discharged to wrong family	0	0
Total	**5**	**20**

Each of these adverse events affects a patient and his/her family and also can affect the health care worker(s). SA Health is committed to the thorough investigation of these events and to implementing actions to prevent their recurring. Root Cause Analysis (RCA) is the primary means of investigating serious adverse events. Events that involve a criminal act, an intentionally unsafe act, patient abuse, or an impaired practitioner do not use the RCA process but, rather, are investigated using alternate methods. RCA is a rigorous method of investigation to identify system weaknesses and gaps that may not be immediately apparent at initial review. The methodology focuses on system improvement, and not on individual performance management, which is managed separately.

Core principles of this investigation process include:

- literature review
- extensive examination of the events to uncover underlying contributing factors
- the potential to lead to procedure and system change; this can occur through system redesign or the introduction of a new process to prevent recurrence
- an interdisciplinary approach — staff on the RCA team have knowledge about the event and the process of care
- a primary focus on systems — staff dig deeper asking what and why until all aspects of the event are reviewed and contributing factors are considered
- an environment that is safe from blame and retribution.

Policies and procedures (18 per cent), staff factors (15 per cent) and communication (13 per cent) were the most common contributing factors to adverse events in 2004–05. Some examples of improvements in health services introduced as a result of RCA investigations in 2004–05 are:

- development of an antenatal risk assessment guide and referral plan that sets out the medical referrals needed if complications arise during pregnancy
- change to documentation used in the emergency department that records the assessment of the level of risk of harm in a mental health patient; this incorporates an observation chart and mental health care plan
- introduction of a form used when providing one-on-one care to mental health patients, which addresses the needs of caring for a patient with suicidal ideation
- establishment of a MET (Medical Emergency Team) as a permanent initiative at a health service
- educating hospital staff on caring for and observing patients with suicidal tendencies
- standardisation of emergency resuscitation trolleys in both layout and content throughout a hospital
- a risk assessment in all ward areas to identify potential hanging points
- installation of night lights to assist visibility and reduce risk of falling when patients are walking to the bathroom
- introduction of a new form collecting data that alerts staff to patients with allergies
- implementation of the correct patient, correct site, correct procedure policy in operating theatres.

SA Health supports the review of all deaths that occur during perioperative care. The Royal Australasian College of Surgeons (South Australia/Northern Territory), in collaboration with South Australian anaesthetists, has been commissioned to conduct the South Australian Audit of Perioperative Mortality.

11.7 Falls, fall-related injuries and falls incidents

Fall injuries are an important threat to the continued independence of older people and place significant demand on health services. The Safety and Quality Unit recognises that good data are essential to inform planning, and to develop and monitor strategies; to this end, a falls and fall-related injury indicator report was completed in 2007.[5] The data presented here extend and complement those presented in chapter eight, *Older People*, of this publication.

11.7.1 The impact on health services

The rate of falling is known to increase ten-fold between 65 and 90 years of age. Older people use health services at a higher rate than those aged under 65. The proportion of resources taken up by falls and fall-related injury is expected to rise until 2050, particularly as there will be an increasing number of people in the older, high risk band.[6]

Table 11.7.1 shows the impact of falls and fall-related injuries on health services within the context of the demand generated by first, the total population, and second, those over 65+ years. Hospitalisation represents the most visible layer of the service demand of fall injury. It is important to note that these data do not include any inward transfers for rehabilitation or convalescence, although estimates based on national data suggest that these will add 36 per cent to bed days.[4]

Table 11.7.1 Separations and bed-days for fall-related injury, 2006–07

Population	Hospital separations	Hospital bed days
Total population	390 616	1 606 320
People over 65 years	144 528 37 per cent for total separation	803 160 50 per cent for total bed-days
Fallers over 65 years	9 095 5.4 per cent of 65+ separations 2.3 per cent for total separations	87 012 7.8 per cent of 65+ bed-days 5.4 per cent for total bed-days Average length of stay (LOS) — 9.6 days

Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

There are no systematic statewide data currently on fall injuries presenting to either emergency departments or general practitioners; however, South Australian Monitoring and Surveillance System (SAMSS) data indicate that nearly 30 per cent of older people report one or more falls in a given year, with 12.1 per cent of those requiring medical treatment. Hospital separations due to falls accounted for 5.4 per cent of all separations of older people.

SA Ambulance Service data for 2006 show that 9 745 persons over 65 were carried by ambulance after a fall (65 per cent female, 35 per cent male). Ambulance attendance for 'lift only' without transport also are believed to represent a smaller, but significant demand on this service. Data analysis shows that the most common place for falls requiring ambulance attendance was the home, followed by places of medical or nursing care — including residential aged care. Older people also fall while outdoors and in places of business (for example, in shops) indicating that falls are not limited to those who are most frail and housebound.

Injuries and deaths as a result of falls from a height, particularly ladders, have been reported by AIHW to be an increasing problem, particularly among older men. A recent study conducted at the Royal Adelaide Hospital[7] concurs with national data and trends. Two-thirds of hospitalised injury incidents from ladder falls in Australia in 2004–05 resulted in fractures, most occurred at home, and they resulted in a mean length of stay of 5.3 days.[8]

11.7.2 The impact of falls injury on older people

Falls have a major effect on older people, in addition to the demand placed on health services. The international literature has demonstrated that falls, and the injuries they cause, contribute to a rapid decrease in independence, severely reduced mobility and are a major reason for the decision to seek supported residential care.[9]

Hip fractures are of particular concern because they can have a major impact on mobility, independence and mortality, despite the length of stay being similar to that of other falls-related injury episodes. Hip fractures are present in approximately 20 per cent of fall-related hospital separations. The pattern of increasing numbers of cases between 2002 and 2006, and with increases in age, is clearly evident in the Table 11.7.2.

Table 11.7.2 Fractures of femur, hospital separations for persons aged 65+ years by year of separation, gender and age group.

	Male						Female					
Year	2002	2003	2004	2005	2006	Total Male	2002	2003	2004	2005	2006	Total Female
Age group												
65 to 69	23	15	21	35	35	129	43	54	38	45	46	226
70 to 74	54	37	45	59	44	239	113	106	86	90	118	513
75 to 79	85	86	82	80	96	429	222	228	207	224	221	1 102
80 to 84	114	139	119	119	134	625	319	384	366	381	386	1 836
85+ years	195	165	175	175	211	921	666	684	616	673	741	3 380
Total	471	442	442	468	520	2 343	1 363	1 456	1 313	1 413	1 512	7 057

Note: ICD-10 codes for fracture type (primarily neck of femur) specified by Vit D Working Party.
Source: SA Health, Integrated South Australian Activity Collection (ISAAC).

11.7.3 Fall injury risk during acute care

Data extracted from the Advanced Incident Management System (AIMS) provide sufficient evidence that there is a need to manage risk while people are receiving inpatient treatment (Table 11.7.3). Falls are the most commonly reported incident (28 per cent). A comparison of falls incident data for all South Australian health services was made between two six-month periods, 1 January to 30 June in both 2006 and 2007. There was a 9 per cent increase in the recorded number of falls incidents in 2007, compared to 2006, with most of this increase occurring in the metropolitan regions. This change could be predicted by increased use of inpatient services and increasing population age, but also may be attributable to interventions designed to increase incident reporting. AIMS collects data through voluntary reporting of hazards and adverse incidents occurring in health facilities. This form of reporting is not designed to define denominator based injury rates. It can be well used, however, for monitoring and managing falls incidents.

Table 11.7.3 Total number of falls reported through AIMS

Health service location	Number of incidents, January to December 2006	Number of incidents, January to December 2007
Metropolitan	1 491	1 762
Country	1 534	1 568
Total	**3 033**	**3 339**

Source: Australian Patient Safety Foundation (APSF).

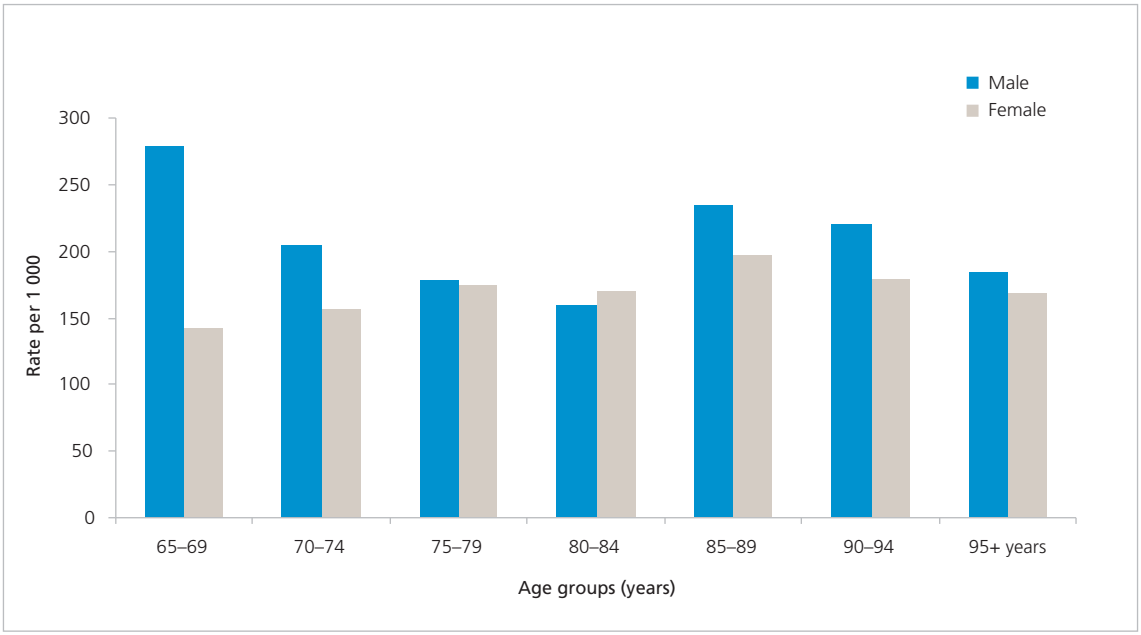
No injury (46 per cent) resulted from 1 537 falls in the six months January to June 2007. However, 931 superficial wounds, open wounds and damage to joint structures, blood vessels and muscles or tendons were reported, with 25 fractures. Some incidents resulted in more than one injury.

11.7.4 Fall injury risk in residential aged care

People in residential aged care are very vulnerable to fall injuries. Supplementation with Vitamin D and calcium are known to reduce the rates of fracture injury from falls in the residential aged care population, where there is almost universal deficiency in Vitamin D, through improving both bone and muscle strength. The Osteoporosis and Fracture Prevention Working Party is promoting prescription of Vitamin D and calcium through training doctors and staff of residential aged care. Sales of a Vitamin D and calcium preparation with the recommended dosage have risen steadily all over Australia, but particularly in South Australia where the per capita sales are now 250 per cent of the per capita sales in the rest of Australia. However, the proportion of the preparation's uptake in residential aged care is unknown. This important initiative is critical in reducing the mortality and morbidity associated with falls in older people, especially those in residential care.

SA Ambulance Service data in Graph 11.7.1 show how important fall injury is in residential aged care. Rates vary from approximately 150 to 275 ambulance transport journeys per 1 000 residents annually. Risk management in Residential Aged Care is an Australian Government responsibility, but fall injuries in this setting clearly have an effect on state run services such as SA Ambulance Service and hospitals.

Graph 11.7.1 Ambulance transport journeys from Residential Aged Care facilities for people aged 65+ years as a result of a fall, 2006



Source: SA Ambulance and AIHW nursing home population data.

11.7.5 Data initiatives

The Safety and Quality Unit is planning the following data initiatives as a consequence of the drafting of the *SA Falls Prevention and Management Strategic Plan* and the completion of the report on falls indicators.[5] A consultant will be commissioned to work with the Osteoporosis and Fracture Prevention Working Party to establish whether the hip fracture rate in South Australia is falling compared with other states and plan to:

- further interrogate SAMSS data to establish trends in service utilisation after falls, fall-related behaviours and risk factors among older people residing in the community
- further improve AIMS reporting processes and audit prevention programs to better identify those at risk
- explore establishing consistent emergency department data in relation to falls injuries
- explore data around ambulance attendance for 'lift only' attendances without transport, and repeat fallers.

11.8 Initiatives

Statewide initiatives in safety and quality form a coordinated approach to risk management and quality improvement in health. Initiatives are *led* by the Department of Health in collaboration with health services, *driven* from local needs and *enabled* throughout SA Health. The system also is responsive to safety priorities that are identified proactively and corrected by system redesign when appropriate.

11.8.1 Safety and Quality Overview

The *South Australian Safety and Quality Framework & Strategy 2007–2011*, with its five action areas, is available at <www.safetyandquality.sa.gov.au>.

Three new groups were formed in 2007 to support and guide safety and quality improvements in the state. The South Australian Council for Safety and Quality in Health Care (the Council) is an advisory body to the Ministers for Health, and Mental Health and Substance Abuse. The Council comprises senior clinical and management leaders in health care and consumers, and is led by an independent Chair. A consumer-based body — the South Australian Safety and Quality in Health Care Consumer and Community Advisory Committee — provides advice to the Council on the consumer perspective of safety and quality issues in health care. The South Australian Safety and Quality in Health Care Clinical Governance Committee, with representation from heads of clinical governance from South Australia's health system, assists in planning the implementation of the *SA Safety and Quality Framework & Strategy 2007–2011*.

A Patient Safety Workshop incorporating Root Cause Analysis training has been provided by the Safety and Quality Unit to SA Health clinicians since 2003 and is ongoing. A report on patient safety — *Improving the System: South Australian Patient Safety Report* — was released in 2007 (available at <www.safetyandquality.sa.gov.au>).

11.8.2 Clinical links

Many of the initiatives discussed in this chapter are examples of significant programs with ongoing work. The following is a summary of links, reports and current projects.

- BloodSafe™, web site at <http://www.health.sa.gov.au/BloodSafe>.
- Implementation of the National Inpatient Medication Chart (NIMC) was completed across all South Australian hospitals in March 2007. Further work is underway now to develop a number of speciality charts and to deliver an electronic version. More information is available at <http://www.safetyandquality.sa.gov.au/nimc> and <www.safetyandquality.gov.au>
- Staged implementation of Pharmaceutical Reforms will continue in 2007–08. More information — including a copy of the national medication management guidelines — is available at <http://www.safetyandquality.sa.gov.au/pharmreforms>
- Delivery is underway in 2007–08 of a hand hygiene information package and education tools to health care facilities, other government departments, businesses and schools. This program aims to raise awareness of the importance of hand and respiratory hygiene in preventing the spread of respiratory and gastrointestinal illness within the community and hospitals.
- The draft South Australian Pressure Ulcer Point Prevalence Survey Report, 2007 will be released after its ratification. A copy will be available at <http://www.safetyandquality.sa.gov.au>. Recommendations that may become future initiatives are listed in the report.
- The Patient Evaluation of Health Services (PEHS) is a survey initiative in place to continuously monitor and respond to patient needs to enhance service delivery and improve patient outcomes, available at <http://www.health.sa.gov.au/pros>.
- Sentinel events are analysed primarily using the Root Cause Analysis (RCA) model; this ongoing cycle, including expert stakeholder input, facilitates both local problem solving and the establishment of more widespread solutions such as the Medical Emergency Team (MET) approach.
- The Osteoporosis and Fracture Prevention Working Party is implementing activities to help reduce the harmful impact of falls by promoting the supplementation of Vitamin D and calcium for people who are living in residential care.
- The South Australian Falls Prevention and Management Plan has been drafted, as has a program for implementation of national guidelines for falls prevention in acute and residential aged care.

11.9 Notes

1 Australian Council for Safety and Quality in Health Care, *Second National Report on Patient Safety: Improving Medication Safety*, Commonwealth Department of Health, Canberra, 2002, viewed 28 November 2007, <http://www.safetyandquality.gov.au/internet/safety/publishing.nsf/Content/F0FD7442D1F2F8DDCA2571C6000894FF/$File/med_saf_rept.pdf>

2 Australian Pharmaceutical Advisory Council, *Guiding principles to achieve continuity in medication management*, Commonwealth of Australia, Canberra, 2005 viewed 4 December 2007, <http://www.health.gov.au/internet/wcms/publishing.nsf/Content/D900D825B95328DACA25705A00181F55/$File/guiding.pdf>

3 Department of Health South Australia, *South Australian Pressure Ulcer Point Prevalence Survey Report 2007*, Department of Health South Australia, Adelaide, 2007, will shortly be available to be viewed at <http://www.safetyandquality.sa.gov.au>

4 C Bradley and J E Harrison, 2007, 'Hospitalisations due to falls in older people, Australia, 2003–04.' Injury research and statistics series number 32. AIHW cat. No. Injcat 96:Adelaide.

5 J Moller, 2007, Falls and fall-related injuries among older people: Indicators for planning and monitoring. A preliminary review of South Australian Health approaches, in draft.

6 J Moller, 2002, Patterns of fall injury in an ageing population in South Australia: A challenge for prevention and care. South Australia DHS.

7 A Kent and A Pearce, 2006, 'Review of morbidity and mortality associated with falls from heights among patients presenting to a major trauma centre.' Emergency Medicine Australasia, 18: 23–30.

8 C Bradley, 2007, 'Ladder-related fall injuries', AIHW, Number 11, August 2007, Injcat No 105.

9 L Z Rubenstein, 2006 'Falls in older people: epidemiology, risk factors and strategies for prevention.' Age and Ageing 35 (Supplement2:ii37–ii41;doi:10.1093/ageing/afl084).

Appendices

Appendix 1 – Glossary

Acute	Of relatively short duration and relatively high severity.
Adverse event	A situation in which an individual receiving health care has been harmed in some way, as a direct or indirect effect in relation to that care.
Age-sex standardisation	A technique which allows more meaningful comparisons of two or more populations by adjusting for the effects of age and sex.
Anxiety conditions	Mental disorders in which anxiety, as a normal response to stress, becomes exacerbated into an 'excessive' reaction, ranging from pervasive low-level feelings of dread to panic attacks; this family of conditions includes social phobia, generalised anxiety disorder, obsessive compulsive disorder, post-traumatic stress disorder, and panic disorder.
Available beds	Those beds in a hospital that are staffed and available for use by overnight stay admitted patients as required.
Average length of stay	The average number of days patients stay in hospital; admissions and separations from hospital on the same day count as one day.
Avoidable mortality	The deaths of people aged between birth and 74-years-old, of causes that led to deaths that could have been avoided by preventative or therapeutic means.
Baby boomer	An Australian born between the mid-1940s and the mid-1960s, which was a post-war period of increased fertility.
Birth weight	The weight of a newborn, immediately after birth.
Burden of disease	The complete effect of disease on society measured by years of life lost to ill-health (see YLL) and 'healthy' years of life lost due to disability (see YLD).
Caesarean section	As distinct from vaginal birth, the delivery of a fetus by surgically removing the fetus from the uterus through the abdomen.
Cardiovascular disease (CVD)	Diseases of the circulatory system, including the heart, veins, arteries and capillaries; for example, myocardial infarction (heart attack), congestive heart failure, and trans ischaemic attack (stroke).
Cerebrovascular disease	Stroke, in which the brain is damaged by the effects of blocked, burst or malfunctioning blood vessels in the head.
Chronic diseases	Diseases and disorders characterised by being of relatively long duration and persistence, often with low-level and/or ongoing symptoms that are not immediately life-threatening.
Clinical urgency	A clinical assessment of the urgency within which a patient requires elective hospital care; there are three urgency categories: urgent, semi-urgent and non-urgent.
Cohort	A group whose individuals have defined characteristics in common, such as age and risk factors, or age and gender; used in statistics to limit the parameters of a generational group for the purposes of study (for example, all children born in 1999, women within childbearing age).

Co-morbidity	Diseases and/or disorders that exist together in the same patient; for example, obesity and Type 2 diabetes.
COPD	The acronym for chronic obstructive pulmonary disease, a respiratory disease in which breathing becomes forced and laboured, such as in emphysema.
Crude birth rate	The number of live births per 1 000 population in a given year; the term 'crude' is used because the calculation does not account for age and sex differences (see age-sex standardisation).
Crude death rate	The number of deaths per 1 000 population during a given period, usually a year.
Depression	A disorder characterised by prolonged periods of sadness, despair, and feelings of inadequacy, in which sufferers may experience symptoms ranging from pronounced ennui and lack of energy, disinterest in the normal activities of life, and an inability to see an end in sight to feeling low, through to suicidal thoughts and action.
Disability adjusted life year (DALY)	A way of measuring the combined effect of morbidity (disease and disorder) and mortality (loss of life) that shows the 'burden of disease'.
Elective care	Treatment that is clinically necessary but does not require immediate attention or admission to a hospital within 24 hours.
Elective surgery	Elective care in which patient procedures are listed in the surgical operations section of the Medicare Benefits Schedule, excluding specific procedures performed by non-surgical clinicians as well as some procedures where the associated waiting time is strongly influenced by factors other than the supply of services.
Endemic	A disease or condition that is indigenous to an area or a population.
Epidemic	A contagious disease (such as influenza) that is not normally endemic, characterised by a rapid spread throughout a population and affecting atypically large numbers (although not necessarily all) of them.
Episode of care	The period of admitted patient care characterised by one type of care, (for example, acute care and maintenance care).
External cause	The environmental event, circumstance or condition that has caused an injury or illness; for example, pollution or poison (environmental) or car accident (circumstance).
Fertility rate	The number of children an (imaginary) individual woman could bear if the age-specific rates of the year shown continued during her child-bearing lifetime, typically regarded as being between 15–44 years or 15–49 years of age.
Health	The condition in which an individual enjoys not just the absence of disease or injury in both body and mind, but also experiences the presence of vigour, strength and good function, as a normal or usual state.
Health adjusted life expectancy (HALE)	A measure of quality of life, as well as quantity (also referred to as `Healthy life expectancy'), defined by the Australian Institute of Health and Welfare as an estimate of the average years of equivalent 'healthy' life that a person can expect to live at various ages.

Hospital	A health care facility established under Commonwealth, state or territory legislation as a hospital or a free-standing day procedure unit and authorised to provide treatment and/or care to patients.
ICD-10	The tenth revision of the International Classification of Diseases developed by the World Health Organization. The suffix of AM (ICD-10-AM) means Australian modifications, the version in use in Australian hospitals.
Incidence	The number of instances of illness, or individuals who fall ill, during a specified period in a particular population.
Infant mortality	The death of a child before his or her first birthday.
Ischaemic heart disease	Disease characterised by reduced blood supply to the heart muscles, often because of blockages in the arteries; it may lead to angina (chest pain) and heart attack; also known as coronary heart disease.
K10	A diagnostic tool called the Kessler Psychological Distress 10 item scale (K10), involving a scale of 10 questions, the answers to which identify the level of psychological distress (anxiety and depression) in the individual over the four weeks preceding questioning.
Labour force	Those members of the population who either are employed or, while unemployed, are seeking employment.
Length of stay	The duration of a patient's stay in hospital from admission to separation, minus any time the patient was 'on leave'. Patients admitted and separated on the same day are assigned a stay of one day.
Life expectancy (LE)	The likelihood of living an average number of further years at a particular age.
Maternal death	The death of a woman during her pregnancy or within 42 days of the pregnancy's end, due to any cause arising from or worsened by the pregnancy but excluding both accidental and incidental causes.
Median	The middle point in a series of values.
Morbidity	A term that refers both to an individual's ill health and to ill health within a population or group; usually expressed as a rate or incidence.
Mortality rate	The rate of death in a population in a given area and period of time, expressed as a ratio of deaths per 1 000 people.
Neonatal death	An live born infant who dies within 28 days of birth.
Neonatal morbidity	Any condition or disease diagnosed in an infant within 28 days of birth.
Neoplasm	A new growth within the body (often called a tumour), which may be either malignant or benign, but which serves no purpose.
Neurotic	An encompassing term describing behaviours often associated with anxiety conditions, and manifesting either or both emotional or physical symptoms that may be self-harmful or socially inappropriate.
Pandemic	A term describing an epidemic that affects large numbers of people across geographic areas on a scale ranging from national to continental to planetary.
Perinatal	The period around birth, from the 20th week of gestation to 28 days after delivery.

Postnatal	Matters concerning newborn infants, in the period immediately after birth.
Potentially preventable hospitalisations	Hospitalisations for conditions which might be avoided if appropriate, necessary and timely care is given elsewhere.
Prevalence	The total number of instances of a particular disease or condition in a specified population at a defined time.
Principal diagnosis	The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care.
Private hospital	A privately owned and operated institution, catering for patients who are treated by a doctor of their own choice. Patients are charged fees for accommodation and other services provided by the hospital and relevant medical and paramedical practitioners. Acute care and psychiatric hospitals are included, as are private free-standing day hospital facilities.
Public hospital	A hospital controlled by a state or territory health authority. Public hospitals offer free diagnostic services, treatment, care and accommodation to all eligible patients.
Quintile	One fifth of the total sample, obtained by dividing into five equal parts the total of a population that has been organised by specific criteria.
Remoteness Area	The division of Australian into five levels of remoteness based on Accessibility/Remoteness Index of Australia. The categories of remoteness are: Major cities, Inner regional, Outer regional, Remote, and Very remote.
Schizophrenia	Mental illness characterised by an individual's disconnect with and removal from reality through delusions and hallucinations, accompanied by problems around mood and motivation.
Self-assessed health status	The way in which a person perceives (and reports) his or her own health and wellbeing.
Separation	The point at which a patient's episode of care in hospital has ended, either through discharge, transfer to another health facility, death or change in episode of care.
Socioeconomic disadvantage	A situation where one or more groups in a community has fewer financial and material resources, as measured against others within that community; individuals who are socioeconomically disadvantaged typically have reduced access to education, health, information, food and housing, and so on, compared to others of their age and gender in the same community.
Statistical Local Areas (SLAs)	Defined geographical areas based on the boundaries of incorporated bodies of local government where these exist; these bodies are the Local Government Councils and the geographical areas which they administer are known as Local Government Areas (LGAs).
Triage category	A method of indicating the urgency of the patient's need for clinical care in Emergency Departments. Patients are triaged into one of five categories specified in the Australian National Triage Scale.

Years lost to disability or illness (YLD)	A measure of the morbidity burden of a disease in a population. YLDs represent the number of 'healthy' years of life lost due to disability. Disability refers in this definition to any departure from an ideal health state. Each stage of each condition is given a severity weight between 0 and 1 (for example, 0.5 or 0.3 or 1); in this severity weight 1 is the most severe. YLD are the product of the number of incident cases of the condition in the reference period, the severity weight for the condition and the average duration in years of the condition; for example, 10 incident cases of a disease which has a severity of 0.5 and lasts on average for two years would have a morbidity burden of 10x0.5x2=10 YLD.
Years of life lost (YLL)	A measure of the burden of premature mortality in a population, equal to the number of years of expected life not lived due to death from a given condition. For example, if there are 10 deaths from a certain disease in the female 45–54 age category, the average age at death for deaths in the 45–54 age female category is 50, and the standard life expectancy for 50-year-old women is taken as 32 years, then the burden of premature death from that disease is 10x32=320 YLL.

Appendix 2 – Data sources

This section provides a brief description of the major data sources used to produce the information presented in this report.

Confidence intervals are not shown throughout the report for data taken from the surveys. Surveys are based on a limited numbers of participants/respondents and hence the level of reliability of the data is variable.

SA Health data collections

The quality of data used throughout this report is good overall. Attention has been paid to data quality to ensure clean and standardised information. However, in some cases, errors or inconsistencies in the data may be present. Data used from earlier years may be less reliable than that produced more recently.

Collection	Description
Advanced Incident Management System (AIMS)	Collection based on adverse events/incidents that occur in major metropolitan and country public hospitals.
Booking List Information System (BLIS)	Monthly data provided by seven major metropolitan hospitals around patients who are on a waiting list for elective surgery.
Child Adolescent Mental Health System	Client-level collection based on services provided by South Australia's two units that provide specialist child and adolescent mental health services.
Central Cancer Registry	Collection designed to monitor trends in cancer incidence, mortality and survival.
Community Based Information System (CBIS)	Data on all non-inpatient contacts with the mental health system.
Country Consolidation CME (CCC)	Client and activity data from country Community Health Centres, including mental health and palliative care contacts.
Emergency Department Data Collection	Patient-level collection based on services provided in emergency departments in major metropolitan hospitals.
Health Omnibus Survey	Population health survey (face-to-face) conducted annually for government and non-government organisations responsible for servicing the health needs of the South Australian community; surveys conducted on a user-pays basis.
Home and Community Care (HACC) Data Collection	Survey of HACC services provided by public health units and the non government sector; conducted in May and November each year.
Integrated South Australian Activity Collection (ISAAC)	Hospital morbidity database covering inpatient separations from all public and private hospitals, including day surgery facilities, in South Australia.
Monthly Management Summary System (MMSS)	A monthly summary of activity, workforce, finance and patient account data from all public health units.
Patient Evaluation of Health Services (PEHS) Overnight Survey	Statewide survey designed to monitor, analyse, benchmark and respond to patient needs, to enhance service delivery and improve patient outcomes.
South Australian Burden of Diseases Study	Describes the amount of ill health and premature death in South Australia for a comprehensive list of illnesses and injuries, using summary population health measures: Years of life lost (YLL), Years of healthy life lost to disability (YLD), Disability adjusted life years (DALY) and Health adjusted life expectancy (HALE) measures.

South Australian Monitoring and Surveillance System (SAMSS) Survey	Representative population data for South Australians collected via telephone surveys (minimum 600 interviews per month); provides trend information on risk factors and chronic diseases.
South Australian Pressure Ulcer Point Prevalence Survey (PUPPS)	A snapshot of the current number of patients in hospital with a pressure ulcer at any one time; measures the extent of the pressure ulcer problem.
Sentinel Events Reporting System	Collection for monitoring a core set of sentinel events in major metropolitan and country public hospitals; recently expanded to include mental health reportable events.

Other data sources

Collection	Description
Active Australia Survey (AAS)	Survey conducted by the Australian Institute of Health and Welfare (AIHW) designed to measure participation in leisure-time physical activity and to assess knowledge of current public health measures about the health benefits of physical activity.
Bettering the Evaluation and Care of Health (BEACH) Survey	Information about the clinical activities in general practice in Australia, including characteristics of the general practitioner, patients seen, reasons people seek medical care, problems managed, and data around problem managed.
Child Dental Health Surveys (CDHS)	An annual monitoring survey of the oral health of children under care of the eight state and territory school dental services, providing descriptive yearly epidemiological and service provision data concerning children's dental health in Australia.
Deaths data	Coded deaths data provided by the Australian Bureau of Statistics (ABS); a primary source for analysing deaths data.
National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)	Provides information about the health circumstances of Aboriginal and Torres Strait Islander Australians from remote and non-remote areas across Australia, and about how these circumstances have changed compared with results from Aboriginal and Torres Strait Islander components of the National Health Surveys.
National Dental Telephone Interview Survey (NDTIS)	An annual survey which collects data on basic features of oral health and dental care within the Australian population.
National Health Survey (NHS)	A series of regular population surveys designed to obtain national benchmark information on a range of health-related issues and to enable health trend monitoring over time.
National Survey of Adult Oral Health (NSAOH)	An oral health examination survey aimed to describe levels of oral disease, perceptions of health and patterns of dental care within a representative cross-section of adults in all states and territories in Australia.
National Survey of Mental Health and Wellbeing (NSMHW)	Gathers information on the prevalence of mental illness in the Australian population, the amount of associated disablement, and the use of health and other services by people with mental disorders or mental health problems; comprises three components: an adult study, a child and adolescent study, and a study of low-prevalence (psychotic) disorders such as schizophrenia.
Socio-Economic Indicators for Areas (SEIFA)	Dataset that defines the socioeconomic wellbeing of Australian communities at the small area level; derived from ABS Census data.

For more information

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 ISBN: 9780730898207
Printed June 2008.

Government of South Australia

SA Health